

Incarcerated Adolescents' Attitudes Toward Human Papillomavirus Vaccine: Report From a Juvenile Facility in Kansas

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Introduction

Adolescents detained in jails have notably higher sexual health risks than the general population that put them in the path of human papillomavirus (HPV) and cancer risk.^{1–3} Detained adolescents are normally awaiting trial or sentencing and usually have shorter jail stays than sentenced adolescents.⁴ Low HPV vaccine coverage in the United States, especially in a Kansas study location, necessitates strategies to increase vaccination for those most at risk.⁵ Among adolescents and parents of adolescents in the general population, positive attitudes toward the vaccine have been associated with greater HPV and vaccine knowledge and clear physician recommendations.^{6–8} However, little is known about vaccine attitudes among incarcerated adolescents. This study assessed incarcerated adolescents' HPV knowledge, vaccine experience, and whether they would accept HPV vaccinations in jail if offered by a local health department.

Methods

Study Setting and Time Frame

This cross-sectional study was conducted from February 2017 to February 2018 with incarcerated adolescents at a single urban county jail in Kansas City, Kansas. The jail has a 48-bed capacity for juveniles, aged 10 to 18 years. HPV vaccination is not currently administered to adolescents as part of the medical services provided. As part of this study, incarcerated adolescents' attitudes about receiving HPV vaccinations at the jail were explored, separate from jail medical services. A local health department offered vaccinations to adolescents given interest and parental/guardian consent. Institutional review board approval was obtained to conduct surveys with adolescents and check health department records for vaccine status. HPV vaccinations were approved through health department protocols.

Recruitment and Procedures

Jail staff recruited a convenience sample of adolescents to participate in a voluntary survey about HPV. For interested adolescents younger than 18 years, jail staff collected parent/guardian contact information, and a study team member contacted parents/guardians by phone to explain the study's purpose and obtain verbal consent. If adolescents were wards of the state, social workers or probation officers were contacted. Written assent was obtained when adolescents were enrolled.

A team member visited each participant in the jail to administer the survey. When obtaining assent, the interviewer shared basic information about HPV, including that it is a viral infection, some strains cause genital warts or cervical cancer, and vaccines can help protect against strains that are most likely to cause genital warts or cervical cancer.

Interviewer-administered, paper-and-pencil surveys were scheduled for 30 minutes, during which the interviewer took thorough notes on adolescents' responses to open-ended questions. This was done to facilitate a discussion about HPV and avoid potential literacy issues.

Adolescents then received more thorough HPV and vaccine education to correct misconceptions, including how the virus is spread (ie, vaginal, anal, and/or oral sex and skin-to-skin contact), cancers to which HPV is linked (cervical, oropharyngeal, anal, vulvar, vaginal, and penile), how to prevent becoming infected, and current HPV vaccine recommendations.

At the first jail visit, a team member left HPV vaccine consent forms and material (posters and fact sheets) from

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a local health department in the juvenile visitation rooms. This was done so that parents/guardians visiting could consent for their child to be vaccinated at no cost by a health department nurse while incarcerated. Vaccinations were covered by funding through the Vaccines for Children Program offered by the Centers for Disease Control and Prevention. Jail intake officers told the team member the child's name if parents/guardians completed a consent form. Names were then given to a health department nurse to look up in an immunization record database to verify if adolescents had received any vaccine dose previously. At this jail, it was the responsibility of the health department to provide vaccines.

Survey Instrument and Measures

There were 11 total items in the survey, including 4 demographic questions and 7 open-ended questions about HPV vaccine.⁹ Three open-ended questions assessed knowledge and experiences with HPV and the vaccine. Study staff developed 4 open-ended questions to assess willingness and personal barriers to receiving the vaccine in jail.

The question, "Before today, what did you know about HPV or human papillomavirus?" assessed HPV knowledge. Experiences with having HPV or getting the vaccine were assessed with, "Has a doctor or nurse ever told you that you have HPV?" and "Have you ever gotten the HPV vaccine?" After completing a survey, participants' names were given to a health department nurse to look up in an immunization database to crosscheck if any adolescents had received doses of HPV vaccine at the health department previously.

