

The association of gender-affirming care with PrEP use among transgender women in Seattle

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Abstract

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Transgender women are inequitably burdened with HIV worldwide. Pre-exposure prophylaxis (PrEP) is safe and effective at preventing HIV acquisition, but uptake is low. Integrating HIV care and gender-affirming care may increase PrEP uptake. We conducted a cross-sectional study using the Seattle 2023-2024 National HIV Behavioral Surveillance (NHBS-Trans) survey (N = 149). A composite score for gender-affirming care (low, intermediate, high) was used to estimate prevalence and examine associations with PrEP use. Only 30% of participants used PrEP in the prior 12 months; among them, 60% reported high adherence. Fifty-eight percent had high access to gender-affirming care, 29% intermediate, and 13% low. Chi-square and Fisher's exact tests showed those with high access had a proportion of PrEP use over three times that of those with low access (PR: 3.31, 95% CI: 0.87-12.7); intermediate access nearly three times that of those with low access (PR: 2.87, 95% CI: 0.72-11.5). Multivariate log binomial regression showed similar patterns for high (PRadj: 3.37, 95% CI: 0.5-25) and intermediate access (PRadj: 3.65, 95% CI: 0.5, 25). Though not statistically significant, these results support integration of PrEP with gender-affirming care as a holistic strategy to improve uptake among transgender women.

Background & Significance

Globally, transgender women are inequitably burdened with HIV. Across fifteen countries assessed in a meta-analysis, transgender women were 48.8 times more likely to have HIV than other adults¹. Pre-exposure prophylaxis (PrEP) is an antiretroviral taken routinely to reduce chances of acquiring HIV; among men who have sex with men (MSM), regular PrEP use resulted in a 92% reduction in risk of acquiring HIV compared with placebo³. In most studies examining PrEP effectiveness, transgender women are frequently aggregated with MSM, which makes it difficult to analyze and report the effectiveness among this specific population^{4,5}. However, PrEP has been shown to be safe and effective among transgender women⁶⁻⁸. PrEP uptake is low among transgender women; medical mistrust and fear of “outing” oneself as transgender may deter individuals from using PrEP, or they may have concerns over the possibility of interactions with gender-affirming hormones⁹⁻¹¹. Additionally, healthcare providers might not have informed patients about PrEP¹². Structural factors are significant barriers to PrEP use in marginalized groups, particularly among Black MSM and transgender women, and may increase the risk of HIV infection^{13,14}. Addressing systemic and structural health disparities is an essential aspect of successful intervention to improve PrEP uptake and adherence among groups who have a high likelihood of acquiring HIV^{12,15}.

Gender affirmation is an important confirmation of sense of self in any individual, transgender or otherwise. It can be defined as having social, legal, and medical aspects. Social gender affirmation is the interpersonal recognition and support of an individual's gender identity. Legal gender affirmation is the reflection of a preferred name and/or gender marker on legal documents, e.g. driver's licenses. Medical gender affirmation may include the use of gender-affirming hormone therapy (GAHT) or surgery. Gender-affirming care may include all three types; clinicians providing medical care like GAHT are ideally also equipped to provide patients with resources or referrals to begin the process of a name or gender marker change, and socially affirm a patient's identity¹⁶. None of this is unique to transgender people. Every individual experiences gender, and affirmation and acknowledgement of this aspect of personal identity is a universal need. However, due to minority status, gender affirmation may be more difficult to access and experience. For transgender women of color, this is particularly evident as a frequently unmet need¹⁷.

Despite evidence that integration of HIV care with gender-affirming care is associated with greater viral suppression among communities, PrEP has not been widely integrated into gender-affirming care for transgender women⁹. Viral suppression is more likely in transgender patients who have gender-affirming healthcare providers, whether their services include medical gender care or other healthcare¹⁸. Greater access to gender-affirming care may also serve as an effective intervention to increase PrEP use among transgender women.

