

Association Between State-level Voting Patterns and Prior Receipt of the HPV Vaccine, an Analysis Using Data from the Behavioral Risk Factor Surveillance System 2016 – 2018



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BACKGROUND

- Human papillomavirus (HPV) is the main cause of cervical, anal and oropharyngeal cancer worldwide.
- The HPV vaccine can prevent >90% of HPV-related malignancies, but overall vaccine uptake remains low across the United States, with vaccination rates varying by region.

METHODS

- This study analyzed data from the Center for Disease Control and Prevention’s (CDC) Behavioral Risk Factors Surveillance System (BRFSS).
- Persons ages 18 – 36 years of age who lived in 17 states that included the supplementary “Adult HPV” questionnaire in 2016, 2017, or 2018 were included.
- We compared self-reported receipt of HPV vaccination among persons living in Republican-leaning vs. Democrat-leaning states, based on electoral college votes in the 2016 U.S. presidential election.
- Mantel-Haenszel stratified analysis was used to estimate prevalence ratios, adjusted for race/ethnicity.

Table 1. Characteristics of Participants in Democrat and Republican Voting States, BRFSS 2016 - 2018

	Democratic states (n = 10,263)	Republican states (n = 26,071)
Age in years (%)		
18-25	3,768 (43)	9,287 (43)
26-36	6,495 (57)	16,784 (57)
Sex (%)		
Female	5,018 (49)	13,557 (49)
Male	5,240 (51)	12,493 (51)
Race/Ethnicity (%)		
Non-Hispanic white	4,586 (41)	15,507 (48)
Non-Hispanic black	636 (7)	4,475 (17)
Non-Hispanic Asian	1,401 (13)	692 (5)
Hispanic	1,909 (35)	3,908 (28)
Other	1,554 (5)	1,127 (3)
Health Insurance Status (%)		
Yes	9,069 (87)	20,404 (74)
No	1,109 (13)	5,440 (26)
Education level (%)		
High school or less	3,387 (41)	9,480 (43)
Some college or more	6,844 (59)	16,537 (57)
Received flu vaccine (%)		
Yes	2,660 (26)	6,748 (27)
No	6,722 (74)	17,210 (73)
Unknown	881 (9)	2,113 (8)

Figure 1. Prevalence of Prior HPV Vaccination Among Participants in Democrat and Republican States

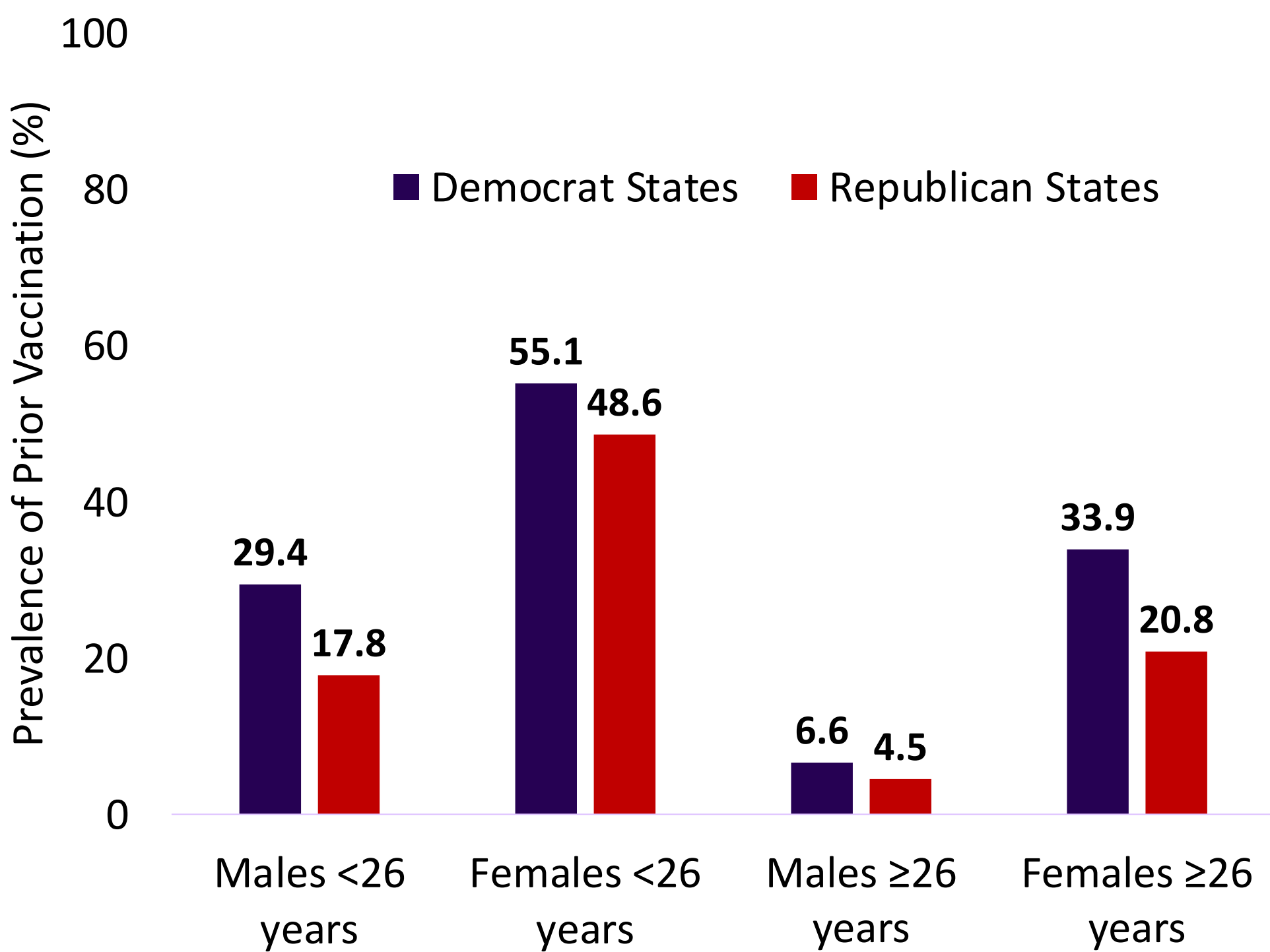


Table 2. Adjusted Prevalence Ratios for Receipt of the HPV Vaccine in Democrat vs. Republican States

Prevalence Ratio for Prior Receipt of HPV Vaccine (95% Conf. Int.)	
Adjusted PR	1.43 (1.37, 1.51)
<26 years of age	
Males	1.77 (1.58, 1.98)
Females	1.20 (1.13, 1.27)
≥26 years of age	
Males	1.51 (1.24, 1.85)
Females	1.69 (1.57, 1.83)

RESULTS

- Among the 36,334 survey respondents, prior receipt of the HPV vaccine was reported among:
 - **28.1% in Democrat states**
 - **20.4% in Republican states**
- Adjusting for race/ethnicity, living in a Democrat state was associated with a **1.43-fold higher** prevalence of prior receipt of the HPV vaccine in comparison to living in a Republican state.
- This association was strongest for men less than 26 years of age but remained significant across age and gender strata, as shown in table 2.

CONCLUSIONS

- Overall HPV vaccine coverage was low in adults 18– 36 years of age
- Living in a Democrat state was associated with a higher prevalence of prior receipt of the HPV vaccine regardless of age or gender strata.
- Further public health efforts are needed to promote HPV vaccine uptake, particularly in Republican voting states.