

ABSTRACT

The research identifies the human papillomavirus (HPV) as an emerging major health issue affecting males and females as young as 9 years old. In the U.S. 42.5% females 14–59 years have the high and low risk types. HPV is transmitted during sexual contact and is associated with vulvar cancer, penile cancer, oral cancer, anal cancer, and genital warts in both sexes. An available vaccine prevents many types of HPV infections amongst males and females, given in three doses over a six-month time span. Research has proven the vaccination to be most effective with adherences of all three shots; and many young people are not completing the doses. This research surveys college students on their knowledge and completion of the HPV vaccine, to understand barriers and facilitators to vaccination. Data on the risk behaviors that the students engage in and their perceived risks of HPV will be shared to further increase vaccine completion and decrease HPV amongst this high risk population.

INTRODUCTION

Genital human papillomavirus (HPV) is the most common sexually transmitted infection (STI) in the United States with an estimated 6.2 million new HPV infections, occurring every year.¹

An estimated 80% of sexually active women will acquire genital HPV by the age of 50 years.¹

The majority of infections are benign and cause no symptoms, persistent infection with high-risk HPV (hr-HPV) types can cause cervical cancers in women and other types of anogenital cancers among both men and women.¹

HPV vaccine presents an opportunity to reduce the burden of cervical cancer and other conditions caused by HPV types 6, 11, 16, and 18.²

HPV vaccine is indicated for adolescent girls and young women aged 9–26 years and is given in 3 injections.²

The Advisory Committee on Immunization Practices recommends the HPV vaccine but it is not required by US state law.³

The highest rates of genital HPV infection are found in adults between the ages of 18 and 28.

Most college students are between the ages of 18 and 25.

Growing research has related psychosocial, interpersonal, organizational, and sociodemographic characteristics that influence HPV vaccinations and acceptance.³

STIs cost the U.S. health care system \$17 billion every year—and cost individuals even more in immediate and life-long health consequences.⁴

MATERIALS & METHODS

Sample
Participants (n = 1,629) in this study were undergraduate students enrolled in a general education, required health education course at a large public university in North Carolina during Fall, 2010. The sample was a nonrandomized convenience sample.

Data Collection
This questionnaire was included on the "Health 1000 Survey" which was available online to all students enrolled in the class, and were offered extra credit for their optional, voluntary participation. Participants received a web address where they went to complete the confidential survey questionnaire. Responses to the survey were anonymous. A total of 1,629 students completed the questionnaire.

Instrument
The 40-item survey questionnaire included 7 demographic items (age, gender, race/ethnicity, class standing, marital status, and current type of residence), and items on sexual behavior, risk behaviors, HPV, knowledge of the HPV vaccines, oral hygiene, and some personal information. The instrument was checked for content and face validity by a group of experts in the field of college health, with minor revisions.

RESULTS

Results: Quantitative Instrument

N = 1073 college students self-reported that have NOT received all three doses of the Gardasil HPV vaccination
Students class standing identified as:
Freshmen: 61.4%
Sophomores: 25.4%
Junior: 10%
Senior: 2.8%

92% of the college students self-reported that they have never been diagnosed with HPV

The mean number of "different partners you have received oral sex from" (5.87%) and "different partners you have performed oral sex on" (4.48%) as estimated for their lifetime.

54.2% of the students were 18 years old

63% were females

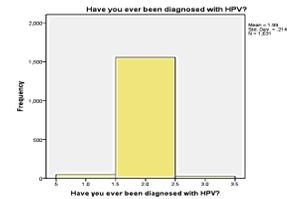
94.1% were heterosexual

73.1% of the students were white-not Hispanic

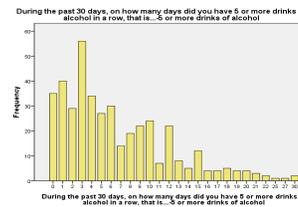
96.7% of the students were single-never married

62.8% of the students lived on the college dormitory or residence hall

Sexual Act	Risky Sexual Behavior					
	Number of partners in lifetime					
	0-10	11-20	21-30	31-40	41 and Above	Mean
French/ open mouth kissing	62.7%	25.5%	7.2%	3%	1.6%	13.76
Vaginal Sexual Intercourse	88.4%	7.9%	1.8%	0.8%	1.1%	5.3
Performed oral sex	90.4%	4.4%	2.9%	0.4%	1.9%	4.48
Received oral sex	88%	8%	1.5%	0.6%	1.9%	5.87



Have you received the complete (all three) shots HPV vaccine (also known as Gardasil)?	What is your class standing?	What is your class standing?				Total
		freshman	sophomore	junior	senior	
Yes	Count	302	130	34	8	474
Yes	Percentage	28.2%	23.4%	6.1%	1.1%	26.1%
No	Count	802	373	107	30	1312
No	Percentage	75.0%	70.0%	93.9%	98.9%	73.9%
Total	Count	1104	503	141	38	1686
Total	Percentage	100.0%	100.0%	100.0%	100.0%	100.0%



DISCUSSION

Limitations

Findings and implications for this study should be interpreted cautiously and limits acknowledged. The sample of college freshman was a convenience sample from one university and may not be generalizable to other college populations. Large random national samples are needed to replicate this study's findings. Second, female respondents are overrepresented in the study. However, it should be pointed out that at both where the study was conducted and nationwide, women now account for a disproportionate share of college enrollments, approaching 60% (Aud et al., 2010). Consequently, an equal gender representation in a random sample of college students is not likely, nor is it representative of most US institutions of higher education. Third, self-report measures are subject to reporting bias and respondents answering in an untruthful manner. Additionally, the term "excessive" on the instrumentation was not defined by the researchers but was self defined by the respondents. The researchers acknowledge that the term and meaning of excessive is a fairly subjective term. Future assessment or refinement of the instrumentation could include an open-ended item asking respondents to quantify what they consider to be "excessive". Finally, extra-credit was offered to the students for completion of the survey, which may have impacted response validity.

Implications and Next Steps

Findings of the current research confirm the need for targeted HPV education and prevention programs for college students. Innovative technology-based prevention such as safety campaigns on social networking sites (Facebook, Twitter, etc.) and text messaging campaigns that address health education, barrier methods and information on where to get vaccinated could be effective. To promote safer sex practices, screenings and vaccinations, campus-based prevention programs and personal health course content are needed to address these issues among college students. Additionally, the university Student health center should work as an institution to provide free services to the students to provide education and vaccinations.

Future Research

Future research could serve to provide a clearer picture of the relationships of a college age students with HPV and HPV vaccination rates. The Future studies should also investigate effective measures taken by college students to end risky behaviors and prevent the transmission of STDs as well as HPV.

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