Willingness and barriers to getting the vaccine in jail were assessed with 4 questions: "If we were going to offer the HPV vaccine in the juvenile detention facility, do you think people would be interested in getting it?" "What do you think people your age would fear about getting the HPV vaccine?" "What do you think people your age would fear about getting any vaccines or immunizations in a juvenile facility?" "What would make people your age more comfortable about getting vaccines or immunizations in a juvenile facility?"

Data Analysis

Frequencies and percentages of demographic characteristics were tabulated in SAS Studio version 3.6. For open-ended questions, we used an inductive, summative content analysis approach.¹⁰ Two members of the study team independently reviewed responses to each open-ended question and grouped the responses into categories based on repeated key terms or ideas, with anomalous or discordant responses being noted separately. The group

as a whole then reviewed and came to agreement on the categorization of responses and totaled the responses for comparison.

Ethical Approval and Informed Consent

This study was approved by the University of Kansas Medical Center Institutional Review Board (STUDY00002769). Verbal consent was obtained from parents or guardians before adolescents participated. Dates and times of consent were recorded on verbal consent forms approved by the Kansas University Medical Center Institutional Review Board. Written informed assent was obtained from adolescents before participation.

Results

There were 216 adolescents incarcerated during the 12 months when surveys were conducted (average of 18 adolescents per month). Of the 216 adolescents incarcerated, 97 provided jail staff with parent/guardian contact information. Parent/guardian consent was obtained for 56 participants. Of those, 46 (46/216, 21.3%) completed the survey and were included in the data reported here. The study team was unable to obtain consent from parents/guardians because of failure to reach them before visiting the jail, non-working phone numbers, they declined, or their child had already left the jail.

The average age of participants was 16.5 years (standard deviation = 1.09, range = 13-17 years), most were male (39, 85%), and half (23, 50%) were black (Table 1). In the fiscal year 2017, the juvenile correctional facility population in Kansas was on average 17.3 years old (range = 13-21 years), 37.4% were black, and 95.5% were male.¹¹ Table 1 also displays the distributions of responses to "Has a doctor or nurse ever told you that you have HPV?" and "Have you ever gotten the HPV vaccine?" Most adolescents (43, 93.4%) said that they have never been told they have HPV and half (23, 50%) said they have not received the HPV vaccine. According to the health department's immunization records, 32 (69%) had received one or more vaccine doses. Over a 12-month period, health department nurses vaccinated 2 male adolescents at the jail.

HPV Knowledge

Table 2 summarizes themes from responses to the HPV knowledge question, "Before today, what did you know about HPV?" The most frequent responses to this question were "Nothing" or "Never heard of it" (38, 83%). There was limited or incorrect knowledge of what HPV

Table 1. Demographic Characteristics of Incarcerated Adolescents, N = 46.

| Variable | n |
|--|-------------|
| Age, mean (SD) | 16.5 (1.05) |
| Gender ^a | |
| Male | 39 |
| Female | 5 |
| Other | 1 |
| Race ^b | |
| White | 7 |
| Black | 23 |
| Asian and Pacific Islander | 2 |
| American Indian or Alaska Native | 5 |
| Biracial | 8 |
| Ethnicity ^c | 12 |
| Hispanic | |
| Non-Hispanic | 31 |
| HPV and vaccine experience | |
| Has a doctor or nurse ever told you that you have HPV? | |
| Yes | 0 |
| No | 43 |
| Do not know | 3 |
| Have you ever gotten the HPV vaccine? | |
| Yes ^d | 15 |
| No | 23 |
| Do not know | 8 |
| Health department HPV vaccine verification | |
| No doses | 13 |
| One or more doses | 32 |
| Not in immunization record system | 1 |

Abbreviations: SD, standard deviation; HPV, human papillomavirus.

