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UP-03 Identifying the determinants of pediatric vaccine uptake during the COVID-19 pandemic

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Abstract

Identifying determinants of vaccination uptake is critical for public and community health. The population became divided in regard to preventative measures and vaccinations during the COVID-19 pandemic. In addition, there are varying opinions on decisions to vaccinate children against childhood diseases and COVID-19. Recent findings suggest the COVID-19 pandemic has exacerbated existing vaccine hesitancy. Here, we assess the factors responsible for vaccine hesitancy in parents and how the COVID-19 pandemic has affected attitudes toward childhood vaccines using a survey given to parents in South Carolina. Knowledge about COVID-19 and vaccinations affects vaccination intentions. Age, education, gender, and politics also all contribute to parents' decisions about vaccinating their kids. Understanding potential deterrents to vaccine acceptance will aid healthcare providers and public health entities to better reach the community

Introduction and Methods

- As of November 30, 2022, COVID-19 has caused over 1 millions deaths in the United States.
- By June 2022, all age groups are eligible for first and second doses of the COVID-19 vaccine.
- In December 2022, only 53.7% of eligible adults and 21.2% of eligible children have completed the primary vaccine series.
- Parental vaccination hesitation allows dormant diseases and new variants of COVID-19 to surface.
- This study identifies determinants of pediatric vaccine uptake and changing trends in vaccination rates caused by the COVID-19 pandemic.
- Qualtrics survey platform was used to survey 1765 South Carolina residents age 18+, from October-December 2021

