

# Individual- and Partner-Level Characteristics Associated with Vaccine-Type and Non-Vaccine-Type Human Papillomavirus Infection (HPV) in Young Women After Vaccine Introduction

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**Background:** Many HPV studies have shown that the strongest determinants of infection are related to sexual behavior. However, little is known about the associations between individual-level and partner-level risk factors for HPV infection after vaccine introduction.

**Aims:** 1) Determine individual- and partner-level factors associated with 4-valent vaccine-type and non-vaccine-type HPV among young women; 2) Assess whether these associations vary by vaccination status.

**Methods:** Sexually experienced young women 13-26 years of age (N=735) were recruited from two primary care clinics, completed self-administered surveys, and provided cervicovaginal swabs that were tested for 36 HPV genotypes. We determined the prevalence of 4-valent vaccine-type HPV (HPV6, 11, 16, 18) and non-vaccine-type HPV, and determined individual- and partner-level factors associated with HPV, among vaccinated and unvaccinated women using univariable logistic regression.

**Results:** Participants' mean age was 19.2 years; 76% had received  $\geq 1$  vaccine dose (91% 4-valent, 9% 9-valent) and 61% all three doses; 7.6% were positive for  $\geq 1$  4-valent-vaccine-type and 61.7% for  $\geq 1$  non-vaccine-type HPV. The mean age of reported partners was 20.0 years and 81.2% were considered main partners. Factors associated with *vaccine-type* HPV in *vaccinated* women were number of vaccine doses and having at least one female partner in the past 12 months. Factors associated with *vaccine-type* HPV in *unvaccinated* women included: history of STI, having at least one female partner in the past 12 months, partner's number of sexual partners in the past 12 months, and being unsure of their partner's involvement in concurrent sexual partnerships during the relationship. Factors associated with *non-vaccine-type* HPV in *vaccinated* women included: Black vs. White race, history of STI, recent marijuana use, number of lifetime male partners, number of male partners in the past 3 months, lifetime history of concurrent sexual partnerships, having a concurrent sexual partnership with their most recent partner, and their partners' number of sexual partners in the past 12 months. Factors associated with *non-vaccine-type* HPV in *unvaccinated* women included recruitment site (health department vs. teen health center), Black vs. White race, history of STI, number of lifetime male partners, and their partner's number of sexual partners in the past 12 months.

**Conclusions:** This study demonstrated several demographic characteristics, sexual behaviors, and partner-related factors associated with vaccine-type and non-vaccine type HPV among young adult women. These findings have important implications for educational interventions, vaccination policies, and cervical cancer screening recommendations.

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