^aOne missing value for gender.

^bOne missing value for race.

^cThree missing values for ethnicity.

^dOut of the 15 who said they had received the vaccine, 4 reported that they thought they had received it, but could not recall details about it or were not exactly sure if what they had received was HPV vaccine.

was, how infection occurred, and for what purpose the vaccine was given.

Attitudes Toward Receiving HPV Vaccine in Jail

The interviewer first asked, "If we were going to offer the HPV vaccine in the juvenile detention facility, do you think people would be interested in getting it?" (Table 3). Most adolescents indicated that others in jail would accept the vaccine if offered (38, 83%). Interest in the vaccine was partly tied to wanting to prevent HPV infection, but the vaccine was also viewed as screening or treatment for HPV. Concerns about the vaccine

included side effects (4, 8.6%), confidentiality (5, 10.8%), and pain from needles (14, 30.4%). Almost half of adolescents (22, 47.8%) indicated that knowing more about the vaccine and its benefits would make them feel more comfortable with receiving it in jail.

Discussion

With sexually transmitted infections on the rise in the United States, with half of new cases each year occurring in adolescents ages 15 to 24 years, it is important for pediatric clinicians to consider unique ways of managing this growing epidemic, especially among high-risk adolescents.¹² Of particular concern is the continual rise of HPV-linked oropharyngeal cancers among men and women, with men being more than twice as likely to be affected.¹³ HPV vaccinations provide powerful and safe protection against high-risk strains of HPV and subsequently, cancer morbidities.^{6-8,12} Juvenile detention facilities provide critical opportunities to administer vaccinations while adolescents await trial or sentencing.¹⁴

Before receiving confirmation that most adolescents in our sample had received one or more doses of HPV vaccine before incarceration, many (38, 83%) thought there would be interest in the vaccine if offered in jail. Furthermore, a health department nurse vaccinated 2 adolescents, suggesting some motivation and willingness to be vaccinated in jail. Although most adolescents surveyed were male, and low HPV knowledge could be partly attributed to low incorporation of 2011 HPV vaccine recommendations for males aged 11 to 12 years in pediatric practices, it is also likely that high-risk adolescents moving through jails do not have strong connections to health care systems.³ Yet in this sample, many adolescents did not know that they had previously received some dose of the vaccine, perhaps suggesting more consistent contact with the local health department. Leveraging partnerships between health departments and jails in particular could improve HPV knowledge and vaccination among this population, especially since health departments have been crucial in administering HPV vaccinations to communities.¹⁵

These findings and adolescents' low HPV knowledge contribute to the literature by providing pediatric clinicians with some perspective on the HPV vaccine from a high-risk sample of incarcerated adolescents. These perspectives could encourage partnerships between pediatric clinicians and juvenile detention facilities for implementation of jail-based HPV education and vaccinations. In fact, 51% of pediatric residency programs in the United States include training in a juvenile justice facility, perhaps offering opportunities to provide HPV vaccinations for incarcerated youth.¹⁶

Table 2. HPV Knowledge: Summary of Themes.

What do you know about HPV or human papillomavirus?

Correct information

“That you can get cancer. That it can come from sex or oral sex.”

“It’s spread by sex. Don’t remember much else.”

“My mom said something about it having to do with cancer.”

Nothing. Never heard of it

“I’ve heard of it but don’t know anything.”

“Nothing at all.”

“I’ve heard of it, but don’t remember what it is.”

Information and misinformation

“Don’t really know that much about it. Is it like—he [father’s friend] said it was something like people are born with and they never know they have it.”

“Spread by cough and stuff like that.”

I got the shot, but

“I just know I got a shot for it, but I don’t know the long-term meaning of that.”

“I took shots for it, but didn’t know what it was for.”

“HPV stands for human papillomavirus. It really doesn’t show up on males, ie, you don’t have the symptoms, you won’t necessarily know you have it.”

