The Effect of the Human Papillomavirus (HPV) Vaccine on Fertility Rates: A Systematic Review

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Introduction

Seventy-nine million Americans, or one in four, are infected with Human Papillomavirus (HPV) (Figure 3). HPV is the main cause of genital warts and cervical cancers. The HPV vaccine is thought to have affected fertility of men and women through reduced sperm motility and reduced pregnancy rates (1). Current U.S. vaccination rates have been low compared to other countries: 20% of 13-17 year olds receive all three HPV doses; however, Australia and the United Kingdom have 75-80% vaccination rates (2). Understanding this connection can raise awareness of the HPV vaccine and can stop the spread of HPV; thus, lowering the rates of cervical cancers and genital warts.

Methods

- PubMed database
- Key words: “adolescents,” “young adults,” “HPV vaccine,” “human papillomavirus vaccine”, “cervical cancer vaccine” “fecundity,” and “fertility” were used.
- 8 studies were included (Figure 1)

Results

- The HPV vaccination has no negative effects on fertility rates of men and women.
- Six out of eight studies concluded that there were no negative effects on fertility rates of men and women after HPV vaccine exposure.
- One study concluded that the HPV vaccination increased fertility rates among women with a history of sexually transmitted infections (3).
- Another study found that the HPV vaccination increased male fertility rates by making the semen cells in infertile men, more motile (4).

Public Health Implications and Recommendations

- Current vaccination treatments should not change; however, the HPV vaccine should be promoted more among women with a history of sexually transmitted infections and infertile men.
- The HPV vaccination provides a protective barrier for young men and women.
- Future studies should include cohort generations and further research needs to be conducted to come to a more concrete conclusion.

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Figure 1: Process for identifying and including articles in the systematic review.

Figure 2: Graphic showing percentages and reasons why some parents refuse the HPV vaccine.

Figure 3: Graphic showing how common HPV is.

Figure 4: Percentage of cancers caused by HPV types 16/18 (dark blue) that are covered by the HPV vaccine currently.