

A Registry Linkage Study Examined the Actual Uptake of the COVID-19 Vaccine among People Who Had Previously Expressed Vaccine Hesitation

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Abstract

Uptake of COVID-19 vaccination remains low in the United States and other settings. Though early reports indicated that a strong majority of people were interested in entering the COVID-19 vaccine, the association between vaccine intention and uptake isn't yet completely understood. Our goal was to describe predictors of vaccine uptake and estimate the perceptivity, particularity and prophetic values of tone reported COVID-19 vaccine status compared to a comprehensive statewide COVID-19 vaccine registry. A cohort of California residents that entered a molecular test for SARS-CoV-2 infection during 24 February-5 December 2021 were enrolled in a telephone administered check. Survey actors were matched with records in a statewide immunization registry. Cox commensurable hazards model were used to compare time to vaccination among those unvaccinated at check registration by tone reported COVID-19 vaccination intention.

Keywords: COVID- 19; Pathogenicity; Biohazard; Biomedical; SARS-CoV-2

Introduction

COVID-19 vaccination among eligible individuals in the United States (US) and other settings has contributed to preventable COVID-19 cases, hospitalizations and deaths [1]. Addressing barriers to timely vaccination against COVID-19 is therefore a precedence to alleviate complaint burden. While checks have handed an important tool for assessing vaccine hesitancy and acceptance across differing communities, alignment between actors tone reported vaccine intentions and real world damage of vaccination isn't well understood [2,3]. Understanding barriers and facilitators of COVID-19 vaccine damage among individuals who express hesitancy or that avert vaccine access among individuals, who express amenability, could support efforts to maximize vaccine uptake. The state of California first made COVID-19 vaccines available to health care workers in November 2020; by April 19, 2021, eligibility for COVID-19 vaccination expanded to all California residents aged 16 times and aged [4,5]. Healthcare providers administering COVID-19 vaccines in California are needed to report all boluses administered to original or state position public health authorities, enabling comprehensive shadowing of vaccine uptake within the state's population via the state wide immunization registry.

Literature Review

As of December 5, 2021, 28.5 million of California's 39.2 million residents were recorded as having entered ≥ 1 boluses of any COVID-19 vaccine within the state. The California Department of Public Health (CDPH) collected data on amenability to admit COVID-19 vaccines among actors enrolled in a test negative design case control study throughout COVID-19 vaccine rollout [6]. To understand the relationship between actors tone reported vaccine intentions and real world vaccine uptake, we cross referenced data from study actors and the state wide immunization registry to compare COVID-19 vaccine damage among individuals who expressed hesitancy or amenability to be vaccinated. To further inform uses of tone reported vaccination in exploration studies, we assessed the delicacy of actors tone reported COVID-19 vaccination status in comparison with registry grounded attestation of COVID-19 vaccination. This analysis used data from

actors enrolled between 24 February 2021 and 5 December 2021 in the California COVID-19 case control study, which was accepted to estimate threat factors for SARS-CoV-2 infection within the state. Survey methodology has been described away. In brief, each day throughout the study period aimlessly named California residents who tested positive and negative for SARS-CoV-2 infection were asked to share in a telephone interview whereby trained interviews administered a structured questionnaire in English and Spanish recording tone reported COVID-19 vaccination status.

Discussion

The state of California intends to capture all COVID-19 vaccinations being within the state to cover trends, identify gaps in content and inform public health efforts. We linked party records across the study and California immunization registry using a preliminarily described probabilistic frame. We first linked records of vaccine boluses administered among all study actors by searching for exact or deterministic matches on zip law of hearthstone and date of birth and fuzzy matches on first and last name homogenizing textbook fields by removing uppercase letters, spaces and special characters. Actors were considered to have no proved damage of COVID-19 vaccine boluses if the stylish probable match (range 0.0000-1.0000) in the vaccine registry was <0.5000 while those with probable match

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score ≥ 0.9525 were considered to have a proved vaccine cure. We shouldered homemade review of records when one party was matched to multiple registry vaccine California COVID-19 case control study, healthcare providers in 49 of 58 California counties (inclusively counting for 87 of California's population) submit data on vaccine administration directly to the state wide immunization registry on all COVID-19 vaccine boluses administered. In the remaining nine counties, data are linked to the state wide immunization registry from original position registries.

The San Diego Immunization Registry (SDIR) collects data from providers in San Diego county, while the Healthy Futures (HF) Immunization registry collects data from providers in the remaining eight counties (Alpine, Amador, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus and Tuolumne); the state wide immunization registry receives data from these indigenous IISs rather than by direct announcement from healthcare providers. Reports on lesser than 90 of boluses administered within the state of California are entered by the state wide immunization registry within one day of the vaccine administration date. Still, some vaccination cure cessions may be less timely, similar as those from mass vaccination conventions or those that are manually entered into the state wide immunization registry. N=3031 individualities were included in the estimates of perceptivity, particularity, positive prophetic value and negative prophetic value. N=886 actors are included in the analyses (cox commensurable hazard model) assessing the association between pronounced vaccine acceptance and posterior vaccine uptake. We also sought to validate actors' tone reported vaccination status using the immunization registry.

Actors were each distributed into four mutually exclusive orders according to alignment of their tone reported vaccination status and linked data from the immunization registry tone reported vaccinated with match in immunization registry (A), tone reported vaccinated without match in immunization registry (B), tone reported unvaccinated and match in immunization registry (C) or tone reported unvaccinated and without immunization registry match (D). Vaccination status in the immunization registry was recoded to match the vaccination status of a party at the time of their telephone interview. Perceptivity, particularity, Positive Prophetic Value (PPV) and Negative Prophetic Value (NPV) of tone reported vaccination status as compared with registry proved vaccination status treated as the "gold standard" were calculated with accompanying 95 confidence intervals *via* bootstrap resampling. We stratified these computations by use of a recall aid at the time of study participation, SARS-CoV-2 test result, registration period in the study, age and region.

