

Table S1. Characteristic of studies included for vaccine effectiveness

First author	Published time	Study design	Location	Study group	Vaccine type	Vaccination status	Variants of SARS-CoV-2	Vaccinated people with SARS-CoV-2 infection (n/N)	Unvaccinated people with SARS-CoV-2 infection (n/N)	Vaccine effectiveness (%)	Vaccinated people with symptomatic COVID-19 (n/N)	Unvaccinated people with symptomatic COVID-19 (n/N)	Vaccine effectiveness (%)	Vaccinated people with COVID-19 hospital admissions (n/N)	Unvaccinated people with COVID-19 hospital admissions (n/N)	Vaccine effectiveness (%)	Vaccinated people with COVID-19 ICU admissions (n/N)	Unvaccinated people with COVID-19 ICU admissions (n/N)	Vaccine effectiveness (%)	Vaccinated people with COVID-19-related death (n/N)	Unvaccinated people with COVID-19-related death (n/N)	Vaccine effectiveness (%)	risk of bias	
Laith J. Abu-Raddad	2021.7	case control	Qatar	general population	BNT162b2	1	Alpha (B.1.1.7)	892/2133	18075/35801	30 (23, 36)	30/91	468/905	54 (26, 72)	..	..	..	..	..	..	..	..	..	low	
							Beta (B.1.351)	1329/2909	20177/40103	17 (10, 23)	45/80	348/706	0 (0, 19)	..	..	..	..	..	..	..	..			
							any	..	..	139/359	1966/3851	39 (24, 52)	..	..	..	..	..	..	..	..				
							Alpha (B.1.1.7)	50/515	16354/32293	90 (86, 92)	0/20	401/782	100 (82, 100)	..	..	..	..	..	..	..				
Yoel Angel*	2021.5	cohort study	Israel	Health Care Workers	BNT162b2	1(7-28) 2(≥7) 2(≥21)	Beta (B.1.351)	179/877	19396/38273	75 (71, 79)	0/14	300/586	97 (92, 100)	..	..	..	..	..	..	..	..	..	low	
							any	..	..	3/112	1692/3278	97 (92, 100)	..	..	..	..	..	..	..	..				
							Alpha (B.1.1.7)	37/117389	8/15091	36 (-51, 69)	31/17420	37/15128	89 (83, 94)	..	..	..	..	..	..	..				
							Beta (B.1.351)	19/168571	17/25359	86 (69, 93)	8/168571	38/25359	97 (94, 99)	..	..	..	..	..	..	..				
Tariq Azamgarhi	2021.6	cohort study	UK	Health Care Workers	BNT162b2	1(<14) 1(≥14) 2(0-6) 2(≥7)	Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..	..	..	low	
							any	..	..	3/112	1692/3278	97 (92, 100)	..	..	..	..	..	..	..	..				
							Beta (B.1.351)	19/168571	17/25359	86 (69, 93)	8/168571	38/25359	97 (94, 99)	..	..	..	..	..	..	..				
							Alpha (B.1.1.7)	37/117389	8/15091	36 (-51, 69)	31/17420	37/15128	89 (83, 94)	..	..	..	..	..	..	..				
Zacay, G.*	2021.7	cohort study	Israel	general	BNT162b2	1(≥14) 2(0-6) 2(≥7)	Alpha (B.1.1.7)	21/100000	53/100000	61 (49, 71)	..	..	..	..	..	..	..	..	..	..	..	..	low	
							Beta (B.1.351)	9/100000	53/100000	82 (71, 89)	..	..	..	..	..	..	..	..	..	..	..			
							any	6/100000	53/100000	89 (82, 94)	..	..	..	..	..	..	..	..	..	..	..			
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Williams, C.	2021.7	cohort study	Canada	staff in long term care	BNT162b2	2(≥14)	Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..	..	..	moderate	
				elder residents in long term care	mRNA-1273	2(≥14)	Gamma (P.1)	19/48	10/12	53 (27, 70)	11/48	8/12	66 (34, 82)	..	..	..	6/47	7/12	79 (48, 91)	..	..	..	..	
				any	..	..	3/112	1692/3278	97 (92, 100)	..	..	..	..	..	..	..	..	..						
				Beta (B.1.351)	19/168571	17/25359	86 (69, 93)	8/168571	38/25359	97 (94, 99)	..	..	..	..	..	..	..							