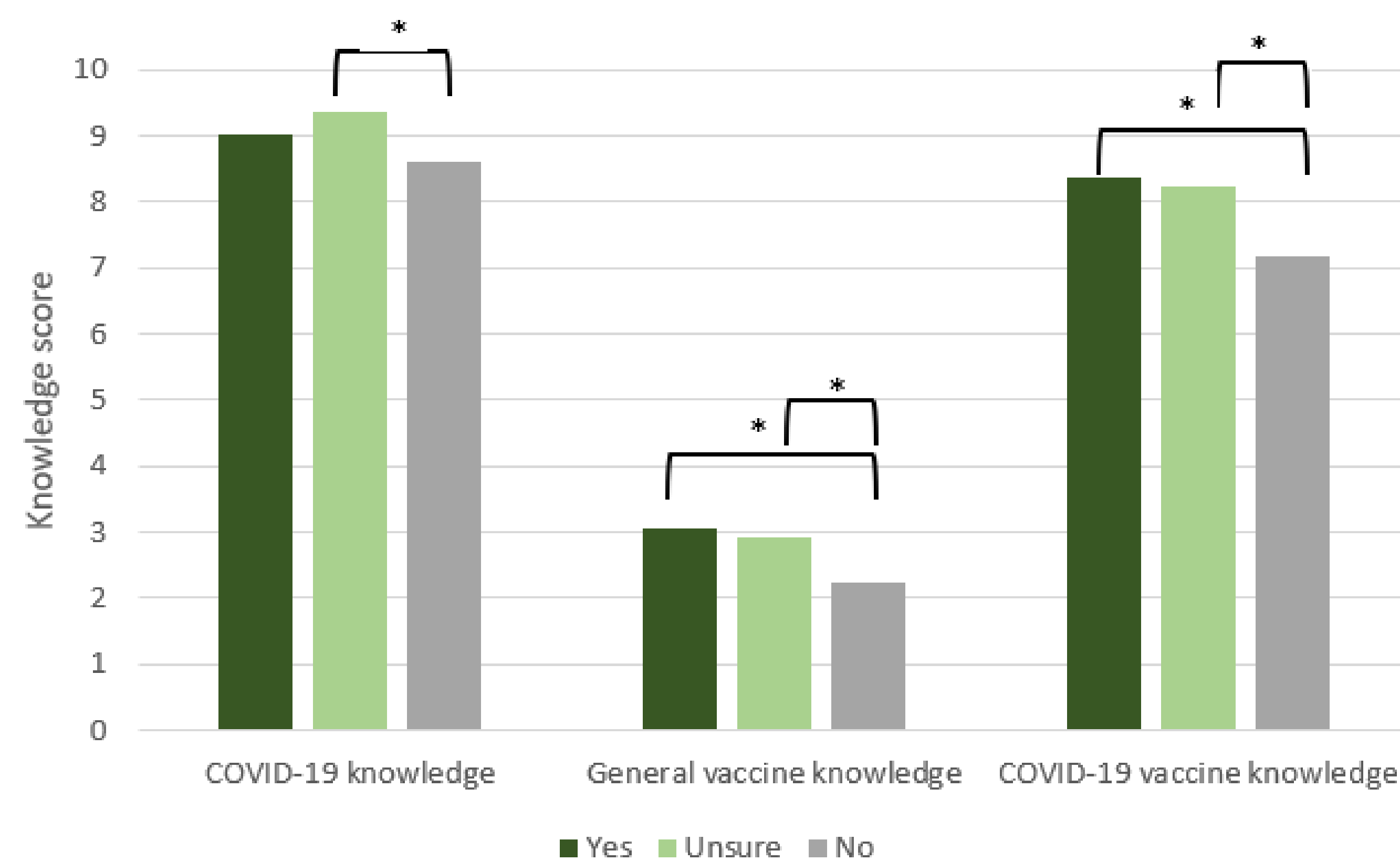


Figure 1. The role of COVID-19 and vaccine knowledge in parental intentions to vaccinate children against COVID-19. Knowledge scores varied significantly between parents who answered yes, no, or