Actors of all periods were included in these analyses. As a perceptivity analysis, we conducted a quantitative bias analysis to assess the extent to which vaccine effectiveness estimates deduced from tone reported vaccination status in epidemiologic data sets may be poisoned due to discriminational perceptivity and particularity between cases and controls. Among individualities who were unvaccinated at the time of entering a test for SARS-CoV-2 infection during the period of wide COVID-19 vaccine vacuity, we set up that COVID-19 vaccination intentions were explosively but imperfectly associated with posterior inauguration of COVID-19 vaccine series. By 5 December 2021, 2022 of actors who responded as doubtful about entering COVID-19 vaccines and 13 who expressed reluctance to entering COVID-19 vaccines had entered at least one cure of COVID-19 vaccine per immunization registry; whereas no record of vaccination was available for 54 of actors who expressed amenability

to admit COVID-19 vaccines. Vaccine uptake was fastest among the loftiest income homes and actors who expressed amenability to admit COVID-19 vaccination. We linked that a positive SARS-CoV-2 test result prognosticated lower hazard of COVID-19 vaccination, most strikingly, among individualities who reported being doubtful about or unintentional to entered vaccine. This suggests that there might be openings for outreach to encourage vaccine uptake among individualities who have entered a positive COVID-19 test result.

Also, we linked faster time to vaccinate among children as compared to grown-ups, maybe due to vaccination eligibility expanding among this group latterly in vaccine roll eschewal, swinging parent's further time to consider the benefits of vaccination. Adaptive and dynamic messaging about the strength and continuity of infection convinced impunity and bettered sweats to resolve confusion associated with suitable distance of COVID-19 infection and damage of COVID-19 vaccination may ameliorate uptake. We didn't identify strong substantiation of differences in vaccine uptake among unvaccinated individualities according to race/race, region of hearthstone, anxiety about COVID-19 or opinions about other COVID-19 preventative strategies. No single set of party reported reasons for query or reluctance to admit COVID-19 vaccine was associated with liability of posterior vaccine uptake. While our findings identify that query and reluctance to admit COVID-19 vaccination isn't an absolute hedge to posterior damage of vaccination, sour vaccine uptake among unvaccinated individualities who expressed amenability to be vaccinated demonstrate gaps in vaccine delivery and/or outreach sweats in California. Associations of vaccine uptake with ménage income, among actors expressing both uncertainly/reluctance and amenability to admit COVID-19 vaccination, emphasize the need to promote vaccine access and vacuity in underserved/low income communities.

Conclusion

This analysis has several limitations. First, bracket of actors with no vaccine record linked in the immunization registry as unvaccinated may be inaccurate; for case, if individualities entered all their vaccine boluses outside California. Still, this misclassification is likely uncommon, given our study was limited to California residents, recommended intervals between first and alternate mRNA boluses are long and recommendations for damage of supporter boluses were issued during the study period. Second, this study was limited to actors who sought SARS-CoV-2 testing, who may else be more connected to health services and thus more likely seek vaccination. Third, this analysis estimated only inauguration of the COVID-19 vaccine series which may be an amiss predictor of amenability to admit posterior boluses demanded to maintain or restore impunity to defensive situations. Fourth, this analysis was limited to actors who were unvaccinated throughout the study period and thus doesn't estimate determinants of vaccine uptake across the full population in California; still, predictors of vaccine uptake among the unvaccinated remain important to inform public health programs aimed at perfecting vaccine content. Eventually, unmeasured confounding may persist. We linked that tone reported vaccination intent was a strong but amiss predictor of posterior vaccine inauguration. As no single reason for vaccine hesitancy prognosticated liability of vaccine damage, public health juggernauts addressing multiple factors underpinning vaccine hesitancy remain important tools to ameliorate acceptance in reluctant populations.

References

1. Andrejko KL, Myers JF, Fukui N, Nelson L, Zhao R, et al. (2023) Real world uptake of COVID-19 vaccination among individuals expressing vaccine hesitancy: A registry linkage study. *Vaccine* 41: 1649-1656.
2. Ortqvist AK, Dahlqvist E, Magnus MC, Ljung R, Jonsson J, et al. (2022) COVID-19 vaccination in pregnant women in Sweden and Norway. *Vaccine* 40: 4686-4692.
3. Piekos SN, Price ND, Hood L, Hadlock JJ (2022) The impact of maternal SARS-CoV-2 infection and COVID-19 vaccination on maternal fetal outcomes. *Reprod Toxicol* 114: 33-43.
4. Sopjani I, Arbag E, Tokat MA, Ozozturk S (2022) The COVID-19 vaccine opinions of women planning a pregnancy: International web blogs scanning. *Med Arch* 76: 354-362.
5. Soderstrom E, Mussener U, Lofgren M, Sandell L, Thomas K, et al. (2022) Healthcare professionals' perceptions of promoting healthy lifestyle behaviors in pregnant migrant women and the potential of a digital support tool-a qualitative study. *Int J Environ Res Public Health* 19: 2328.
6. Lewnard JA, McLaughlin JM, Malden D, Hong V, Puzniak L, et al. (2022) Effectiveness of nirmatrelvir-ritonavir against hospital admission or death: A cohort study in a large US healthcare system. *MedRxiv* 10.