COLLEGE WOMEN'S PERCEPTIONS OF HPV VACCINES AND THEIR PERCEIVED BARRIERS TO ADOPTION OF VACCINATION

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Cervical Cancer

- In the U.S., 12,710 incident cases of cervical cancer in 2011 and 4,290 women were to die from it, with 1 in 147 women developing cervical cancer during their lifetime (American Cancer Society, 2011a)
- Globally, it's the 3rd most common cancer affecting 529,800 each year and a 4th leading cause of deaths (ACS, 2011b)
- Human Papillomavirus (HPV) was found to be a necessary cause of cervical cancer (Walboomers et al, 1999)
- Other HPV related cancer: vulvar (1,500 cases/year), vaginal (500), penile (800), anal (2,700 females/1,500 males) & head and neck cancers* (1,500/5,600) (CDC, 2012)

*HPV is associated with only some of them - most of head/neck cancers are related to smoking and heavy drinking.

Human Papillomavirus (HPV)

- HPV: Most common sexually transmitted infection (STI)
- About 20 million Americans are currently infected with HPV and 6 million more people become infected each year. At least 50% of sexually active men and women get infected at some point in life (CDC, 2012)
- Most infections are said to clear spontaneously within 1 to 2 years but some HPV infections can persist for 10+ years (Dempsey 2008)
- Low risk types can cause genital warts (Type 6/11) and high risk types can lead to cancers of the cervix etc. (Type 16/18)
- HPV16/18 cause approximately 70% of cervical cancers worldwide
- Overall prevalence of HPV infection among US women was 26.8% (14 – 59 yrs) while women in the 20-24 years of age had the highest prevalence (44.8%) followed by 30-39 yr olds (27.5%), 25-29 (27.4%), 40-49 (25.2%), 14-19 (24.5%), and 50-59 (19.6%) (Dunne et al., 2007)

HPV Vaccines for Protection against Cervical Cancer

- Two HPV vaccines approved for use in girls/women (also for men in 2009) and intent was to vaccinate young girls before they become sexually active or while they are naïve to HPV vaccine type infections:
  - Gardasil® (2006): protects against HPV types 6, 11, 16 & 18, for females aged 9 -26 (Merck & Co)
  - Cervarix® (2009): protects against HPV types 16 & 18, for females aged 10-25 years (GlaxoSmithKline)
- Recommended for 3 shots over 6 months by ACIP, AAP, ACOG, ACS*

*ACIP - the National Advisory Committee on Immunization Practices, AAP - American Academy of Pediatrics, ACOG - the American College of Obstetricians and Gynecologists, ACS - American Cancer Society.

About HPV Vaccines

- Demonstrated high efficacy (90% - 100%) in preventing pre-cancers
- Generally safe and use is monitored by various systems (e.g., Vaccine Adverse Event Reporting System by CDC & FDA)
- Highly efficacious for up to 8.5 years (Rowhani-Rahbar et al., 2009)
- HPV vaccine may also protect against anal HPV infections -> could potentially prevent anal cancer (Kreimer et al., 2011a)
- Fewer than 3 doses of HPV vaccines may be as effective -> become more affordable, convenient (Kreimer et al., 2011b)
- Reported cross-protection against some HPV types other than vaccine types (Paavonen et al., 2009, Kreimer et al., 2011a)
- Demonstrated no significant therapeutic effect if women are already infected with HPV vaccine types. Continuing PAP tests required

Overview of HPV Study Design

- IRB approved, cross sectional in design
- Target population: college female students (>= 18 years) recruited from undergraduate courses – UH Manoa (4.8 - 80.3% response rate)
- Data collection: Sep – Dec 2010
- Mixed methods design (collected quantitative and qualitative data)
- Self-administered anonymous (secured) online survey
- 65 items including stage of HPV vaccine adoption, intension and opportunity, reason for no vaccination, doctor recommendation, HPV related knowledge, perceived barrier, perceived benefit, perceived threat (susceptibility and severity), self-efficacy, cues to action, background and sexual history