unsure in response to plans to vaccinate their child(ren), * $p < 0.01$ (Data analyzed with ANOVA and Games-Howell post-hoc analysis)

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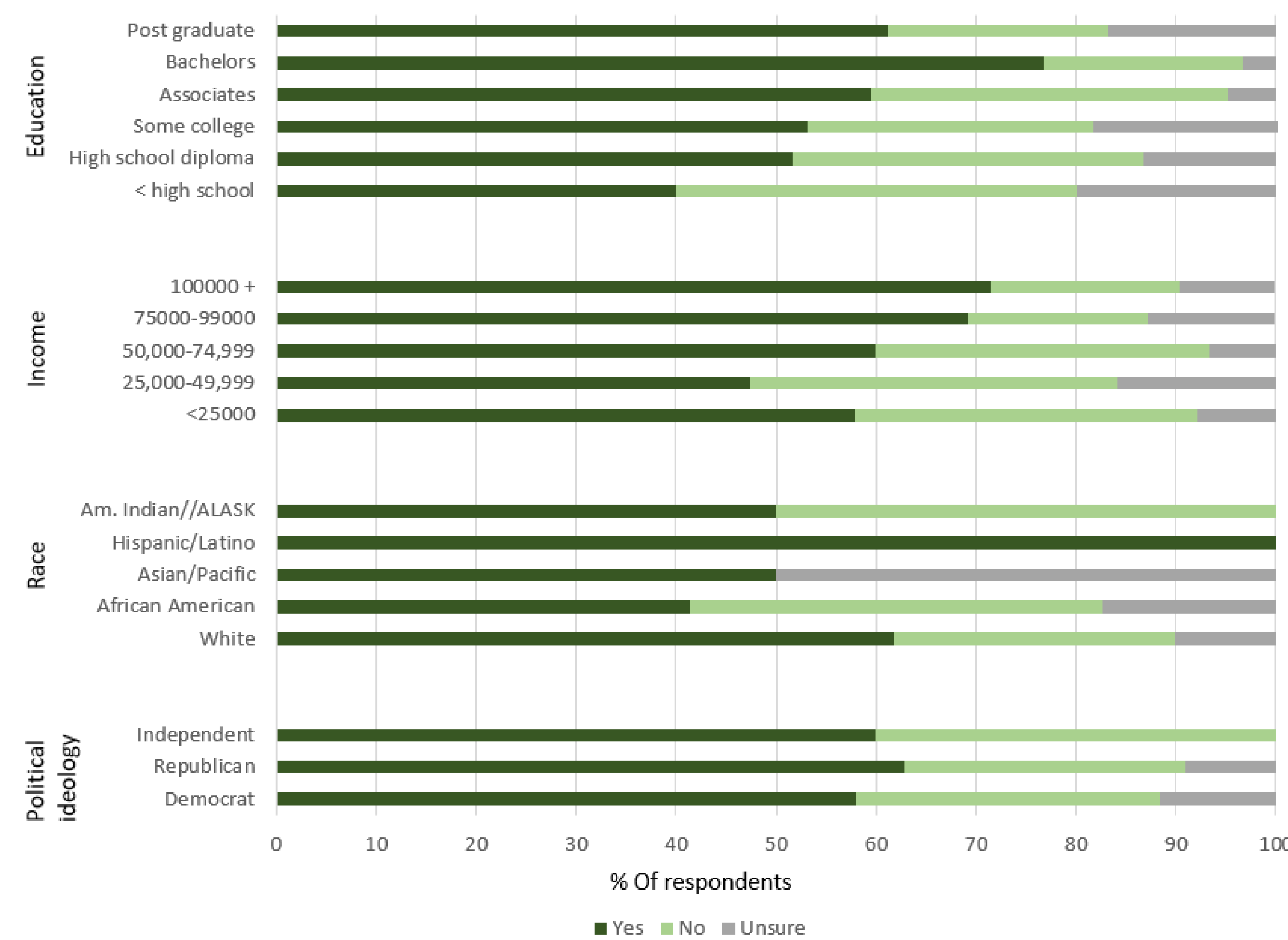


