Cognitive and emotional differences among HPV+ and HPV- men: Results of a pilot study of HPV in men in a natural history study

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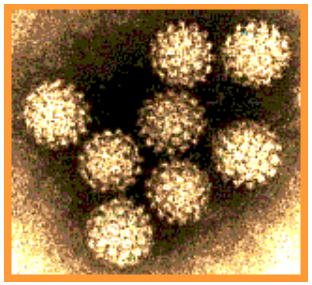
Background: HPV

- HPV is the most common STI in the world
- Over 100 strains of HPV



- 30-40 strains are sexually transmitted
- Low-risk (non-oncogenic, genital warts) vs. High-risk HPV strains (oncogenic)

Centers for Disease Control and Prevention. Genital HPV infection: CDC fact sheet. 2004. Available at: http://www.cdc.gov/std/HPV/STDFact-HPV.htm. Accessed September 24, 2007.

Background: HPV

- U.S. incidence ~ 6.2 million/year

- U.S. prevalence ~20 million
- >50% of sexually active US adults will be infected with HPV at some point
- >80% of sexually active women will have been infected by the virus by age 50

Centers for Disease Control and Prevention. Genital HPV infection: CDC fact sheet. 2004. Available at: http://www.cdc.gov/std/HPV/STDFact-HPV.htm. Accessed September 24, 2007.

HPV-Related Cancers in Men and Women

Cancer	% Assoc. with HPV
Cervical	>99%
Vaginal	50%
Vulvar	50%
Penile	>50%
Anal	>70%
Oropharyngeal	20%

Gonazalez Intxaurraga MA, Stankovic R, Sorli R, Trevisan G. Acta Dermatovenerol. 2002; 1:1-8.

Background: Cervical Cancer

- Worldwide:
  - 2nd leading cause of female cancer mortality
  - HPV prevalence ~ 440 million
  - Cervical cancer deaths ~ 250,000 per/yr
- U.S. Estimates for 2006:
  - 9,710 new cervical cancer cases
  - 3,700 cervical cancer deaths

World Health Organization. Human Papillomavirus. Available at: http://www.who.int/vaccine_research/diseases/viral_cancers/en/index3.html. Accessed October 15, 2007

American Cancer Society. Cancer Facts & Figures 2006. Available at: http://www.cancer.org/downloads/STT/CAFF2006PWSecured.pdf. Accessed October 15, 2007

Current HPV Research

- CDC Study of HPV in Women – 5 main themes (stigma, anger, fear, self-blame, powerlessness)
- Psychosocial reactions in males → the male role in prevention of cervical cancer
- CER Study - Cognitive and Emotional Responses in Men
  - To further our understanding of the cognitive and emotional responses to an HPV test result in men and how this influences their behavior
  - Information is necessary for the development of HPV educational messages as well as HPV vaccine dissemination strategies targeting both genders

Purpose

- CER Study: To examine differences among HPV+ and HPV- men enrolled in a pilot study examining Cognitive and Emotional Responses to an HPV Diagnosis in Men (The CER Study -- 1R01 CA123346-01)

- Pilot Study: To identify the development of a cognitive and emotional survey instrument for this unique population

Methodology

- Prospective CER study is part of a large natural history study of HPV in men. This study will involve administering four quantitative surveys to a total of 500 men every six months over a two year follow-up period

- Validation sample
  - N=30 (15 HPV+ men 15 HPV- men)

- Recruitment and enrollment of this population
  - Time 1 (males tested for HPV); Time 2 (tested again); Time 3 (receive test results and are recruited for this behavioral study)

- Pilot Study: Paper-and-Pencil
- CER Study: Computer-Assisted Survey Instrument (CASI)

