Lay Beliefs About Doctors' Knowledge of and Reasons for Recommending COVID-19 Vaccines

BACKGROUND

Commonly cited as the most trusted source of information about COVID-19 vaccines, healthcare providers have an important role in promoting COVID-19 vaccination [1], [2]. While a healthcare provider recommendation is associated with greater likelihood of being vaccinated against COVID-19 [3], there is limited understanding of lay beliefs about providers' knowledge of COVID-19 vaccines and reasons for promoting vaccination.

OBJECTIVE

To assess lay beliefs about doctors' knowledge of and reasons for promoting COVID-19 vaccination and to examine the association between beliefs and COVID-19 vaccination status.

METHODS AND FINDINGS

We conducted a cross-sectional survey of English-speaking, US-based, adult members of the Prolific online research panel between January 03 and February 17, 2022. With a multi-step member verification process at the time of enrollment [4], Prolific has been shown to provide higher quality data than other online panels [5]. We restricted the sample to panel members who identified as White, Black, or Latino and oversampled Blacks and Latinos given the previously high levels of reported COVID-19 vaccine hesitancy in these groups [6]. Respondents received $1.50. Items assessed COVID-19 vaccination status, beliefs about doctors' expertise and motivations related to the COVID-19 vaccines, and views on doctors in general. Response options were dichotomized into agree (strongly/somewhat) and disagree (strongly/somewhat). We computed frequencies and percentages and used chi-square testing to examine differences in perceptions of doctors according to vaccination status.

Respondent characteristics are shown in Table 1. Of the 1039 respondents, 806 (77.6%) were vaccinated and 233 (22.4%) were unvaccinated against COVID-19 at the time of the survey.

Respondents' views of doctors differed significantly according to vaccination status (Fig. 1; $p < .001$ for all comparisons). Unvaccinated respondents were significantly less likely than vaccinated respondents to agree that most doctors "are well informed" (71.4% vs 94.5%) and "know how to evaluate the evidence" (60.8% vs 88.3%) about COVID-19 vaccines. Unvaccinated respondents were significantly more likely than vaccinated respondents to agree that most doctors "don't know about problems people have had after getting the COVID-19 vaccines" (51.5% vs 19.4%) and "can't make an informed recommendation because the vaccines are so new" (65.2% vs 21.5%). More unvaccinated respondents agreed that most doctors "are too influenced by the drug companies making the vaccines" (72% vs 29%), "are saying what they have been told to say about the vaccines" (75.1% vs 39.3%), and "get some financial benefit from getting more of their patients vaccinated" (58.4% vs 22.3%) compared to unvaccinated respondents, respectively.

Unvaccinated respondents were less likely to agree with positive statements about doctors in general. The difference between unvaccinated and vaccinated respondents was greater for COVID-19 vaccine–specific items than for the items assessing respondents' general views of doctors (Fig. 1). Among the respondents with a personal doctor ($n = 663$), there was no significant difference in the mean doctor rating between vaccinated and unvaccinated respondents (7.46/10 vs 7.26/10; $p = .28$).

DISCUSSION

In this study of lay beliefs about doctors' knowledge of and reasons for promoting COVID-19 vaccination, we found surprisingly high rates of agreement with negative statements related to physicians' knowledge and motivations around COVID-19 vaccines. Despite evidence establishing healthcare providers as the most trusted source of information about the COVID-19 vaccines [1], [2], approximately one-third of respondents overall somewhat or strongly agreed that most doctors get financial benefit from getting their patients vaccinated, are too influenced by the drug companies making the vaccines and are saying what they are told to say about the

