**Complete list of returns before considering healthcare providers and not retrievable**

Red is those articles that are excluded because they don’t mention healthcare providers.

Black are the included articles with unable to be retrieved in red

1. Acceptance of a COVID-19 Vaccine in Japan during the COVID-19 Pandemic —Web of Science 10
2. Acceptance of Booster COVID-19 Vaccine and Its Association with Components of Vaccination Readiness in the General Population: A Cross-Sectional Survey for Starting Booster Dose in Japan —Web of Science 55
3. Acceptance and Preference for COVID-19 Vaccine among Japanese Residents at Early Stage of the Epidemic in Japan —Web of Science 38
4. Aggressive behaviour of anti-vaxxers and their toxic replies in English and Japanese —ProQuest
5. Anti-SARS-CoV-2 vaccination strategy for pregnant women in Japan —Web of Science 49
6. Association between COVID-19 vaccine hesitancy and generalized trust, depression, generalized anxiety, and fear of COVID-19 —Web of Science 22

**Specific trust, such as trust in vaccines, the government, the health system, or professionals, has been sufficiently explored in the context of vaccine hesitancy in general [24, 25], and specifically for COVID-19 vaccines (trust in vaccines [6, 16, 26,27,28], trust in government [20, 22, 26, 29, 30], trust in healthcare system or practitioners [16, 31,32,33]).**

1. Association between willingness to receive the COVID-19 vaccine and sources of health information among Japanese workers: a cohort study —Web of Science 52

**The results of this study were consistent with those of other studies that found willingness to be vaccinated was higher in those that used TV as a source of health information [8]. Information can be obtained passively from TV, and is widely disseminated to the indifferent population regardless of whether they have vaccine hesitancy. During the period of the second survey, there was an increase in TV coverage regarding vaccines because vaccination of healthcare workers had just started. Therefore, it is possible that the group that mainly received health information from TV changed from not wanting to be vaccinated to wanting vaccination.**

1. Association of Vaccine Confidence and Hesitancy in Three Phases of COVID-19 Vaccine Approval and Introduction in Japan —Web of Science 8

**Nonetheless, the percentage of hesitancy was significantly lower among healthcare providers in the September than in the January. In addition, unlike the overall results, there was no significant difference in hesitancy among medical personnel in the items “serious adverse reactions”, “troublesome”, and “unnecessary” in this survey (Supplementary Table S2). The vaccination status of health care providers is said to affect the public [26,27]. The role of healthcare providers in vaccine deployment has also been reported to be beneficial [13]. In our previous study, physician recommendation was cited as a factor influencing vaccination in the general population [9]. Similarly, trust in health care providers has been reported to be a strong predictor of COVID-19 vaccine acceptance [28], and vaccine hesitancy has been reported to increase as a result of mistrust in health care [29]. In Japan, approximately 80% of the population has been vaccinated by December 2021, despite it being non-mandatory and its late start [30]. We believe that this may be because the number of vaccine hesitancy in the health care provider was small as of the September.**

1. Attitudes of Medical Students toward COVID-19 Vaccination: Who Is Willing to Receive a Third Dose of the Vaccine? —Web of Science 46

**This study was conducted to investigate the attitudes of medical students toward COVID-19 vaccination. In our survey, almost all the respondents (98.4%; 488/496) stated that they approved of vaccinations in principle (Q1), and most of them (92.8%; 460/496) considered COVID-19 vaccination to be necessary for them to travel or go out to eat and drink as in pre-pandemic life (Q12). Among the respondents, 89.1% (442/496) had received the second dose of the vaccine, and 90.7% (450/496) indicated that they would hypothetically receive the COVID-19 vaccine in the future. Furthermore, 84.5% (419/496) of all the participants were willing to receive a third dose of the vaccine. Although the majority of the students (75.6%; 375/496) stated that the vaccines provide a high degree of protection against COVID-19 (Q9), 67.3% (334/496) were concerned about the sustainability of immunity by the vaccine (Q14). In addition, a nonnegligible number of the students (46.0%; 228/496) stated that the vaccine was developed too rapidly (Q10).**