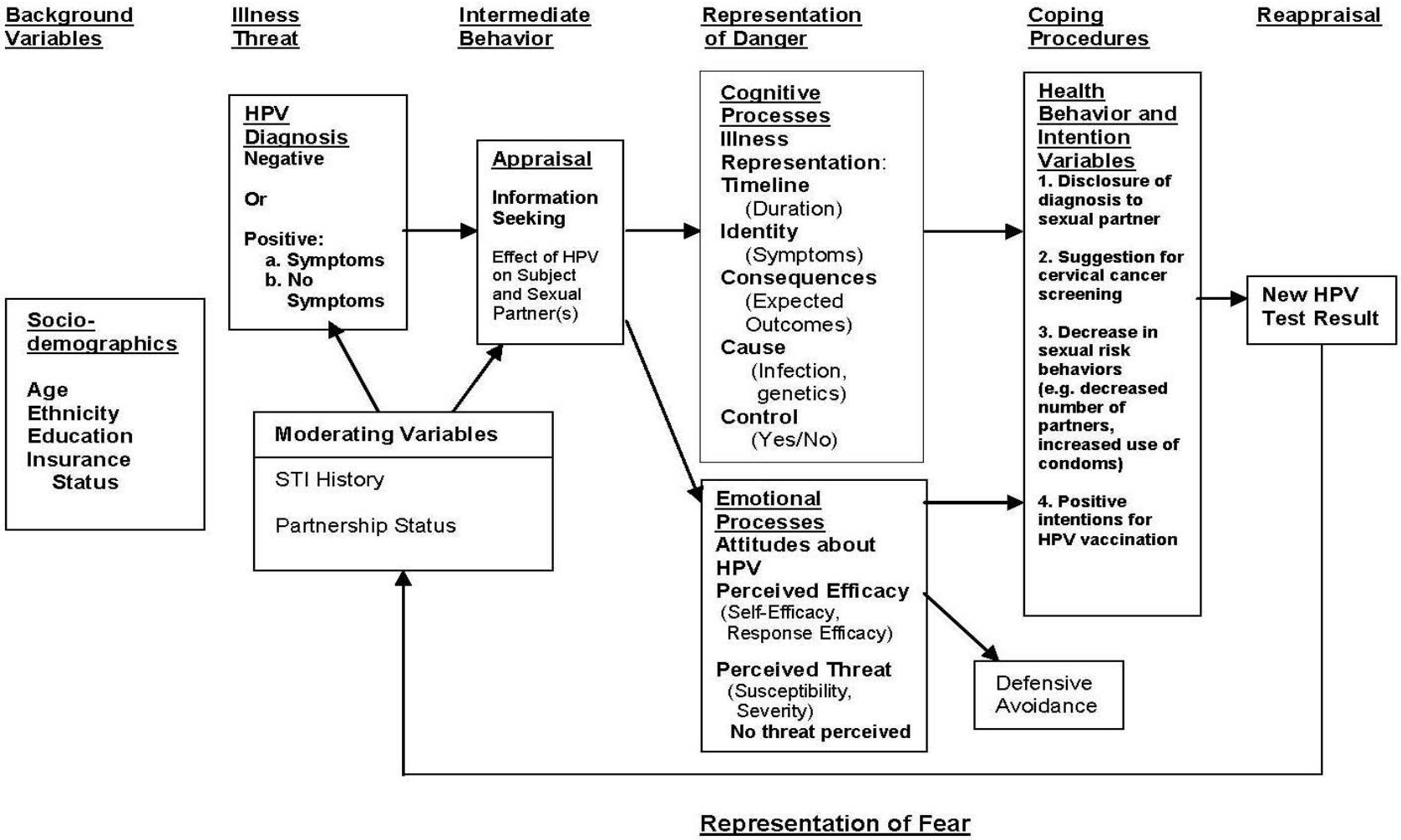
Methodology

- Instrument developed based on theoretical models
  - Parallel Processing Model (Leventhal)
  - Common Sense Model (revised by Leventhal)
  - Extended Parallel Processing Model (Witte)

- Constructs highlighted in this presentation:
  - Knowledge, Perceived threat, Response efficacy
  - Demographic variables

