

### Supplementary material

**Table S1: Factors associated with COVID-19 vaccine acceptance that were selected and analyzed**

Factors identified in the cross-sectional VA studies selected for our analysis	Factors grouped using the Health Belief Model (demographic, psychosocial, and structural variables) for further analysis in this study.
<ul style="list-style-type: none"> <li>• 18 – 30 years</li> <li>• 30 – 40 years</li> <li>• 40 – 50 years</li> <li>• 51 – 60 years</li> </ul>	Younger people
<ul style="list-style-type: none"> <li>• Above 60 years</li> </ul>	Older people
<ul style="list-style-type: none"> <li>• Male</li> </ul>	Male
<ul style="list-style-type: none"> <li>• Female</li> </ul>	Female
<ul style="list-style-type: none"> <li>• Rural</li> </ul>	Rural
<ul style="list-style-type: none"> <li>• Urban</li> </ul>	Urban
<ul style="list-style-type: none"> <li>• No education</li> <li>• Primary education</li> <li>• Secondary education</li> </ul>	Low education
<ul style="list-style-type: none"> <li>• Professional training</li> <li>• University level</li> <li>• Postgraduate level</li> </ul>	High education
<ul style="list-style-type: none"> <li>• Smoker</li> </ul>	Smoker
<ul style="list-style-type: none"> <li>• Non – smoker</li> </ul>	Non – smoker
<ul style="list-style-type: none"> <li>• Self-protection</li> <li>• Protect others</li> </ul>	Protection
<ul style="list-style-type: none"> <li>• Not married</li> <li>• Single</li> </ul>	Single
<ul style="list-style-type: none"> <li>• Married</li> <li>• Living with spouse</li> </ul>	Married
<ul style="list-style-type: none"> <li>• Living with children</li> <li>• Living with elderly</li> </ul>	Living with relatives
<ul style="list-style-type: none"> <li>• Lower income</li> </ul>	Lower income earner
<ul style="list-style-type: none"> <li>• Higher income</li> </ul>	Higher income earner
<ul style="list-style-type: none"> <li>• Medical students</li> <li>• Nurses</li> <li>• Midwife</li> <li>• Laboratory technicians</li> <li>• Medical doctors</li> <li>• Community health workers</li> </ul>	Healthcare worker
<ul style="list-style-type: none"> <li>• Other vaccines for childhood</li> <li>• Other vaccines for adults</li> <li>• Influenza vaccine</li> </ul>	Influenza/Other vaccines
<ul style="list-style-type: none"> <li>• student</li> </ul>	Student
<ul style="list-style-type: none"> <li>• private sector</li> </ul>	Private sector
<ul style="list-style-type: none"> <li>• Christians</li> </ul>	Christians
<ul style="list-style-type: none"> <li>• Muslims</li> </ul>	Muslims
<ul style="list-style-type: none"> <li>• No adverse effect</li> </ul>	Safety

<ul style="list-style-type: none"> <li>• No side-effects</li> <li>• Safety</li> </ul>	
<ul style="list-style-type: none"> <li>• High risk of infection</li> </ul>	High risk of infection
<ul style="list-style-type: none"> <li>• Effectiveness</li> <li>• Efficacy</li> <li>• Trust COVID-19 vaccines</li> <li>• Trust manufacturer</li> </ul>	Effectiveness
<ul style="list-style-type: none"> <li>• Scared of infection</li> <li>• Prior infection</li> <li>• Knows someone who has been infected</li> <li>• Tested positive for COVID-19</li> <li>• COVID-19 is dangerous and kills</li> <li>• Compliance with protective measure</li> </ul>	Fear of infection
<ul style="list-style-type: none"> <li>• Chronic disease</li> <li>• Poor health</li> <li>• Comorbidities</li> </ul>	Comorbidities
<ul style="list-style-type: none"> <li>• No previous infection</li> <li>• Good health</li> </ul>	Good health
<ul style="list-style-type: none"> <li>• Reliable information</li> <li>• social responsibility</li> <li>• Trust Ministry of Health</li> <li>• Trust government</li> <li>• Vaccine recommended by healthcare workers</li> <li>• Believe in community/public leaders</li> <li>• Trust</li> <li>• Vaccines are important</li> </ul>	Trust
<ul style="list-style-type: none"> <li>• Frequent traveller</li> </ul>	Frequent traveller
<ul style="list-style-type: none"> <li>• Forced vaccination</li> <li>• Mandatory vaccination</li> <li>• Compulsory by employer</li> <li>• Compulsory by gov't</li> </ul>	Mandatory vaccination

