

**Table 1 Studies on the vaccine hesitancy among the public in the GCC Countries up to March 2021**

Year of study (reference)	Country	Study design	Vaccine	Study setting/ population	Data collection tool	Main results
2015–16 winter season (21)	Saudi Arabia	Cross-sectional	Influenza	300 participants King Abdulaziz Medical City, a tertiary care hospital in Riyadh, Saudi Arabia	Survey on influenza vaccine hesitancy	17% were vaccine hesitant The most reported reason for vaccine refusal was: “It doesn’t have any positive effect or benefit” There was no significant relationship between education level and receiving influenza vaccination. The most common sources of information about the vaccine were awareness campaigns and medical staff (36% for both)
July 2017 & October 2018 (11)	Saudi Arabia	Cross-sectional	Childhood vaccination	500 parents Outpatient clinics at King Khalid University Hospital, Riyadh, Saudi Arabia	Strategic advisory group of experts on immunization vaccine hesitancy survey	20% of parents were hesitant to get their child vaccinated Parents with higher education levels were more vaccine hesitant ( $P < 0.001$ ) Negative beliefs toward vaccination (safety and effectiveness) were associated with increase hesitancy and incomplete vaccination status of children
2020 (13)	United Arab Emirates	Cross-sectional	Childhood vaccination	300 parents Ambulatory health-care services in Al-Ain city, United Arab Emirates	Survey on attitudes about childhood vaccines to determine prevalence of vaccine hesitancy among parents in the United Arab Emirates	Only 12% of parents (95% CI: 8.5–16.2) were found to be vaccine-hesitant Parents’ greatest concerns were mainly side-effects (35%), safety of vaccines (45%) and their child getting too many injections (28%)
October 2019–March 2020 (12)	Saudi Arabia	Cross-sectional	Childhood vaccination	288 parents Outpatient clinics of King Khalid University Hospital, Riyadh, Saudi Arabia.	3-part questionnaire: sociodemographic and economic questions, Parent Attitudes about Childhood Vaccines	Overall, 89% of parents scored $< 50$ , hence deemed not to be hesitant about childhood vaccination There was no significant association between high education level or social media exposure and vaccine hesitancy
2020 (14)	Saudi Arabia	Cross-sectional	COVID-19	992 participants recruited across Saudi Arabia through social media platform	Online survey to assess the prevalence of the acceptance of COVID-19 vaccine and their determinants among people in Saudi Arabia	64% showed interest in accepting the COVID-19 vaccine if it was available Willingness to accept a future COVID-19 vaccine was relatively high among older age groups, participants with postgraduate degree or higher (68.8%), non-Saudi (69.1%), employed in government sector (68.9%)
2020 (15)	Qatar	Cross-sectional	COVID-19	7821 participants Migrant-majority population in Qatar	National cross-sectional survey to evaluate the degree of vaccine hesitancy and its sociodemographic and attitudinal determinants	20.2% of the respondents stated they would not take the vaccine and 19.8% reported being unsure about taking the prospective COVID-19 vaccine Concerns around the safety of COVID-19 vaccine and its longer-term side-effects were the main participants concerns Personal research around COVID-19 and vaccine were by far the most preferred methods that would increase confidence in accepting the vaccine across all demographic groups

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2020 (16)	Kuwait, Saudi Arabia (multi-Arab countries)	Cross-sectional	COVID-19	3414 participants General public in Jordan, Kuwait and Saudi Arabia recruited via social media platforms	Online survey to assess the association between COVID-19 vaccine acceptance and conspiracy beliefs using the Vaccine Conspiracy Belief Scale	The acceptance rates for COVID-19 and influenza vaccines were 29.4% and 30.9%, respectively Participants with higher education levels and those with history of chronic disease had higher rates of COVID-19 vaccine acceptance Belief that COVID-19 vaccines are related to infertility was found in 23.4% of participants Higher Vaccine Conspiracy Belief Scale scores were found among participants with lower education levels and respondents relying on social media platforms as their main source of information
2020 (18)	Saudi Arabia	Cross-sectional	HPV	966 participants Female students enrolled at the University of Hail, northern Saudi Arabia	Self-administered questionnaire	Lack of knowledge about HPV vaccine among 84.8% of participant Knowledge score was associated with the duration of education and students specialization Vaccine uptake barriers included concerns about its side-effects and a lack of information
2013–2014 (17)	Saudi Arabia	Cross-sectional	HPV	1400 participants Female students in Health Colleges at Princess Nora Bint Abdul Rahman University, Riyadh	Self-administrated questionnaire	Only 11% of the participants were aware about HPV vaccines, and 96% had poor knowledge, which was associated with their years of education ( $P < 0.01$ ) and specialization ( $P < 0.001$ ) Perceived barriers to the vaccine were fear of injections and vaccine side-effects.