CER Study - Model

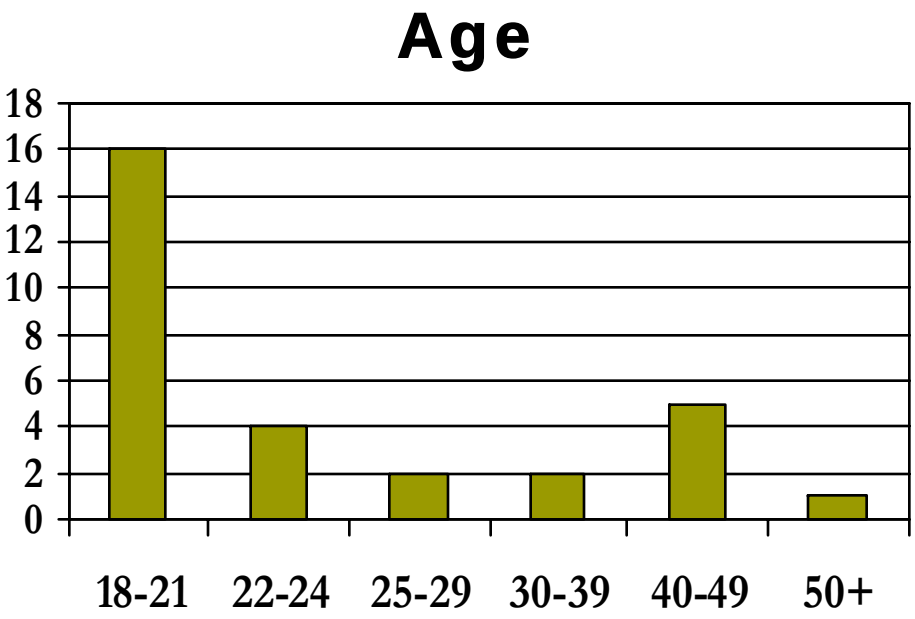
CER Study Model:
Application of Leventhal's Parallel Processing Model to an HPV Diagnosis in Men