1. Attitudes toward COVID-19 vaccination during the state of emergency in Osaka, Japan—Web of Science 53
2. Changes in Vaccine Hesitancy in Japan across Five Months during the COVID-19 Pandemic and Its Related Factors —Web of Science 15
3. Charactrising reasons for reversals of COVID-19 vaccination hesitancy among Japanese people: One-year follow-up survey —Web of Science 29
4. COVID-19 mRNA vaccination status and concerns among pregnant women in Japan: a multicenter questionnaire survey —Web of Science 54
5. [COVID-19 vaccination coverage by company size and the effects of socioeconomic factors and workplace vaccination in Japan: a cohort study](https://covid-19-cochrane-org.myaccess.library.utoronto.ca/studies/crs-20619321) —Cochrane

**In Japan, two types of mRNA vaccines and one type of virus-vector vaccine were approved for use, and two of these mRNA vaccines were used. Of these, the vaccine from Pfizer Inc. was used for vaccination of healthcare workers and for vaccination of the elderly and general population by local governments using local healthcare resources [**[**12**](https://www-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/pmc/articles/PMC9283908/#r12)**]. However, with the hit of the second wave of infection spread period in mid-June [2021], the vaccine manufactured by Moderna Inc. was used to speed up the vaccination process, which included large-scale mass vaccination by medical personnel of the Self-Defense Forces [**[**18**](https://www-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/pmc/articles/PMC9283908/#r18)**], and workplace vaccination by medical personnel belonging to companies such as occupational physicians [**[**13**](https://www-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/pmc/articles/PMC9283908/#r13)**]**

1. COVID-19 Vaccine Hesitancy among the Younger General in Japan —Web of Science 5

**Japan launched its vaccination program in February 2021 and successfully vaccinated priority groups such as older people and healthcare workers.**

1. COVID-19 Vaccine Hesitancy and Its Associated Factors in Japan —Web of Science 2
2. COVID-19 Vaccine hesitance and vaccine passports: a cross-sectional conjoint experiment in Japan —Web of Science 16

**Socioeconomic factors are also associated with vaccine hesitancy. Healthcare workers, front-line essential workers and those performing paid work were likely to be non-vaccine-hesitant compared with non-employed individuals: the former two groups were more likely to accept vaccination, showing ORs of 0.23 (95% CI 0.16 to 0.33) and 0.71 (95% CI 0.59 to 0.86), respectively. Furthermore, higher education and income were associated with a lower likelihood of being vaccine hesitant.**

1. COVID-19 Vaccine Intention and Knowledge, Literacy, and Health Beliefs among Japanese University Students—Web of Science 47
2. COVID-19 vaccination intention and vaccine characteristics influencing vaccination acceptance: a global survey of 17 countries —Web of Science 39

**On the whole, the prevalence of COVID-19 vaccine hesitancy remains disproportionately high in individuals who have an education level of secondary level and below, which is a consistent finding across regions and many individual countries. Higher level of COVID-19 vaccine hesitancy in people with lower education levels found in this study can be explained by pre-existing vaccine hesitancy in these groups, namely due to lower knowledge about vaccines and health literacy; in addition, lower trust in healthcare professionals, the health system and the government [29, 30].**

1. COVID-19 vaccine literacy and vaccine hesitancy among pregnant women and mothers of young children in Japan—Unable to be retrieved —Web of Science 4
2. Cross-country evidence on the role of national governance in boosting COVID-19 vaccination —Web of Science 56
3. Determinants of COVID-19 vaccine preference: A survey study in Japan —Web of Science 32
4. Differences in COVID-19 Vaccine Acceptance, Hesitancy, and Confidence between Healthcare Workers and the General Population —Web of Science 6

**In addition, several studies have evaluated vaccination intention and hesitancy among healthcare workers [7,8,9]. Vaccine acceptance was higher among medical personnel attending patients with COVID-19 [7]. Furthermore, vaccine acceptance was higher among male healthcare workers, older healthcare workers, and doctors [8].**

**The COVID-19 vaccine hesitancy rates were as follows: general population, 17.5%; doctors, 11.7%; nurses, 18.5%; pharmacists, 17.1%; physical/occupational therapists, 13.8%; and medical clerks, 21.5%.**