Table 1 Sociodemographic Characteristics of Survey Respondents

Characteristic	Overall N = 1039 (%)	Vaccinated N = 806 (%)	Unvaccinated N = 233 (%)
Age			
Less than 24	215 (20.8)	180 (22.4)	35 (15.1)
25–34	260 (25.1)	211 (26.3)	49 (21.1)
35–44	276 (26.7)	209 (26.0)	67 (28.9)
45–54	159 (15.4)	107 (13.3)	52 (22.4)
55–64	95 (9.2)	71 (8.8)	24 (10.3)
65+	30 (2.9)	25 (3.1)	5 (2.2)
Gender			
Male	426 (41.2)	339 (42.3)	87 (37.7)
Female	592 (57.3)	449 (56.0)	143 (61.9)
Other	15 (1.5)	14 (1.7)	1 (0.4)
Race/ethnicity			
Hispanic/Latino	312 (30.1)	268 (33.3)	44 (18.9)
Black/African American	321 (30.9)	227 (28.2)	94 (40.3)
White	405 (39.0)	310 (38.5)	95 (40.8)
Education			
High school or less	250 (24.1)	165 (20.5)	85 (36.6)
Some college	507 (48.9)	391 (48.6)	116 (50.0)
4-year college or higher	280 (27.0)	249 (30.9)	31 (13.4)
Marital status			
Married or living with a partner	441 (42.5)	335 (41.6)	106 (45.5)
Other	597 (57.5)	470 (58.4)	127 (54.5)
Region of residence			
South	480 (46.3)	359 (44.7)	121 (51.9)
West	209 (20.2)	169 (21.0)	40 (17.2)
Northeast	176 (17.0)	143 (17.8)	33 (14.2)
Midwest	171 (16.5)	132 (16.4)	39 (16.7)
Political affiliation			
Democrat	508 (48.9)	445 (55.3)	63 (27.0)
Independent	248 (23.9)	175 (21.7)	73 (31.3)
Republican	134 (12.9)	78 (9.7)	56 (24.0)
No political affiliation	126 (12.1)	87 (10.8)	39 (16.7)
Other	22 (2.1)	20 (2.5)	2 (0.9)
Employment			
Employed	535 (51.6)	412 (51.2)	123 (53.0)
Unemployed	175 (16.9)	137 (17.0)	38 (16.4)
Student	133 (12.8)	117 (14.5)	16 (6.9)
Homemaker	76 (7.3)	48 (6.0)	28 (12.1)
Disabled	46 (4.4)	35 (4.3)	11 (4.7)
Retired	44 (4.2)	35 (4.3)	9 (3.9)
Other	28 (2.7)	21 (2.6)	7 (3.0)
Experienced financial stress			
Never	239 (23.1)	191 (23.8)	48 (20.6)
Rarely	250 (24.2)	192 (23.9)	58 (24.9)
Sometimes	293 (28.3)	228 (28.4)	65 (27.9)
Frequently	253 (24.4)	191 (23.8)	62 (26.6)
Overall health			
Poor	50 (4.8)	37 (4.6)	13 (5.6)
Fair	206 (19.8)	167 (20.7)	39 (16.8)
Good	459 (44.2)	353 (43.8)	106 (45.7)
Very good	250 (24.1)	192 (23.8)	58 (25.0)
Excellent	73 (7.0)	57 (7.1)	16 (6.9)
Overall mental health			
Poor	129 (12.4)	107 (13.3)	22 (9.4)
Fair	279 (26.9)	229 (28.4)	50 (21.5)
Good	311 (30.0)	250 (31.1)	61 (26.2)
Very good	212 (20.4)	151 (188)	61 (26.2)
Excellent	107 (10.3)	68 (8.4)	39 (16.7)

Missing values < 0.6% of the sample for all characteristics

COVID-19 vaccines. This highlights a need for clear communication regarding the lack of financial incentives to physicians specifically related to COVID-19 vaccines, and regarding conflicts of interest in general. It also suggests that physicians should consider being explicit about these influences when communicating with their patients about the COVID-19 vaccines. While it is obvious to doctors that they are not getting paid to get patients vaccinated, a substantial percentage of the population believes they are, which may weaken the impact of a doctors' recommendation for COVID-19 vaccination.