CER Study - Measures

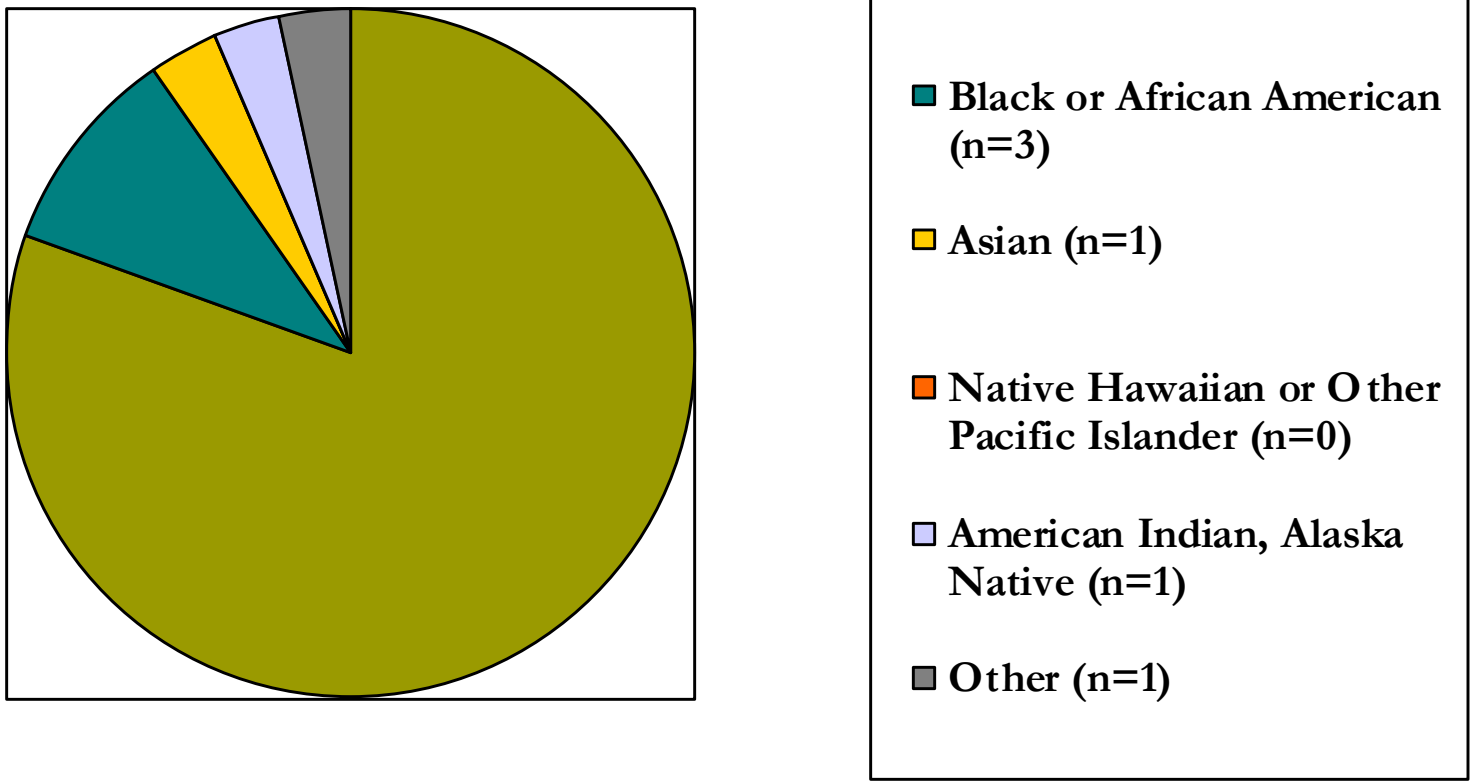
- Cognitive Responses
  - factors that help an individual understand what the illness or disease represents to them
- Emotional Responses
  - fear, threat to the individual, severity
- Behavioral Intentions & Behavioral Change
  - disclosure of test results to sexual partner(s), recommendations to sexual partner(s) to get screening Pap smears, intentions for HPV vaccinations

Results - Demographics



Education Level	N
High School Diploma or GED	1
Some college credit, no college degree	19
College undergraduate degree (i.e. BA, BS)	9
College Masters or Doctoral Degree (i.e. MSW, PhD, MD)	1