1. Does the Integration of Migrants in the Host Society Raise COVID-19 Vaccine Acceptance? Evidence From a Nationwide Survey in Japan —Web of Science 12
2. Effect of a mobile app chapbot and interactive small-group webinar on COVID-19 vaccine intention and confidence in Japan: a randomised controlled trial —Web of Science 41

**Thanks to the government’s recommendations, about 80% of Japanese people had received at least one dose of a COVID-19 vaccine when this study was conducted.15 Third dose of COVID-19 vaccines was only available to limited healthcare workers during the present study.**

1. Evidence-based polices in public health to address COVID-19 vaccine hesitancy—Unable to be retrieved —Web of Science 30
2. Evolution of Public Opinion on COVID-19 Vaccination in Japan: Large-Scale Twitter Data Analysis —ProQuest
3. [Factors affecting guardians' decision-making regarding the SARS-CoV-2 vaccine](https://www-scopus-com.myaccess.library.utoronto.ca/record/display.uri?eid=2-s2.0-85177650221&origin=resultslist&sort=plf-f&src=s&sid=cbdb607768a79909ac1d37553490261d&sot=b&sdt=cl&cluster=scosubtype%2C%22ar%22%2Ct%2C%22re%22%2Ct%2Bscolang%2C%22English%22%2Ct%2Bscoexactkeywords%2C%22Human%22%2Ct%2C%22Japan%22%2Ct%2C%22Vaccine+Hesitancy%22%2Ct%2C%22COVID-19%22%2Ct%2Bscoaffilctry%2C%22Japan%22%2Ct%2Bscosrctype%2C%22j%22%2Ct&s=%28TITLE-ABS-KEY%28covid+19%29+AND+TITLE-ABS-KEY%28Japan%29+AND+TITLE-ABS-KEY%28vaccine+hesitancy%29%29&sl=87&sessionSearchId=cbdb607768a79909ac1d37553490261d&relpos=22) —Scopus

**healthcare providers remain the most trusted advisors and influencers of vaccination decisions**

1. Factors affecting motivation for receiving a booster dose of the COVID-19 vaccine among Japanese university students and staff: a cross-sectional questionnaire survey —ProQuest
2. Factors associated with COVID-19 booster vaccine hesitancy: a nationwide, cross-sectional survey in Japan —Web of Science 20

**Japan has one of the highest public acceptance rates for the COVID-19 vaccine in the world; 80.3% of the Japanese people completed their primary series of vaccinations, whereas 68.3% received a booster dose (≥3 doses).13 However, there is concern among healthcare professionals that the current, lower acceptance rate for booster vaccinations, predominantly among the younger population,14 presages a more widespread avoidance of vaccination as the pandemic shifts to the endemic.**

1. Factors Associated with COVID-19 Vaccine Booster Hesitancy: A Retrospective Cohort Study, Fukushima Vaccination Community Survey —Web of Science 35
2. Factors Associated with COVID-19 Vaccination Hesitancy and Most Frequently Vaccinated Status in a Japanese Population-Based Sample —Web of Science 33
3. Factors associated with reversals of COVID-19 vaccination willingness: Results from two longitudinal, national surveys in Japan 2021-2022. —Web of Science 19

**Few studies examined reversals in COVID-19 vaccine intentions, and of those, the large majority were limited to specific subpopulations (e.g., healthcare workers.**

1. Factors of parental COVID-19 vaccine hesitancy: A cross sectional study in Japan —Web of Science 26
2. Hesitancy towards the Third Dose of COVID-19 Vaccine among the Younger Generation in Japan —Web of Science 11
3. High rates of vaccine hesitancy among pregnant women during the coronavirus disease 2019 (COVID-19) pandemic in Japan —Web of Science 9

**A previous study demonstrated that healthcare providers’ vaccine recommendations in the vaccination decision-making process are critical, and healthcare providers are the most influential people in vaccination decision-making.Citation32 The results of this study showed that only two-thirds of participants trusted their healthcare providers, indicating a low level of confidence in this setting in Japan.**

1. How was the coronavirus vaccine accepted on Twitter? A computational analysis using big data in Japan—Unable to be retrieved —Web of Science 31
2. Identification of optimum combinations of media channels for approaching COVID-19 vaccine unsure and unwilling groups in Japan —Web of Science 43

