

Table 3 Bivariate analysis for health belief model as determinants of COVID-19 vaccine acceptance or refusal among the participants who responded positively to the tested perceptions among healthcare workers (n = 576) in Sudan, 2021

Determinant	Belief	Accept No. (%)	Refuse No. (%)	Unadjusted OR (95% CI)	P
Perceived susceptibility	I believe am at risk to get COVID-19 infection ¹	307 (79.9)	77 (20.1)	2.72 (1.35–5.49)	< 0.01
Perceived benefit	I don't believe the vaccine works	26 (51.0)	25 (49.0)	0.1 (0.05–0.20)	< 0.01
Perceived harm (overall) ²	High	13 (34.2)	25 (65.8)	0.11 (0.05–0.23)	< 0.01
	Low	316 (82.5)	67 (17.5)		< 0.01
Perceived barriers	I don't trust the pharmaceutical companies producing the vaccine ¹	37 (42.0)	51 (58.0)	0.16 (0.08–0.31)	< 0.01
	I don't trust the organizations/ government supervising the COVID-19 vaccination process	43 (48.3)	46 (51.7)	0.31 (0.17–0.58)	< 0.01
Perceived severity	Mild	165 (79.7)	42 (20.3)	0.51 (0.24–1.11)	0.09
	Moderate	69 (88.5)	9 (11.5)	0.52 (0.19–1.39)	0.19
	severe	38 (88.4)	5 (11.6)	2.48 (1.45–4.25)	< 0.01
	Not concerned ³	57 (61.3)	36 (38.7)		

¹Reference was "Disagree" and "Agree" (negative response)

²Perceived harm was categorized as "High" if the respondents always agree "A lot" or "A little" here at the reasons to refuse; otherwise they were categorized as "Low"

³Reference