



Human papillomavirus vaccination uptake and completion as a preventive health measure among female adolescents

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ABSTRACT

Background: National coverage for the human papillomavirus (HPV) vaccine falls short of the targeted goals for Healthy People 2020 with disparities in completion rates noted in minority adolescent female populations. The purpose of this study was to provide a review of the literature on HPV vaccination uptake and completion rates among female minority adolescents as well as a discussion of the financial and policy dimensions of HPV vaccination with implications that impact uptake and completion rates.

Methods: By reviewing the literature, the authors show that the two human papillomavirus (HPV) vaccines, Gardasil and Cervarix, have presented unprecedented opportunities to prevent morbidity and mortality from cervical cancer. **Conclusion:** The authors recommend that nurses and advanced practice nurses take an active role at the point of care to educate families about HPV vaccination. Nursing interventions for practice changes are provided to improve vaccination initiation and completion rates in disadvantaged populations.

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Introduction

The importance of immunizations worldwide has been well documented. Immunizations are one of the strongest primary preventive health strategies for decreasing or eradicating infectious diseases. Like the hepatitis B vaccine, the human papillomavirus (HPV) vaccine was a significant medical achievement (Kwak, Yemelyanova, & Roden, 2011). Cervarix and Gardasil, the two HPV vaccines, are designed to significantly reduce the incidence of HPV and cervical cancer in the

United States and worldwide (Bosch & de Sanjosé, 2007). The targeted national goal of Healthy People 2020 for HPV immunization in young female adolescents aged 13 to 15 is 80% in an effort to reduce HPV and cervical cancer (Healthy People 2020, 2013). However, statistics from 2008 show that only 17% of female adolescents completed the HPV vaccine series in the United States and 34.8% in 2010 (Centers for Disease Control and Prevention [CDC], 2010a, 2010b, 2013; Healthy People 2020, 2013). The CDC (2013) reported that HPV initiation rates remained stable from 2011 to 2012 but that completion rates among female

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adolescents dropped in 2013. These rates are considered dismally poor compared with rates from other developed nations where HPV vaccination rates have exceeded 80% (LaMontagne et al., 2011). This article provides a review of the literature on HPV vaccination uptake and completion rates among minority female adolescents as well as a discussion of the financial and policy dimensions of HPV vaccination with implications that impact uptake and completion rates. To reduce the rate of cervical cancer, a multidimensional approach is needed that addresses barriers and access to care, health care policy, parent and patient education, and trust of health information regarding immunizations from health care providers and the pharmaceutical industry (Brewer & Fazekas, 2007; Teitelman, Stringer, Averbuch, & Witkoski, 2009).

Background

Cervical cancer is one of the most common cancers worldwide and one of the most preventable cancers in women (Bosch & de Sanjosé, 2007). Statistics from the American Cancer Society (2014) estimate that approximately 12,360 new cases per year of invasive cervical cancer (ICC) will be diagnosed and 4,030 will die from the disease. Cervical cancers are known to be caused by HPV, and HPV is the most widespread sexually transmitted infection (STI) in the United States (Bosch & de Sanjosé, 2007). Although HPV is widespread among adolescents and young adults, the virus has been one of the least recognized of all STIs, with little national effort directed toward increasing awareness through education about preventive measures and risk reduction through behavior change (Dursun, Altuntas, Kuscu, & Ayhan, 2009). Cervical cancer is a slow-growing malignancy that is highly preventable with immunization and cervical cancer/HPV DNA screening. ICC typically takes years to develop and requires the presence of HPV infection in the urogenital region (Chang, Brewer, Rinas, Schmitt, & Smith, 2009). Among women diagnosed with ICC, more than 50% had never undergone cervical cancer screening, and more than 70% were infected with HPV 16 or 18 (Chang et al., 2009).

In the United States, women of low socioeconomic status and women of color are two to three times more likely to develop ICC as a result of persistent urogenital HPV compared with women of higher socioeconomic status. Black women have reported greater prevalence rates of HPV infection (15%) compared with White women (Bynum, Brandt, Sharpe, Williams, & Kerr, 2011). Black women have higher prevalence rates of ICC compared with White women (10.1 per 100,000 Black women compared with 7.9 per 100,000 White women). Mortality rates of Black women diagnosed with ICC were higher than those of White women (4.4 per 100,000 compared with 2.2 per 100,000 White women; Baquet, Mishra, Commiskey, Ellison, & DeShields, 2008; Bynum et al., 2011; Mehta et al., 2012).

Although cervical cancer prevention and treatment have been widely successful in many areas in the United States among populations of women who are insured and in middle to higher socioeconomic levels, women of low income experience barriers to gynecologic preventive health care, particularly cervical cancer screening and its sister diagnostic test, colposcopy. This situation causes great disparities in HPV treatment and follow-up for marginalized populations (Reis et al., 2008). Inadequate use of existing cervical cancer screening health care services and HPV vaccine immunization among Black women and female adolescents has been attributed to cultural differences between patients and health care providers, religious beliefs, medical mistrust, lack of health care insurance coverage, provider bias, prejudice, and low health care literacy (Keating et al., 2008; Klassen, Smith, Shariff-Marco, & Juon, 2008).

Review of the Literature

Genital HPV Infection

Incidence and prevalence rates of HPV are based on estimates because HPV infection is not a reportable STI (Hager, 2009). Approximately 6 million new HPV infections occur each year, with nearly 20 million Americans infected (Ault, 2006). Persistent high-risk HPV in the urogenital tract is responsible for cervical intraepithelial neoplasia (CIN). If left undetected or untreated, it can progress to ICC or adenocarcinoma of the cervix. Female adolescents (20 years and younger; Widdice & Moscicki, 2008) are at the highest risk of HPV infection, with reported prevalence rates of 18.3% (Forhan et al., 2009) to 82% (Brown et al., 2005). Among female adolescent and college students, the 24-month cumulative incidence of HPV infection was reported to be 39%; the 36-month cumulative reported incidence of squamous intraepithelial lesions, the preinvasive presentation of cervical disease, was reported to be 47% (McCormack & Joura, 2010). As women age, the rate of HPV prevalence gradually decreases; thus, health care professionals focus their health risk reduction and prevention on adolescents because the acquisition of disease occurs most often in the teenage years (Dunne et al., 2007; Saraiya, Martinez, Glaser, & Kulasingam, 2009). Although the rate of progression of CIN is relatively low, women and adolescent women of lower socioeconomic levels who fail to receive HPV vaccination at the critical recommended time are at greater risk of ICC and persistent CIN of the cervix (Dunne et al., 2007).

HPV is transmitted primarily during penile and vaginal sexual penetration but can also be transmitted during oral sex, genital to genital contact, and anal sex. Condoms can reduce, but not eliminate, transmittal risk (Miksis, 2008). The majority (approximately 90%) of HPV infections are asymptomatic, and the virus clears

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