Figure 2. Parental intentions to vaccinate children with general recommended childhood vaccines vs demographic factors. Summary of reported demographics of expecting parents who responded to survey based on their intentions for their child(ren) to receive the recommended childhood vaccinations, n=204.

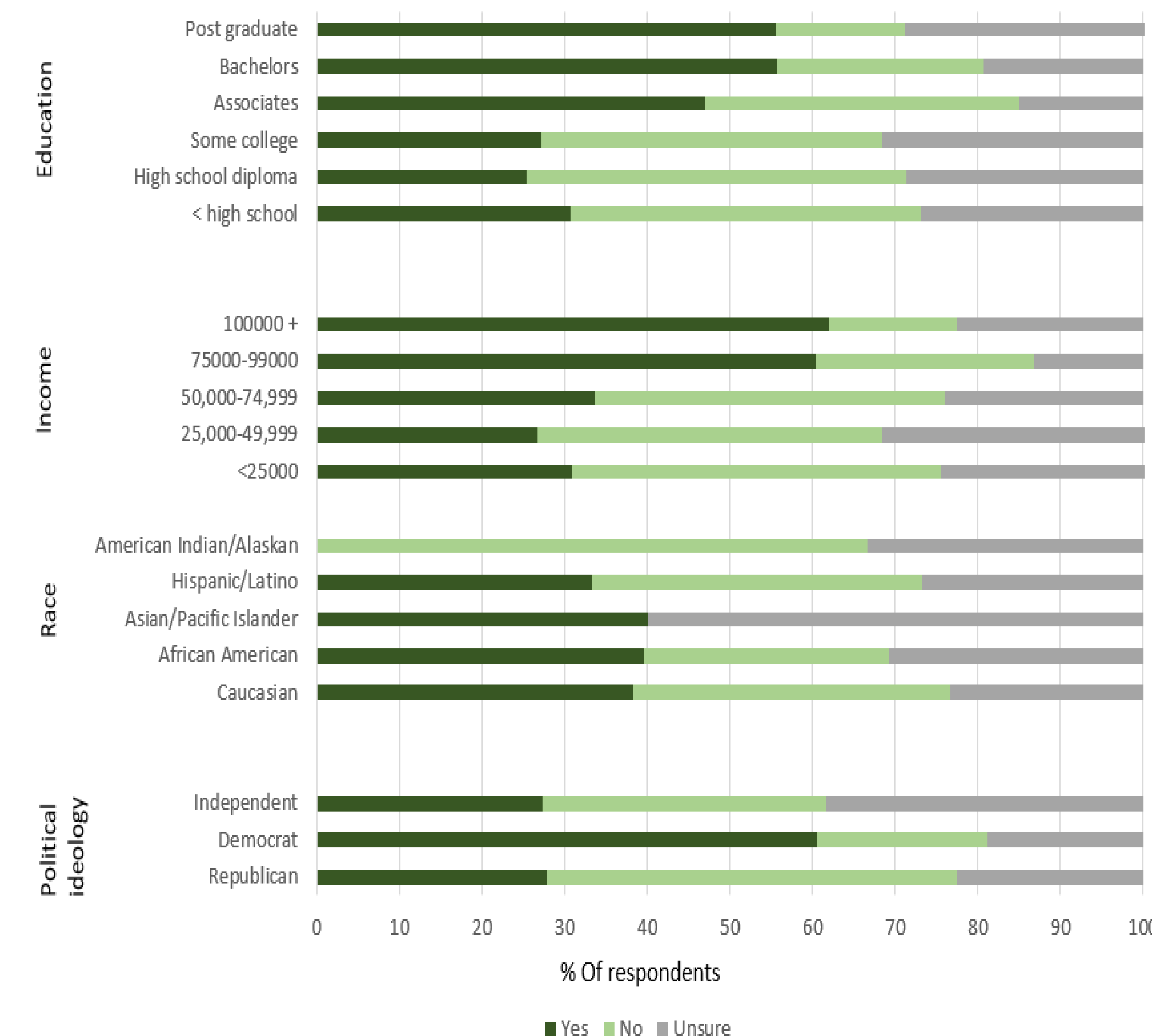


Figure 3. Parental intentions to vaccinate children against COVID-19 vs demographic factors. Summary of reported demographics of parents with children 17 or under who responded to survey based on their intentions for their child(ren) to receive the COVID-19 vaccine, n=745.

Table 1. Intentions to vaccinate children for COVID-19 of parents of children 17 and under.

| | | <i>B</i> | <i>SE</i> | Wald | <i>p</i> | Odds Ratio | 95% Confidence Interval for Odds Ratio | |
|--------|--|----------|-----------|-------|----------|------------|--|-------------|
| | | | | | | | Lower Bound | Upper Bound |
| No | Intercept | 6.67 | 1.12 | 35.66 | <.001 | | | |
| | What is your age? | -0.04 | 0.02 | 5.22 | 0.022 | 0.96 | 0.93 | 0.99 |
| | What is your highest level of education? | -0.288 | 0.12 | 5.81 | 0.016 | 0.75 | 0.59 | 0.95 |
| | CovidVAXknowledge | -0.37 | 0.11 | 12.38 | <.001 | 0.69 | 0.56 | 0.85 |
| | GeneralVAXknow | -0.716 | 0.18 | 15.85 | <.001 | 0.49 | 0.34 | 0.70 |
| | COVIDKnowledge | 0.166 | 0.09 | 3.51 | 0.061 | 1.18 | 0.99 | 1.41 |
| | Race | 0.217 | 0.42 | 0.27 | 0.602 | 1.24 | 0.55 | 2.81 |
| | Sex | -1.709 | 0.39 | 19.40 | <.001 | 0.18 | 0.09 | 0.39 |
| | Political ideology | -1.507 | 0.36 | 17.93 | <.001 | 0.22 | 0.11 | 0.45 |
| | Intercept | 2.317 | 1.21 | 3.66 | 0.056 | | | |
| Unsure | What is your age? | -0.012 | 0.02 | 0.52 | 0.473 | 0.99 | 0.96 | 1.02 |
| | What is your highest level of education? | -0.361 | 0.13 | 8.09 | 0.004 | 0.70 | 0.54 | 0.89 |
| | CovidVAXknowledge | -0.192 | 0.11 | 3.00 | 0.083 | 0.83 | 0.66 | 1.03 |
| | GeneralVAXknow | -0.215 | 0.20 | 1.18 | 0.277 | 0.81 | 0.55 | 1.19 |
| | COVIDKnowledge | 0.281 | 0.10 | 7.55 | 0.006 | 1.32 | 1.08 | 1.62 |
| | Race | -0.744 | 0.42 | 3.19 | 0.074 | 0.48 | 0.21 | 1.08 |
| | Sex | -1.096 | 0.39 | 7.88 | 0.005 | 0.33 | 0.16 | 0.72 |
| | Political ideology | -1.469 | 0.39 | 14.50 | <.001 | 0.23 | 0.11 | 0.49 |

The reference category for the dependent variable is "Yes." SE = standard error.

Conclusions

- During the COVID-19 pandemic, there was a notable decrease in childhood vaccination intentions with 58% of expecting parents in this survey reporting intentions to vaccinate their children with routine childhood vaccinations.
- Higher parental education levels correlate with increased intentions for vaccination against COVID-19.
- Age, gender, and political ideology were shown to be contributors to parents' decisions about pediatric COVID-19 vaccination acceptance
- Political affiliation did not appear to be a major contributor to routine childhood vaccination intentions.
- Parents reported more hesitation regarding the COVID-19 vaccine compared to general childhood vaccines.
- There is a significant difference in knowledge regarding COVID-19, COVID-19 vaccines, and general vaccines between parents who vaccinated their children against COVID-19 compared to parents who did not.

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