**It also revealed that the perceived benefits of the vaccination, perceived trust in scientists and authorities, and the perceived belief in the necessity of vaccination among healthcare workers were significantly associated with the unsurety and unwillingness**

1. Imprecision in adverse event reports following immunization against HPV in Japan and COVID-19 in the USA, UK, and Japan—and the effects of vaccine hesitancy and government policy —Web of Science 44
2. Individual-level social capital and COVID-19 vaccine hesitancy in Japan: a cross-sectional study —Web of Science 18

**Additionally, at the time of this survey, administration of the COVID-19 vaccine booster for healthcare workers and high-risk older individuals in Japan had begun, although it was not yet available to the general public.Citation18,Citation39,Citation40**

1. Influence of Tweets Indicating False Rumors on COVID-19 Vaccination: Case Study —Web of Science 59
2. Intentions Regarding COVID-19 Vaccination in Females Aged 15-49 Years —Web of Science 50
3. Intentions to be Vaccinated Against COVID-19: The Role of Prosociality and Conspiracy Beliefs across 20 Countries —Web of Science 61
4. In Whose Best Interest? Parental Hesitancy toward the COVID-19 Vaccine for Children in Japan: a Literature Survey Study—Unable to be retrieved —Web of Science 45
5. Longitudinal change in depressive symptoms among healthcare professionals with and without COVID-19 vaccine hesitancy from October 2020 to June 2021 in Japan —Web of Science 34

**This study aimed to compare the longitudinal change in depressive symptoms among healthcare professionals in Japan who are willing to receive novel coronavirus disease (COVID-19) vaccination and those who are unwilling to receive COVID-19 vaccination. The baseline survey was conducted in October 2020 (Survey time 1: T1); respondents in T1 were invited to participate in May 2021 (Survey time 2: T2). Depressive symptoms were assessed by the Patient Health Questionnaire-9 (PHQ-9). Group comparisons of the estimated mean of PHQ-9 score at T1 and T2 were estimated by the analysis of covariance. In T1, 597 participants (response rate: 4.4%) completed all questions. In T2, 211 participants (follow up rate: 35.3%) completed all questions. The group and time interaction effect was significant (F(1, 207)=3.9, p=0.049); depressive symptoms were worse among healthcare professionals who were unwilling to receive vaccination than among those who were willing to receive vaccination. This study showed that depressive symptoms were worse among healthcare professionals who were unwilling to receive COVID-19 vaccination than those who are willing to receive COVID-19 vaccination. This suggests that it is important to take care of healthcare professionals who are unwilling to receive vaccination to prevent mental health deterioration.**

1. Measuring concerns about the COVID-19 vaccine among Japanese internet users through search queries —ProQuest
2. Occupational disparities in COVID-19 vaccine hesitancy in Japan —Web of Science 1

**Baseline: Healthcare workers 64 (1.8) hesitant 3524 (98.2) willing**

**By contrast, our survey was conducted during a period when the vaccine was recommended and available to all adults (and 80.7% nationally had already received their first shot).**

1. [Parents’ hesitation about getting their children vaccinated against COVID-19 in Japan](https://www-scopus-com.myaccess.library.utoronto.ca/record/display.uri?eid=2-s2.0-85116656978&origin=resultslist&sort=plf-f&src=s&sid=cbdb607768a79909ac1d37553490261d&sot=b&sdt=cl&cluster=scosubtype%2C%22ar%22%2Ct%2C%22re%22%2Ct%2Bscolang%2C%22English%22%2Ct%2Bscoexactkeywords%2C%22Human%22%2Ct%2C%22Japan%22%2Ct%2C%22Vaccine+Hesitancy%22%2Ct%2C%22COVID-19%22%2Ct%2Bscoaffilctry%2C%22Japan%22%2Ct%2Bscosrctype%2C%22j%22%2Ct&s=%28TITLE-ABS-KEY%28covid+19%29+AND+TITLE-ABS-KEY%28Japan%29+AND+TITLE-ABS-KEY%28vaccine+hesitancy%29%29&sl=87&sessionSearchId=cbdb607768a79909ac1d37553490261d&relpos=66) —Web of Science 36
2. Politics of COVID-19 vaccination in Japan: how governing incumbents’ representation affected regional rollout variation —ProQuest