Francesco Paolo Bianchi	2021.5	cohort study	Italy	Health Care Workers	BNT162b2	1(14-20) 1(21-27) 2(≥7)	Alpha (B.1.1.7)	..	..	62 (19, 82)	..	..	..	..	..	..	..	..	..	..	..	..	moderate	
							Beta (B.1.351)	..	..	88 (52, 97)	..	..	..	..	..	..	..	..	..	..	..			
							any	..	..	96 (82, 99)	..	..	..	..	..	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Amadea Britton*	2021.3	cohort study	USA	nursing home residents	BNT162b2	1(≥14)	Alpha (B.1.1.7)	25/4172	39/3612	63 (33, 79)	..	..	..	..	..	..	..	..	..	..	..	..	moderate	
							Beta (B.1.351)	..	..	88 (52, 97)	..	..	..	..	..	..	..	..	..	..	..			
							any	..	..	96 (82, 99)	..	..	..	..	..	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Martinez-Baz, I.	2021.5	cohort study	Spain	adults who had been close contacts of laboratory-confirmed COVID-19 cases from January to April 2021.	Mix	1(≥14) 2(≥14) 1(≥14) 2(≥14) 2(≥14) 1(≥14)	Alpha (B.1.1.7)	198/869	6980/19580	..	135/869	5306/19580	42 (31, 52)	10/869	548/19580	72 (47, 85)	..	..	..	..	..	..	low	
							Beta (B.1.351)	..	..	88 (52, 97)	..	..	..	..	..	..	..	..	..	..				
							any	..	..	96 (82, 99)	..	..	..	..	..	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Swift, M. D.	2021.4	cohort study	USA	healthcare personnel	BNT162b2	1(>14) and 2(0-14) 2(>14) 2(>14) and 2(0-14) 2(>14) and 2(0-14) 2(>14)	Alpha (B.1.1.7)	..	..	78 (77, 82)	..	..	..	..	..	..	..	..	..	..	..	..	low	
							Beta (B.1.351)	..	..	97 (95, 98)	..	..	..	..	..	..	..	..	..	..				
							any	..	..	99 (90, 100)	..	..	..	..	..	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Mazagatos, C.	2021.6	case-control	Spain	elderly long-term care facility residents	mRNA-1273+BNT162b2	1(>14) and 2(0-14) 2(>14) 1(≥14)	Alpha (B.1.1.7)	98/3204	997/23931	..	66/3204	876/23931	..	..	..	..	..	..	..	..	..	..	56 (27, 73)	low
							Beta (B.1.351)	..	..	97 (95, 98)	..	..	..	..	..	..	..	..	..	..				
							any	..	..	99 (90, 100)	..	..	..	..	..	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Alyson M. Cavanaugh	2021.4	cross-sectional	USA	nursing home residents	BNT162b2	2(0-6 for Comintaty or 0-14 for Moderna) 2(≥7 for Comintaty or ≥14 for Moderna) 2(0-13) 2(≥14)	Alpha (B.1.1.7)	62/512	6980/19580	66 (57, 74)	26/512	5306/19580	82 (74, 88)	1/512	548/19580	95 (62, 99)	..	..	..	..	..	..	..	moderate
							Beta (B.1.351)	99/524	6980/19580	..	67/524	5306/19580	..	1/524	548/19580	..	..	..	..	..				
							any	61/492	6980/19580	..	25/491	5306/19580	..	1/491	548/19580	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Tenforde, M. W.	2021.5	case-control	USA	Hospitalized Adults Aged ≥65 Years	mRNA-1273+BNT162b2	1(0-13) 1(≥14) and 2(0-13) 2(≥14)	Alpha (B.1.1.7)	22/49	146/287	3 (-94, 51)	..	..	..	..	..	..	..	..	..	..	..	..	..	moderate
							Beta (B.1.351)	..	..	88 (52, 97)	..	..	..	..	..	..	..	..	..	..				
							any	..	..	96 (82, 99)	..	..	..	..	..	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				
Hiam Chemaitelly	2021.7	case control	Qatar	general population	mRNA-1273	1(<7)	Alpha (B.1.1.7)	166/336	23661/47318	2 (0, 22)	..	..	..	..	..	..	..	..	..	..	..	..	low	
							Beta (B.1.351)	535/1093	47359/94695	4 (0, 15)	..	..	..	..	..	..	..	..	..	..				
							any	..	..	96 (82, 99)	..	..	..	..	..	..	..	..	..	..				
							Gamma (P.1)	4/43	11/40	62 (2, 88)	4/43	5/40	26 (-158, 79)	..	..	..	..	..	..	..				

[illegible]

