

Abstract

Human papillomavirus (HPV) infection is one of the most common sexually transmitted infections in the United States. The infection is passed through skin-to-skin genital contact, including vaginal, oral, and anal sex. While cervical and other genital cancers are primarily caused by HPV, studies have demonstrated that HPV is also highly associated with oropharyngeal cancer. The purpose of this study is to understand the preventative behaviors of college-aged adults compared to the general population with regards to HPV. Preventative behaviors can include abstinence, HPV vaccination, reduction of sexual partners, mutual monogamy, and condom use. College aged adults, 18-22, were sampled every 3-4 months, and enrolled into the study before their sexual debut whenever possible. This will allow for analysis comparing of risk factors between college-aged adults and the general population. All participants provided saliva samples and completed a questionnaire at each visit. The questionnaire asks about social and sexual behavior, which assists in understanding rates and risks of infection as well as the preventative behaviors in which participants engage.

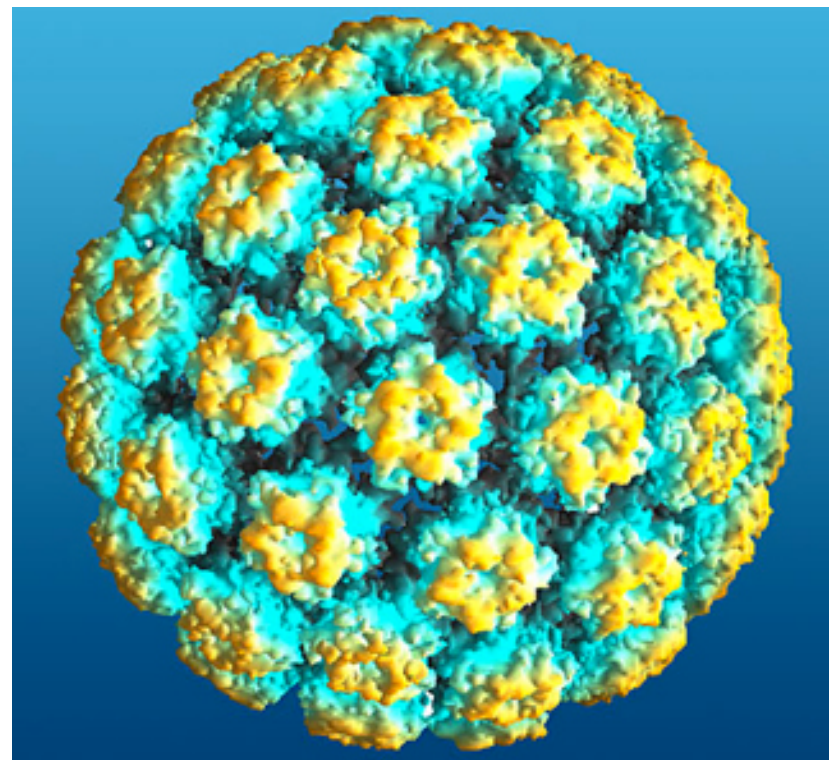
Introduction

Epidemiology: Over 100 different types of HPV have been identified, of which at least 40 can infect the genital area¹. Strains 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, and 59 are known to cause cancer². Nearly every cervical cancer is attributed to HPV infection, 90% of anal cancers, 60-90% of some head and neck cancers, and 40% of other genital cancers².