Characteristics of Study Participants

- Age group

  18-20 year olds: 64%, 21-23 year olds: 19%,

  24-26 year olds: 7% and 27+ year olds: 10%

- College status

  1st year students: 31%, 2nd year students: 18%,

  3rd year students: 23%, 4th year students: 13%,

  5th year students: 7% and Graduate students: 8%

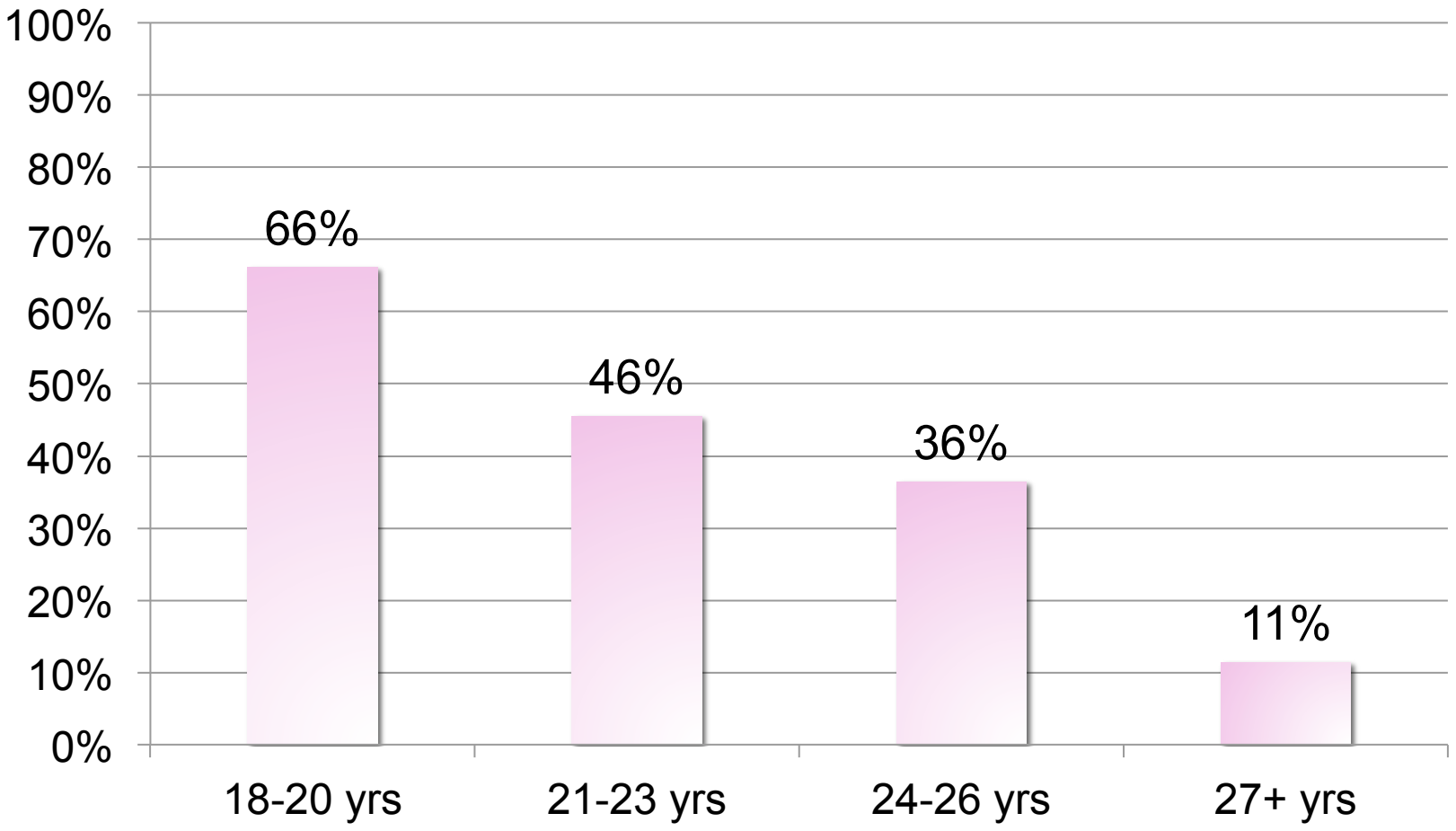
- Ethnicity

  White: 22%, Japanese: 19%, Mixed: 18%, Hawaiian/ Part Hawaiian: 11%, Filipino: 11%, Chinese: 7%, Pacific Islanders (other than Hawaiian): 4%, Korean: 3%, Hispanic: 3%, Black: 1% and Other: 1%

Characteristics of Study Participants (Cont.)

