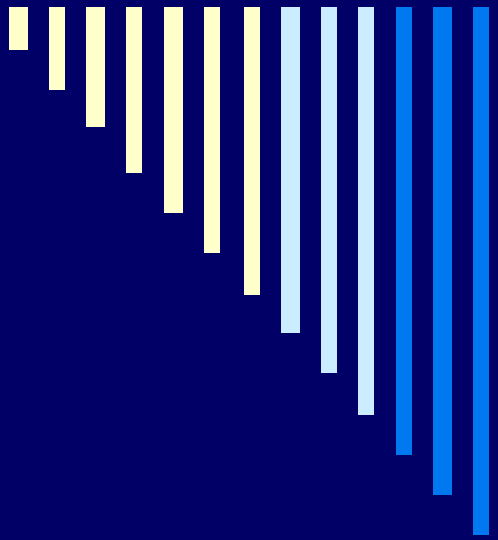


# Differences Between African American Adolescent Females With and Without Human Papillomavirus

**A study of high risk African American women, 15 to 21 years of age**

# Authors

- Richard A. Crosby (U of Kentucky)
- Ralph J. DiClemente (Emory)
- Gina M. Wingood (Emory)
- Laura F. Salazar (Emory)
- Eve Rose (Emory)
- Jessica Sales (Emory)

# Background

Given the likely event of limited financial resources to provide massive catch-up vaccinations to 13 to 26 years old females, public health practitioners may benefit young women by asking the basic question, “Who is most at-risk of HPV infection?”

# Objectives

1. we assessed the prevalence of HPV among a high-risk sample of young African American women (ages 15 to 21) recruited from clinical venues in a large metropolitan area of the Southern United States.

# Objectives

2. The study investigated differences in the prevalence of other biologically assessed STDs (Chlamydia, gonorrhea, and Trichomoniasis) between young women testing positive for one or more of 18 HPV subtypes and those testing negative for each subtype.

# Objectives

3. Several potential correlates of HPV prevalence were assessed by the use of Audio-Computer Assisted Self-Interviewing (A-CASI), including age, oral contraceptive use, and a host of sexual risk behaviors.

# Sample

297 African American adolescent females enrolled in a randomized trial of an HIV prevention program. Only data collected at baseline (before any intervention occurred) were used for this study. Recruitment sites were an urban, publicly funded, STD clinic, a teen clinic based in a large public hospital, and a family planning clinic

# Assay

Young women were asked to self-collect a vaginal swab that was evaluated for HPV (Gen-Probe Aptima Combo 2 Digene, Gaithersburg, MD). This assay detected 18 HPV strains: 5 low risk types 6,11,42,43,44 and 13 high risk types 16,18,31,33,35,39,45,51,52,56,58,59,68) -- swabs were delivered to the lab on the same day as data collection.

# More assays

They were then asked to self-collect a vaginal swab specimen that was subsequently evaluated for *T. Vaginalis*, *C. trachomatis*, and *N. gonorrhoeae*. *T. Vaginalis* was assayed using a non-commercial real-time PCR assay.

# Self-reported measures

- Frequency of engaging in penile-vaginal sex
- Frequency of engaging in penile-vaginal sex unprotected by a condom
- Number of penile-vaginal sex partners (including a lifetime measure)
- Engaging in any unprotected penile-vaginal sex (an inherently dichotomous measure)
- Having sex with male at 5 years older
- Having sex with males considered to be “casual” partners
- Current use of birth control pills

# Prevalence

Of the 297 adolescents, 44.8% tested positive for HPV.

About one of every seven (14.1%) adolescents tested positive for *C. trachomatis*.

*T. Vaginalis* was even more common (16.5%).

4.7% tested positive for *N. gonorrhoeae.*

# Differences

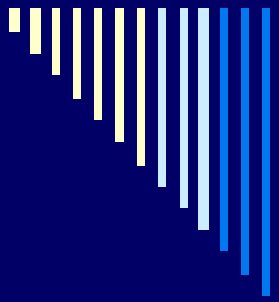
Adolescents testing positive were significantly younger. With each year of advancing age, the odds of testing positive for HPV declined by about 14% (odds ratio = .86, 95% CI = .74 - .99).

# Differences

A trend (*P*=.10) regarding a greater number (lifetime) of male sex partners for those testing negative could have been attributable to this significant difference in age. To further explore this possibility, we used logistic regression to calculate an age-adjusted odds ratio regarding the number of lifetime sex partners reported by young women. The finding (AOR = .99; 95% CI = .97-1.01) indicated that this trend diminished after controlling for age.

# Differences

- Current use of birth control pills was associated with HPV prevalence – with those using the pill being more likely to test positive for HPV (P = .043).
- To further explore this finding, an age-adjusted odds ratio was calculated (AOR = 2.14; 95% CI = 1.03 – 5.18).
- After controlling for frequency of sex, the association became non-significant (AOR = 2.32; 95% CI = .80-6.74).



# Differences

No other differences were found!

# Implications

The evidence suggests that the epidemiology of HPV prevalence is not comparable to the epidemiology of three other (and relatively common) STDs among this population of young African American women.

# Implications

Consistent with other studies we observed no protective effect associated with condom use.

This is not surprising for several reasons, including the high prevalence of HPV.

# Implications

Vaccination of young African American women attending public clinics, regardless of risk indicators, may be the most efficacious public health strategy regarding massive catch-up vaccination efforts.