**The vaccination priority was given at first to healthcare workers, and then to those aged 65 or older. Mass vaccination rollouts, however, lagged way behind. As of May 21, for example, the proportion of the population that had received at least one shot was reported to be about 4%, the lowest amongst developed countries at the time [**[**9**](https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15376-6#ref-CR9)**]. This initial delay was due to a number of factors, including holdups in vaccine importation and Japanese bureaucrats’ adherence to the routine regulations, especially their insistence on domestic trials before approving imported medicines. The law that technically permitted only doctors to administer the vaccine jab constituted a hurdle as well; it was not until April and May that this rule was sequentially relaxed to allow others in medical professions, such as dentists and clinical laboratory technicians, to participate in COVID-19 vaccination procedure [**[**10**](https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15376-6#ref-CR10)**].**

1. Potential motivators affecting parental intention in COVID-19 vaccination for children aged 6 months to 4 years: Implications for target vaccine interventions in Japan —Web of Science 21

**These results suggest that when considering vaccination for children, Japanese parents emphasize the evidence of the vaccine’s effectiveness and safety more than the authority’s recommendations. This result also showed that the impact of injunctive norms on vaccine intention change was limited. Some studies exist on the relationship between perceived injunctive norms and COVID-19 vaccine hesitancy for adults;Citation29,Citation30 however, results are inconsistent and not for parents; therefore, this warrants further research.**

**As implications for policymakers and healthcare providers, given the high hesitancy rate, efficient and effective interventions need to be urgently considered.**

1. [Prevalence of COVID-19 vaccination and approval rating of the social implementation of its certification: the Japan COVID-19 and Society Internet Survey (JACSIS) in September and October 2021](https://covid-19-cochrane-org.myaccess.library.utoronto.ca/studies/crs-22306280)—Unable to be retrieved —Cochrane
2. Public Attitudes toward COVID-19 Vaccinations before Dawn in Japan: Ethics and Future Perspectives —Web of Science 42
3. Psychological factors underpinning vaccine willingness in Israel, Japan, and Hungary —Web of Science 58
4. Reasons for being unsure of unwilling regarding intention to take COVID-19 vaccine among Japanese people: A large cross-sectional national survey —Web of Science 48

**After adjusting for covariates, the perceived risks of COVID-19, perceived risk of a COVID-19 vaccine, perceived benefits of a COVID-19 vaccine, trust in scientists and public authorities, and the belief that healthcare workers should be vaccinated were significantly associated with vaccination intention.**

1. Reducing COVID-19 Vaccine Hesitancy From a Decisional Conflict Model: A Cross-Sectional Study —Web of Science 14
2. Sociodemographic factors affecting not receiving COVID-19 vaccine in Japan among people who originally intended to vaccinate: a prospective cohort study —Web of Science 40
3. Socio-economic and behavioral characteristics associated with COVID-19 vaccine hesitancy under a declared state of emergency in Japan —Web of Science 24

**Descriptive statistics and t-test results are presented in Table 1. Being female, unmarried, childless, a non-healthcare worker, not receiving treatment for physical illness currently or in the past, and not receiving treatment for a psychological illness in the past were significantly associated with lower intentions to vaccinate (p ​< ​0.05). The largest effect sizes (d) were observed for current or past treatment for physical illness (ds ​= ​0.30), having children (d ​= ​0.28), being a healthcare worker (d ​= ​0.28), and being married (d ​= ​0.26).**

1. The Impact of Priority Settings at the Start of COVID-19 Mass Vaccination on Subsequent Vaccine Uptake in Japan: One-Year Prospective Cohort Study —ProQuest
2. The influence of information sources on intention changes to receive COVID-19 vaccination: A prospective cohort study in Japan—Web of Science 51
3. The Prevalence of COVID-19 Vaccination and Vaccine Hesitancy in Pregnant Women: An Internet Cross-Sectional Study in Japan —Web of Science 3
4. The Relationship between Daily Behavior Changes and Vaccine Attitudes at the Early Stage of the COVID-19 Pandemic among Japanese People from Different Demographics: A Retrospective and Exploratory Examination Using a Free-Response Survey  —ProQuest
5. The relationship between having a usual source of primary care and COVID-19 parental vaccine hesitancy: A nationwide survey among Japanese mothers. —Web of Science 23

