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# Facilitators of and barriers to HPV vaccination among sexual and gender minority patients at a Boston community health center

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ABSTRACT

*Background:* Young sexual minority individuals have lower human papillomavirus (HPV) vaccine completion rates than the general population, and little is known about how gender minority people perceive HPV vaccination. The aim of this study was to qualitatively identify patient-, provider-, and systems-level barriers and facilitators for HPV vaccination among sexual and gender minority (SGM) people.
*Methods:* Fifteen SGM-identified individuals, ages 23–26, were recruited at an urban community health center in Boston, MA, that specializes in care for SGM. Participants were enrolled in a study that utilized surveys and in-person focus groups. During focus groups, participants were asked to describe their perceived barriers and facilitators for completion of HPV vaccination.
*Results:* Fourteen participants reported having a sexual minority identity, and five participants reported having a gender minority identity. Participants described the following factors influencing HPV vaccination: (1) at the *patient level,* low HPV-related knowledge and lack of engagement in care were associated with less vaccination, whereas fear of HPV-related disease motivated vaccination; (2) at the *provider level,* knowledge and SGM cultural-competence related to HPV was associated with patient willingness to be vaccinated; (3) at the *systems level,* SGM identity-affirming healthcare settings were associated with increased vaccination, whereas historical trends in HPV vaccine marketing selectively for cisgender women and lack of public awareness of HPV-related disease among SGM were associated with decreased vaccincation.
*Conclusion:* Our study identified internal and external barriers for HPV vaccination related among SGM patients. These findings highlight the need to increase public awareness about the risks of HPV-related disease among SGM and educate SGM youth about HPV-related disease and vaccine importance. Finally, this study supports the need for future interventions to cultivate SGM-competent providers and SGM identity-affirming healthcare settings as a way to increase HPV vaccination.


## 1. Introduction

Human papillomavirus (HPV) is the most commonly acquired sexually transmitted infection in the U.S. [1]. HPV is associated with more than 90% of cervical and anal cancers, 70% of oropharyngeal cancers, and 63% of penile cancers [2] and the incidence of HPV-attributable cancers in the United States is 31,500 annually [3]. Vaccination is the primary measure to prevent HPV-related cancers and associated disease. National guidelines recommend routine vaccination for all children at age 11, and catch-up vaccination for females up to 26 years old and males up to 21 years old. Routine vaccination is also recommended for men 22–26 years old who are HIV-infected or who have sex with men (MSM) [4,5].

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The research on HPV vaccination among sexual and gender minority (SGM) populations is limited. SGM make up approximately 3–12% of the U.S. adult population [6]. SGM have unique health care needs [7,8] and face disproportionate barriers to health care access compared with their non-SGM counterparts. Known barriers for SGM youth include: lack of insurance coverage, economic disadvantages, lack of health care provider (HCP) knowledge about SGM-related health issues, negative HCP attitudes toward SGM, stigma, and discrimination [9–12].

Most young MSM (YMSM) in the U.S. remain unvaccinated despite the higher prevalence of anal HPV among MSM compared with men who have sex with women (MSW) and HIV-infected MSM compared to HIV-uninfected MSM [13]. Several studies have found that among YMSM ages 18 to 26, only 4.9–13% report receiving ≥ 1-dose toward completing the 3-dose vaccine series [14–16].

Among transgender women, transgender men, women who have sex with women (WSW) and other SGM, research on anal HPV infection, HPV-related cancers and HPV vaccination is very limited. One study investigating HPV vaccination among YMSM and transgender women in two U.S. cities has found that only 14% received ≥ 1-dose [17].

Prevalence of HPV infection is higher among women who have sex with both men and women (WSMW) compared to women who have sex with only men (WSM) [18]. Despite this risk, only 15% of SGM females aged 19–26 received ≥ 1-dose of HPV vaccine compared to 41.6% among national population of females [19,20]. Similarly, WSM were 20% more likely to receive ≥ 1-dose of HPV vaccine compared to WSMW and WSW [21].

The aim of this study was to identify patient-, provider- and systems-level barriers to and facilitators for HPV vaccination among eligible SGM patients at an urban community health center specialized in care for SGM patients [22]. To our knowledge, this is the first qualitative study exploring knowledge, attitudes and behaviors regarding HPV vaccination in a sample broadly inclusive of SGM subgroups, with varied HIV status.