Unvaccinated respondents in this study had more negative views of doctors than vaccinated respondents overall. However, the difference was larger for COVID-19-specific items than for general items and there was no difference in the ratings of personal doctors between unvaccinated and vaccinated respondents suggesting that the more negative views of
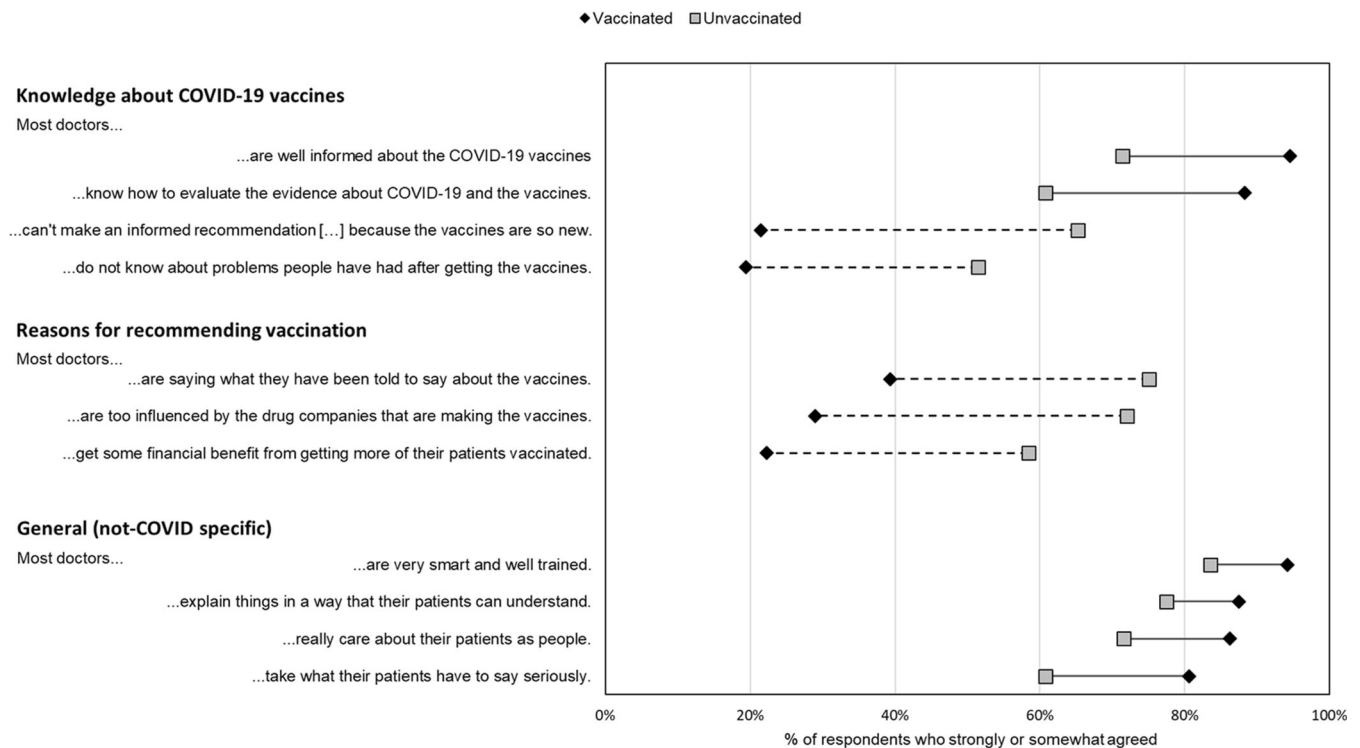
Figure 1 Beliefs about doctors according to COVID-19 vaccination status.

unvaccinated respondents are at least in part COVID-19 vaccine specific. Pervasive misinformation about COVID-19 vaccines may have contributed to negative views of doctors specifically in this domain, but causality is uncertain.

This study has limitations. Our sample is not representative of the general US population; however, it is diverse on many important characteristics including race/ethnicity, geographic location, education, and political affiliation. Due to the cross-sectional design, we are unable to assess causality between respondents' views of doctors and vaccination status or how these views developed or might be changed. It is unknown whether doing so would enhance the impact of a doctor's recommendation for COVID-19 vaccination. Our study did not assess whether these findings apply to vaccines other than COVID-19.

Although there is evidence that doctors are the most trusted source of information about COVID-19 vaccines, this study provides insights into specific beliefs that may undermine this trust and could hinder doctors' efforts to promote COVID-19 vaccination.

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Declarations:

Conflict of Interest: *The authors declare that they do not have a conflict of interest.*

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