- Health insurance: 90% reported having health insurance (including 73% with private insurance)
- Relationship status: 47% single, 46% committed/ engaged, 6% married and 1% other (separated etc.)
- Sexual relations: 53% were currently in a sexual relationship
- Number of sex partners (past year): 30% with no partner (0), 45% with 1 partner and 25% with 2+ partners
- Vaccination rate: 54% reported receiving HPV vaccination

Vaccination Rates by Age Group



Stage of Vaccine Adoption

College women were classified into one of the 6 stages based on their response in order to understand barriers and design stage based health communication strategies:

- Stage 1 (*Never heard of HPV vaccine*): 7.3% (n=26)
- Stage 2 (*I have never thought about getting vaccinated*): 9.0% (n=32)
- Stage 3 (*I am undecided about getting vaccinated*): 15.1% (n=54)
- Stage 4 (*I have decided I don't want to get vaccinated*): 8.4% (n=30)
- Stage 5 (*I have decided I do want to get vaccinated*): 6.4% (n=23)
- Stage 6 (*Received vaccination*): 53.8% (n=192)

Stage model is based on Precaution Adoption Process Model (PAPM) proposed by Weinstein (1988)

College Women's Perceived Barriers

There are many things that are perceived as barriers to HPV vaccination. We found the following items to be significant barriers for unvaccinated college women:

- ✓Fear of possible side effects
- ✓Too busy or not having enough time
- ✓Lack of motivation
- ✓Not sexually active

However, Fear of pain (from shot), Lack of insurance, Cultural or religious belief were not.

College Women's HPV Knowledge Level

- HPV related true-false knowledge quiz (14 items) was given. We found 65% of college women knew HPV is sexually transmitted and 58% knew HPV vaccine protects against cervical cancer.
- High scored knowledge items:
  - Certain types of HPV can lead to cervical cancer (93%)
  - A woman who received the HPV vaccine still has to use condoms during sexual intercourse (93%)
- Low scored knowledge items:
  - HPV infects both men and women equally (20%)
  - HPV cannot be treated with antibiotics (38%)
  - HPV can cause genital warts (42%)

Reasons for Vaccine Disinterest: Qualitative Analysis

- 148 (90%) women responded to open-ended question asking "*if you have not vaccinated, what is the main reason you would not/did not receive HPV vaccination?*"
- 196 units of reasons were identified
- 7 categories emerged:
  - Lack of perceived value and trust (28.6% by unit count)
  - Lack of information (24.0%)
  - Eligibility issues (13.2%)
  - Lack of time and opportunity (11.7%)
  - Access issues (9.6%)
  - Lack of recommendations (8.2%)
  - Fear of side effects (4.6%)

Importance of Doctor Recommendation

- Having doctor recommendation is a key to adoption of HPV vaccination.

- "*If you have received HPV vaccination already, was it because your doctor recommended it?*"
  - 88.5% (170 out of 192) of vaccinated women said Yes

- "*Would you get the HPV vaccination if your doctor or other health professional were to recommend it?*"
  - 79.4% (131 out of 165) of unvaccinated women said Yes

Recommendations

- Encourage newly enrolled college women with no medical home or prior ob-gyns visits to have the first “well-women” visit.
- Provide a free first visit to the women’s health clinic on campus if cost is the issue.
- Disseminate accurate and timely information about HPV, HPV vaccines to prevent misinformation and disinformation from spreading when peers communicate.
- Conduct educational outreach by stages:
  - Stage 1 (never heard of): Provide facts about HPV, consequences of HPV infection, basic information about HPV vaccines and current recommendations. Additional information includes costs, whom they can talk to/discuss, or where to get the HPV shots.

Recommendations (Cont.)

- Stage 2 (never thought about): Provide information emphasizing the ubiquitous risk of HPV infection and how HPV vaccine could provide protection.
- Stage 3 (undecided): Provide information focusing on the benefits of HPV vaccine, emphasizing vaccine effectiveness and safety issues in order to reduce uncertainties college woman may have.
- Stage 4 (don't want): Provide information focusing on vaccine effectiveness and safety issues, emphasizing prevention of reinfection for those who had previous exposure to HPV.
- Stage 5 (do want): Provide information focusing on facilitation of vaccination such as where to receive the shots, insurance coverage and facility/ doctor's office hours. Help with making appointments.

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Questions, suggestions or comments?