## 2. Methods

### 2.1. Study design

We conducted a focus group study with a purposive sample of SGM individuals, including a quantitative survey component, from June 2016 to September 2016 at a community health center in Boston, Massachusetts. Protocols and procedures were approved by the health center's Institutional Review Board (IRB). In accordance with the health center's patient privacy policy, all patients had previously been informed that their information may be used for research, that their information may be disclosed to researchers, and that this disclosure may be related to determining whether or not a patient may be eligible for a study. Vaccine-eligible SGM youth, ages 18–26 years, who could read/understand English were recruited from our health center. The health center's Informatics and Data Services Department generated reports of potentially eligible participants using the Electronic Health Record (EHR), which were shared with our study team under and approved waiver of authorization. All potential participants were also stratified by HIV Status (Infected or Uninfected) and Vaccination Status (Completed or Not Completed). Per the IRB-mandated recruitment process, study staff then contacted qualified participant's primary care providers (PCPs) to briefly explain the study and obtain permission to recruit the patient. If authorized, we contacted the patient via email and/or phone to screen for eligibility. A total of 214 eligible patients were contacted during the recruitment process. If eligible and interested, participants were enrolled in 1 of 4 focus groups: HIV-uninfected and 3-dose HPV vaccine complete; HIV-uninfected and 3-dose NOT complete; HIV-infected and 3-dose complete; HIV-infected and 3-dose NOT complete.

Participants completed a verbal consent and a survey with 143 questions (30 min), and participated in 60-min discussion sessions facilitated by two investigators (K.Z.A. and A.S.K.) in the health center's private conference room. Discussions were recorded by a digital audio recorder and transcribed verbatim by a professional transcription service. Participants received $50 and a meal, which is standard for 90-min study visits at the health center, as remuneration. At the end of each focus groups, participants received five minutes of health education about HPV-related disease and the importance of completing HPV vaccination.

### 2.2. Measures

Participants completed a questionnaire assessing demographic information, health information, HPV-related practices, and HPV knowledge; questions were adapted from previous studies [23–26]. Demographic data included age, race/ethnicity, education, income, health insurance type, sexual orientation/gender identity (SO/GI), relationship status, and HIV status. Health-related questions focused on how often the patient sees a PCP, presence or absence of sexual activity, numbers of sex partners, types of sexual activity, condom use, and use of tobacco products. HPV-related questions focused on HPV vaccination, HPV diagnosis, HPV status of sex partners, and sources of HPV vaccine information.

Focus groups were guided by an open-ended, semi-structured script. The script elicited participant knowledge, beliefs, and perceptions regarding HPV/HPV vaccination, with a focus on perceived barriers and facilitators to vaccination. The script was adapted from a previous study exploring barriers to and facilitators of HPV vaccination among only YMSM [27]. Examples of questions are presented in Table 1.

### 2.3. Data analysis

Questionnaire data were organized and analyzed in Excel version 15 (Microsoft, Redmond, WA). Descriptive analyses of the surveys included means, standard deviations, and percentages.

Transcripts were imported into Dedoose Version 7.0.23 (SocioCultural Research Consultants, LLC, Los Angeles, CA) for data management and thematic content analysis. K.Z.A read all the transcripts and created the initial codebook. The development of the codebook was based on both deductive and inductive analysis [28]. K.Z.A and A.S.K independently coded all the transcripts with the initial codebook and a Kappa statistic was calculated on the higher level themes (patient-, provider- and systems-level barriers/facilitators) as 0.843 ($p < 0.001$) using SPSS version 22 (IBM, Armonk, NY) [29]. K.Z.A and A.S.K met to discuss and resolve discrepancies in coding, then coded at the sub-theme level, met again to resolve further discrepancies, collapsed codes if needed, and reached final agreement in data analysis.

## 3. Results

### 3.1. Characteristics of the sample

The sample included 15 SGM-identifying participants with a mean age of 25 years (range: 23–26) (see Table 2). The majority were sexually active (80%) and reported multiple visits to their PCP each year. The prevalence of HIV infection among participants was 26.7%. The majority reported initiation (80.0%) or completion (73.3%) of the HPV vaccine series. The participants' primary source of HPV information was visiting the health center (80.0%).

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