**Table S2: Factors associated with COVID-19 vaccine hesitancy that were selected and analyzed in this study**

Factors identified in V-H studies	Factors grouped using the Health Belief Model (demographic, psychosocial, and structural variables) for further analysis in this study.
<ul style="list-style-type: none"> <li>• 18 – 30 years</li> <li>• 30 – 40 years</li> <li>• 40 – 50 years</li> <li>• 51 – 60 years</li> </ul>	Younger people
<ul style="list-style-type: none"> <li>• Above 60 years</li> </ul>	Older people
<ul style="list-style-type: none"> <li>• Male</li> </ul>	Male
<ul style="list-style-type: none"> <li>• Female</li> </ul>	Female
<ul style="list-style-type: none"> <li>• transgender</li> </ul>	Transgender
<ul style="list-style-type: none"> <li>• Rural</li> </ul>	Rural

<ul style="list-style-type: none"> <li>• Urban</li> </ul>	Urban
<ul style="list-style-type: none"> <li>• No education</li> <li>• Primary education</li> <li>• Secondary education</li> </ul>	Low education
<ul style="list-style-type: none"> <li>• Professional training</li> <li>• University level</li> <li>• Postgraduate level</li> </ul>	High education
<ul style="list-style-type: none"> <li>• Smoker</li> </ul>	Smoker
<ul style="list-style-type: none"> <li>• Non – smoker</li> </ul>	Non – smoker
<ul style="list-style-type: none"> <li>• Not married</li> <li>• Single</li> </ul>	Single
<ul style="list-style-type: none"> <li>• Married</li> <li>• Living with spouse</li> </ul>	Married
<ul style="list-style-type: none"> <li>• Lower income</li> </ul>	Lower income earner
<ul style="list-style-type: none"> <li>• Higher income</li> </ul>	Higher income earner
<ul style="list-style-type: none"> <li>• Medical students</li> <li>• Nurses</li> <li>• Midwife</li> <li>• Laboratory technicians</li> <li>• Medical doctors</li> <li>• Community health workers</li> </ul>	Healthcare worker
<ul style="list-style-type: none"> <li>• No other vaccines</li> <li>• No Influenza vaccine</li> </ul>	No influenza/Other vaccines
<ul style="list-style-type: none"> <li>• Christians</li> </ul>	Christians
<ul style="list-style-type: none"> <li>• Muslims</li> </ul>	Muslims
<ul style="list-style-type: none"> <li>• Black</li> </ul>	Black
<ul style="list-style-type: none"> <li>• White</li> </ul>	White
<ul style="list-style-type: none"> <li>• Chronic diseases</li> <li>• Poor health</li> <li>• Comorbidities</li> </ul>	Comorbidities
<ul style="list-style-type: none"> <li>• Pregnancy</li> </ul>	Pregnancy
<ul style="list-style-type: none"> <li>• Breastfeeding</li> </ul>	Breastfeeding
<ul style="list-style-type: none"> <li>• adverse effect</li> <li>• side-effects</li> <li>• unsafe</li> <li>• safety</li> </ul>	Safety
<ul style="list-style-type: none"> <li>• Vaccines do not work</li> <li>• I will not get infected</li> <li>• Not concerned</li> <li>• COVID-19 is not dangerous</li> <li>• COVID-19 is Whiteman's disease</li> <li>• COVID-19 does not exist</li> <li>• Good health</li> <li>• Getting infected is better protection</li> <li>• Complacency</li> </ul>	Complacency
<ul style="list-style-type: none"> <li>• traditional herbs/alternative med</li> </ul>	traditional herbs/alternative med
<ul style="list-style-type: none"> <li>• ineffective</li> </ul>	Ineffectiveness

<ul style="list-style-type: none"> <li>• non-efficacious</li> </ul>	
<ul style="list-style-type: none"> <li>• Prior infection</li> </ul>	Prior infection
<ul style="list-style-type: none"> <li>• mistrust vaccine</li> <li>• conspiracy</li> <li>• misinformation/social media</li> <li>• mistrust health system</li> <li>• mistrust manufacturer</li> <li>• mistrust scientist</li> </ul>	Mistrust vaccine
<ul style="list-style-type: none"> <li>• misinformation</li> <li>• lack of information</li> <li>• social media</li> <li>• anti-vaxxers</li> </ul>	Lack of information
<ul style="list-style-type: none"> <li>• other vaccines</li> </ul>	Other vaccines
<ul style="list-style-type: none"> <li>• Mistrust ruling party</li> <li>• Mistrust gov't</li> <li>• Mistrust opposition party</li> </ul>	Political mistrust