Table 3. Attitudes About Receiving HPV Vaccine in Jail: Summary of Themes.

If we were going to offer the HPV vaccine in the juvenile detention facility, do you think people would be interested in getting it?

Prevention

“Probably. I’d never want to get it [HPV] so I’d want to prevent it.”

“Yeah because I’m pretty sure people wouldn’t want warts or cancer.”

Screening

“Probably. People might want to get checked up.”

“Yeah, but I don’t like needles unless it’s tattoos. If people think they had something, they’d want to get it. The first thing I do if I think I got something is I’m gonna go get checked.”

Treatment

“Yeah because people probably think they have it [HPV] or don’t know they have it.”

“Yeah because it’s a cure for cancer. I’d get it because my grandma died from cancer.”

What do you think people your age would fear about getting the HPV vaccine?

Confidentiality

“Personally, it would change my life if I knew that I had it. Weird to know that you had a disease that you could’ve protected yourself from. I’d be fearful of spreading it to others. Nobody wants to be known as the person who has HPV.”

Side effects

“I don’t know, if they haven’t heard about it and if there are side effects to it.”

“Them getting sick off of it. Weird things happening to their body.”

Pain of needles

“Never knowing about HPV and some don’t like needles or the pinch of pain.”

“Probably the needle. The fear of pain. I’m not afraid as long as I’m healthy.”

What would make people your age more comfortable about getting vaccines or immunizations in a juvenile facility?

Knowing the vaccine helps

“More knowledge about the thing that’s being vaccinated for and if the vaccine helps.”

“If you talk to them and let them know that shots aren’t bad. Tell them that vaccines protect and prevent disease.”

“Knowing more about what the shot is. Nurses taking the time to explain what it is.”

Abbreviation: HPV, human papillomavirus.

There were several limitations of this study. First, there was a low response rate of adolescents surveyed, which could be attributed to failure to contact parents/guardians for consent or adolescents’ release. There

could have also been disinterest from adolescents when asked by jail staff if they wanted to participate, but unfortunately reasons for disinterest were not collected. In future studies it would be useful to document

differences between responders and non-responders. Second, using un-piloted, open-ended questions may be seen as a limitation when compared with HPV knowledge scales with true/false response options.¹⁷ However, questions on HPV knowledge and vaccine experience were adapted from a validated source.⁹ Questions about vaccine attitudes could be viewed as leading yes/no questions, yet the interviewer further inquired about adolescents' reasoning if they responded in a yes/no format. Lack of further vaccination of adolescents by health department nurses also limited the study. Relying on parents and/or guardians to visit the jail to fill out a vaccine consent form for their child was not feasible due to visitation conflicts, like work schedules and even fear of arrest. One parent had outstanding tickets on their record and was hesitant to visit the jail, for example. Given the small sample size and adolescent perspectives from one juvenile detention center in Kansas, these findings may not be generalizable to all incarcerated adolescents. However, this sample is overrepresented by Black males, a reflection of juvenile facilities in the United States,¹⁸ and provides insight from adolescents in a low vaccination state.

Our study suggests that there are missed opportunities for providing HPV education and vaccine to incarcerated adolescents. Future research is needed to understand the barriers and facilitators of successful jail-based vaccination interventions. Results of this study may indicate that for adolescents, specifically, it is important to understand how consent for the vaccine can be obtained more efficiently so as to limit pressure on parents/guardians. It may also be important to understand gaps between giving HPV vaccinations to adolescents and their awareness of receiving the vaccine. Clinical-correctional partnerships could bridge these gaps to address this population's HPV and cancer risk.

Author Contributions

MA collected data, drafted the initial manuscript, initially analyzed data, and reviewed and revised the manuscript. AE analyzed data and reviewed and revised the manuscript, providing guidance on qualitative data interpretation. MLP reviewed and revised the manuscript, providing unique perspectives as a pediatric physician. MR conceptualized and designed the study and reviewed and revised the manuscript.

Declaration of Conflicting Interests

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