Multimedia Appendix 4. GRADE Scores from the GRADE handbook for grading quality of evidence and strength of recommendations.

Studies	GRADE Score*	Sampling	Bias/limitations discussed	Study design/method
Alibrahim & Awad[1]	1	Non-random sampling	Yes	Observational/survey on vaccine hesitancy
Alliheibi[2]	1	Sample described	No	Observational/content analysis of tweets regarding attitudes to vaccination
Allington et al[3]	2	Sample representative	Yes	Observational/survey on predictors of vaccine hesitancy
Aloweidi et al[4]	1-2	Sampling online/self-selected	Yes	Observational/survey on vaccine hesitancy
Baines et al[5]	2	Random sample	Yes	Observational/text analysis of Parler content
Basch et al[6]	2	Sampling based on numbers	Yes	Observational/analysis of popular YouTube videos on vaccines
Berry et al[7]	1	Non-random sample	No	Observational/group interviews on vaccine concerns
Bhagianadh & Arora[8]	2	Sample well described	Yes	Observational/survey on information sources
Boucher et al[9]	2	Sample described	Yes	Observational/content analysis of tweets by machine learning
Brodiziak et al[10]	1-2	Sample non-random (?)	Briefly discussed	Observational/survey on opinions on vaccination
Chadwick et al[11]	2	Representative sample	Yes	Observational/survey 'media diets'
Chan et al[12]	2	Sampling acceptably described	Yes	Observational, content analysis of YouTube videos
Choudhary et al[13]	1	Non-random/online sampling	No	Observational/survey
Costantino et al[14]	1	Non-random (self-selected)	Briefly discussed	Observational/survey
Chriss et al[15]	1	Sample described	Yes	Observational/content analysis of tweets
Doyno et al[16]	1	Sample described No control group	No	Interventional study/description of a training program and videos used to train vaccinators
Ebrahimi et al[17]	1-2	Sample non-random/self-selected	Yes	Observational/survey on vaccine hesitancy
El-Far Cardo et al[18]	1-2	Sample non-random (online/self-selected)	Yes	Observational/survey
Guntuku et al[19]	1-2	Sample described	Yes, briefly	Observational/content analysis of tweets on vaccines
Hernández-García et al[20]	2	Sample described	Yes	Observational/content analysis of YouTube videos on vaccines
Herrera-Peco et al[21]	1-2	Sample described	Yes	Observational/content analysis of antivax tweets
Herrera-Peco et al[22]	1-2	Sample described	Yes	Observational/content analysis of tweets from institutions
Hughes et al[23]	1-2	Non-random/purposive sampling	Bias/limitations discussed	Observational/qualitative content analysis of antivax rhetoric on social media/film Sentiment/'code book' of rhetorics
Islam et al[24]	1	Unclear sampling	Bias poorly discussed. Poorly conducted	Google, social media/observational
Jennings et al[25]	2	Sample well defined	Yes	Survey/observational
Kanyike et al[26]	1	Non-random sample (self-selected)	Yes, briefly	Observational/survey
Karabela et al[27]	1	Sample non-random (self-recruited)	No	Observational/survey
Knights et al[28]	1-2	Non-random sampling	Yes	Observational study
Kwok et al[29]	2	Sample described	Yes	Observational study of tweets
Larrondo-Ureta[30]	1	Sample described	Bias/limitations poorly discussed	Observational Qualitative content analysis of tweets
Liu & Liu[31]	2	Sampling described well	Yes	Observational Qualitative content analysis of Twitter posts

Melton et al[32]	1-2	Unclear sampling	Yes	Observational/sentiment analysis of Reddit posts
Park et al[33]	2	Sampling clear	Yes	Observational/survey
Pascual-Ferra[34]	1	Unclear design	Yes	Observational/social media trends vs. 'adverse events'
Petravic et al[35]	1-2	Unclear sampling/online	Yes	Observational/survey
Rotolo et al[36]	2-3	Infografics created and spread on social media, reach evaluated	Yes	Intervention study, no randomization
Sallam et al[37]	1-2	Online/unclear sampling	Yes	Observational/survey
Sallam et al[38]	1-2	Online/unclear sampling	Yes	Observational/survey
Savolainen[39]	1	Unclear sampling	No	Observational study of Reddit posts
Sharevski & Gover[40]	3	Clear sampling but self selected (online)	Yes	Intervention study with randomization
Sobkowicz & Sobkowicz[41]	2	Clear sampling	Yes	Social media/observational
Thelwall et al[42]	1	Clear sampling	Bias poorly discussed	Twitter/observational
Wawrzuta et al[43]	1	Sampling unclear	No	Observational/content analysis of Facebook posts/comments
Zhang et al[44]	2	Sampling described	Yes	Observational/online survey of attitudes to vaccination
Zhang et al[45]	2	Sampling described	Yes	Observational/online survey of attitudes to vaccination

*GRADE Scores: 1=very low, 2=low, 3=moderate, 4=high

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