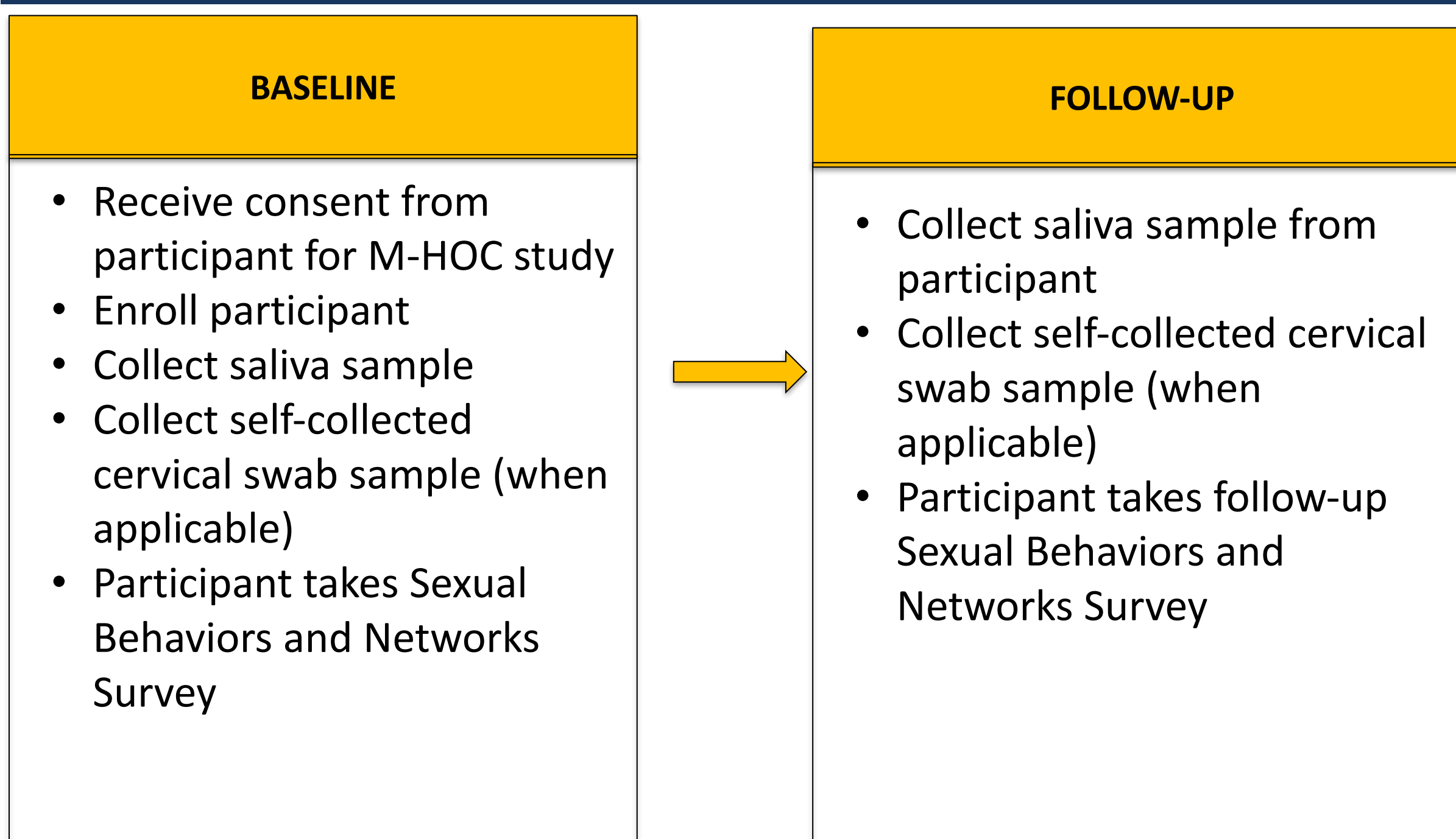
Symptoms: Most HPV infections are transient and asymptomatic, causing no clinical problems on the infected body¹. Studies have shown that 70% of new HPV infections clear within one year, and as many as 91% clear within two years¹.

Risk Factors: Number of sexual partners, age, personal contact with warts, damaged skin, and weakened immune systems.

Transmission: Skin-to-skin genital contact.



Methods



338 participants enrolled in the M-HOC study, in which they completed the Sexual Behaviors and Networks Survey at baseline.

Results

Rates of HPV Vaccination

	College Aged Vax	General population Vax	Total Participants
Biological Male	35 (30%)	2 (0.01%)	115
Biological Female	102 (46%)	25 (11%)	222
Total	137 (41%)	27 (0.08%)	337

HPV Testing in College Aged Students

	Tested (%)	Not Tested (%)	Total
Biological Male	10 (14%)	59 (86%)	69
Biological Female	33 (23%)	112 (77%)	145
Total	43 (20%)	171 (80%)	214

HPV Testing in General Population (%)

	Tested (%)	Not Tested (%)	Total
Biological Male	8 (18%)	37 (82%)	45
Biological Female	31 (40%)	46 (60%)	77
Total	38 (31%)	84 (69%)	122

STI Testing in College Aged Students (%)

	HIV	Syphilis	Gonorrhea	Total Participants
Biological Male	16 (23%)	13 (19%)	12 (17%)	69
Biological Female	36 (25%)	36 (25%)	39 (27%)	145
All Sexes	52 (24%)	49 (23%)	51 (24%)	214

Results

- A longitudinal study was conducted with 337 participants near the University of Michigan-- Ann Arbor. The 337 participants enrolled in the M-HOC study, in which they completed the Sexual Behaviors and Networks Survey at baseline.
- Out of the 337 participants:
 - 115 were biological males
 - 222 were biological females
- Out of the 337 participants:
 - 214 were college-age participants
 - 123 were general population participants

Conclusions

- College aged students have a higher vaccination rate when compared to the general population
- Biological females in the college-age and general population cohorts have higher rates of vaccination against HPV.
- When compared against the general population, college-age students have lower rates of testing for HPV infection.
- Within the college-age students cohort, participants across both biological sexes are reporting higher rates of testing for sexually transmitted infections when compared to testing for HPV.
- Biological females in both population cohorts, college-age students and general population, have higher rates of testing for HPV and other STI's than biological males.

Future Directions

- Continue collecting data through M-HOC to understand the sexual behaviors and preventative methods college-age students are using against HPV and other STI's
- Increase awareness surrounding HPV vaccination in both biological males and females
- Work with public health and healthcare officials in order to increase vaccination efforts and therefore increase HPV herd immunity near the University of Michigan, Ann Arbor.

Selected References

- CDC. (2004). *Prevention of Genital Human Papillomavirus Infection. Report to Congress.*
- Meza, R., Eisenberg, M. C., Brouwer, A. F., & Carey, T. E. (2015). Trends in HPV cervical and seroprevalence and associations between oral and genital infection and serum antibodies in NHANES 2003 – 2012. <http://doi.org/10.1186/s12879-015-1314-0>

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