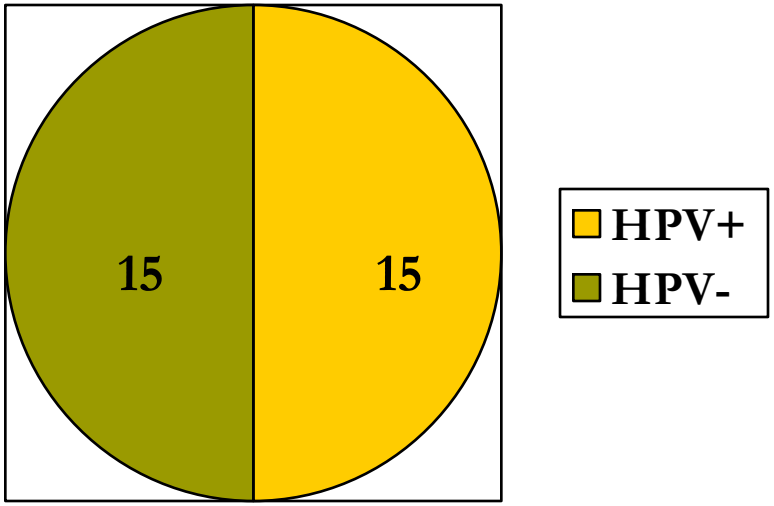
Results - Demographics



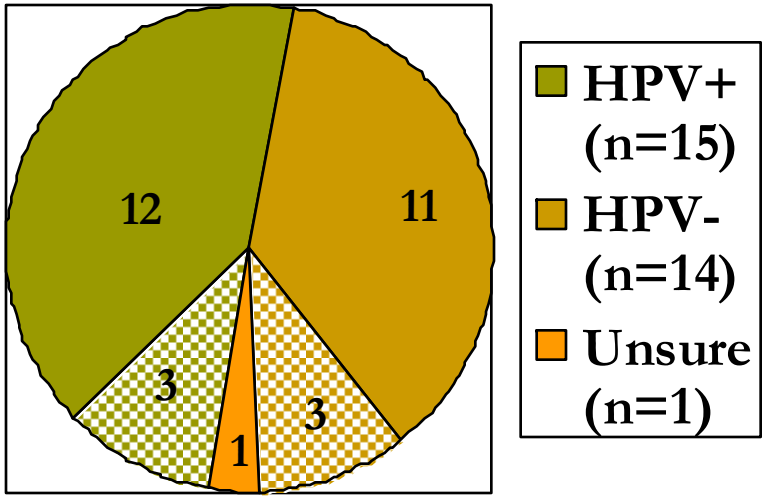
- **3 out of the 30 men reported themselves as Hispanic or Latino**

Results – HPV Dx

Lab Test Results



Self-Reported Results



- 3 out of 15 men reporting HPV+ were incorrect.
- 3 out of 14 men reporting HPV- were incorrect.
- 1 man reporting "unsure" was incorrect.

Results - Knowledge

- Knowledge Score (0 – 100)
  - Higher score = Greater knowledge
  - 20 items (True, False, Not Sure)
  - Mean = 73.85 (SD 3.45)
  - Range = 15-95
  - No significant difference between HPV+ and HPV- men

"HPV causes herpes."

"You can have HPV without knowing it."

"Antibiotics can cure HPV."

Results – Perceived Threat

- Perceived Threat Score (0-40)
  - Higher score = Greater perceived threat
  - 8 items (Strongly Agree to Strongly Disagree)
  - Mean = 17.13 (SD 5.52)
  - Range = 7-29
  - No significant difference between HPV+ and HPV- men

"Having an abnormal Pap test is a serious threat to my partner's health."

"In the time since I received my most recent HPV test result, I have been concerned about getting another STI."

"I am concerned that I will get genital warts."

Results – Response Efficacy

- Response Efficacy Score (0-25)
  - Higher Score = Greater Response Efficacy
  - 5 items (Strongly Agree to Strongly Disagree)
  - Mean = 21.50 (SD 3.78)
  - Range = 11-25
  - HPV- men reported greater response efficacy (23.7) than HPV+ men (19.9) (p=.02)

"By getting vaccinated against HPV when it becomes available for men I could reduce the risk of my sexual partner getting HPV."

"Suggestions that my partner have a Pap test helps prevent her form getting cervical cancer."

"By using condoms I could reduce the risk of spreading/getting HPV."

Discussion

- Only the construct ***response efficacy*** demonstrated significant differences between HPV+ and HPV- men
- High level of knowledge among these men
- We anticipate results will change over time
- Current study status:
  - Approx. 80 men have completed Survey #1 - Results being presented at IPV (Beijing)
  - Administering 2nd survey

Future Implications

- Men's cognitive/emotional responses may be moderated by their ability to accurately report their own HPV status. Future research should address this issue.
- Importance of clear and consistent educational messages to alleviate confusion and adverse psychosocial responses
- Further clinical trials on HPV vaccines (including male samples) and associated educational messages
- HPV's role in other cancers (i.e. oral cancer)

Conclusion

- Male partners can play a critical role in cervical cancer prevention efforts
- Understanding men's knowledge and appraisal processes concerning an HPV diagnosis can assist in prevention efforts to decrease HPV infections and cervical cancer rates
  - Disclosure, decreasing risky sexual behaviors (number of partners, condom use, etc.), suggesting cervical cancer screening and HPV vaccine with partners

Questions?

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