**Several studies examined factors associated with vaccine hesitancy and have shown that healthcare providers are the most important promoters of vaccine acceptance.10, 11 These results have been reproduced internationally. A study from Japan indicated that among the older population, having a primary care physician was associated with receiving pneumococcal vaccination.12 Likewise, as much as 47% of initially hesitant parents subsequently decided to get vaccinated after strong recommendations by their healthcare providers.13**

1. The Relationship between Sources of COVID-19 Vaccine Information and Willingness to Be Vaccinated: An Internet-Based Cross-Sectional Study in Japan —Web of Science 27
2. [The utility of online chatbot on social media platform for COVID vaccine hesitancy in older adults](https://covid-19-cochrane-org.myaccess.library.utoronto.ca/studies/crs-21191288)— Unable to be retrieved —Cochrane
3. Traditional and Social Media Usage Associated with COVID-19 Vaccine Uptake in Sapporo, Japan —Web of Science 25
4. Trends in COVID-19 vaccination intent from pre- to post-COVID-19 vaccine distribution and their associations with the 5C psychological antecedents of vaccination by sex and age in Japan —Web of Science 37
5. Trust in governments, public health institutions, and other information sources as determinants of COVID-19 vaccine uptake behavior in Japan —Web of Science 17

**Reference groups for categorical variables were selected from the most common response for the variable. The only exception to this rule was for occupation, in which “medical and healthcare workers” were selected as the reference group because of their hypothesized higher vaccine uptake rate [2,5].**

1. Types of anticipated affect that encourage and discourage vaccination: a scoping review protocol —Web of Science **62**
2. Understanding Reasons for Vaccination Hesitancy and Implementing Effective Countermeasures: An Online Survey of Individuals Unvaccinated against COVID-19 —Web of Science 28

**Trust in healthcare providers**

1. Universal versus risk-based strategies for vaccinating children against COVID-19: Japan and Korea. —OVID
2. [Updated beliefs and shaken confidence: evidence from vaccine hesitancy caused by experiencing “COVID arm”](https://www-scopus-com.myaccess.library.utoronto.ca/record/display.uri?eid=2-s2.0-85171562210&origin=resultslist&sort=plf-f&src=s&sid=cbdb607768a79909ac1d37553490261d&sot=b&sdt=cl&cluster=scosubtype%2C%22ar%22%2Ct%2C%22re%22%2Ct%2Bscolang%2C%22English%22%2Ct%2Bscoexactkeywords%2C%22Human%22%2Ct%2C%22Japan%22%2Ct%2C%22Vaccine+Hesitancy%22%2Ct%2C%22COVID-19%22%2Ct%2Bscoaffilctry%2C%22Japan%22%2Ct%2Bscosrctype%2C%22j%22%2Ct&s=%28TITLE-ABS-KEY%28covid+19%29+AND+TITLE-ABS-KEY%28Japan%29+AND+TITLE-ABS-KEY%28vaccine+hesitancy%29%29&sl=87&sessionSearchId=cbdb607768a79909ac1d37553490261d&relpos=8) —Web of Science 60
3. Vaccine hesitancy in adolescents regarding COVID-19 vaccination: A literature review —Web of Science 7

**Healthcare providers are adolescents’ most trusted sources for information on COVID-19 vaccines [24].**

1. Vaccine Hesitancy and Susceptibility to SARS-CoV-2 Misinformation in Japanese Youth: The Contribution of Personality Traits and National Identity—ProQuest
2. Willingness to Receive COVID-19 Vaccination in Japan —Web of Science 13

**The foundation of vaccination acceptance is public trust, namely, trust in vaccines and vaccine producers, in the healthcare profession, and the government [26].**

1. Willingness to Receive the COVID-19 Vaccination and the Psychological State of Japanese University Students: A Cross-Sectional Study —Web of Science 57