In this study, we aimed to evaluate whether access to comprehensive gender-affirming care is associated with a higher proportion of PrEP uptake among transgender women. Past studies have found that access to gender-affirming care is associated with greater PrEP use^{2,19}, while others found the opposite²⁰. One concern among transgender women is the possibility of PrEP interfering with GAHT, or vice-versa. While this has been shown to be unlikely^{7,8,21}, this concern is a source of hesitancy, as is limited access to gender-affirming care practitioners^{9,16,22}. While similar studies have been conducted on the east coast of the U.S., the evaluation of this association among populations of transgender women in Seattle is novel. There is limited research evaluating the possibility of gender-affirming care as a method to improve population-level PrEP use and adherence; this study addresses this knowledge gap.

Methods

Study setting

We used data from the 2023-2024 National HIV Behavioral Surveillance (NHBS) survey among transgender women (NHBS-Trans). This surveillance system enrolled participants in multiple urban areas in the United States. Among the 19 sites that currently conduct NHBS among the core populations—MSM, persons who inject drugs, and heterosexually active persons at increased risk for HIV infection—10 sites participated in the NHBS-Trans survey²³. In this study, we used data from the Seattle site.

Study subjects, design, and recruitment

NHBS-Trans was a cross-sectional survey, used to monitor behavioral risk factors, prevention, and prevalence of HIV among transgender women. This was conducted using respondent-driven sampling. Initial participants, known as seeds, were identified by individuals and community-based organizations who were a part of or shared space with the local populations of transgender women. Those who completed the interview invited additional participants using coupon incentives in peer-to-peer recruitment

within their communities. To be eligible, individuals needed to be 18 or older; assigned male or intersex at birth and reporting gender identity of woman, transgender woman, or unlisted gender; residents of the participating city; able to interview in English or Spanish; and able to provide informed consent. In this study, participants are limited to Seattle. The target sample size for each site was 300 participants. Participants completed an interviewer-administered, standardized, in-person anonymous questionnaire using computer tablets. This included questions about demographics, sexual behaviors, injection and non-injection drug use, HIV testing experiences, access to healthcare and prevention, and gender-affirming care. Additionally, all participants were offered rapid HIV testing as well as incentive payments for the interview (\$50), with additional payments for recruiting other participants (\$20/each)^{2,24,25}.

Exposure

The exposure of interest was gender-affirming care. NHBS-Trans asked questions about gender affirmation, focusing on the medical, legal, and social aspects described above. Aligned with this definition, we defined the exposure using a composite measure based on three sets of questions from the survey, and assigned participants a score of 0, 1, 2, or 3 based on their responses. First, medical gender affirmation was assessed using two questions: “Have you ever taken hormones for gender transition or affirmation?” and “Have you ever had any type of surgery for gender transition or affirmation?” with responses either “Yes” (1) or “No” (0). Those who answered “Yes” to either or both of these questions scored a 1 for medical gender affirmation. Additionally, NHBS-Trans asked individuals who responded “No” to these questions whether or not they wanted either type of medical gender affirmation. If respondents did not have and did not want medical gender affirmation, they still scored a 1, as they expressed no need for access.

Second, legal gender affirmation was assessed using two questions, adjusted to fit a dichotomous variable: “Thinking about how your name is listed on all of your legal documents... which of these statements is most true?” and “Thinking about how your gender is listed on all of your legal documents... which of these statements is most true?” The response options were “all”, “some”, or “none of my IDs and records list my chosen name/the gender I would like listed.” We defined those who responded “all” or “some” to either or both questions as a score of 1 for legal gender affirmation. If the participants chose “none” for both questions, we defined them as a “No” (0). Similar to the gender-affirming medical care

questions, individuals were also asked whether it was important to them to have legal documents changed in this way. If respondents did not have either name or gender changed on legal documents and did not express importance, they also scored a 1 for legal gender affirmation.

Third, to assess social gender affirmation, we used the question “Have you ever had a health care provider with whom you felt comfortable discussing gender-related health issues?” with responses either “Yes” (1) or “No” (0). Our composite measure for gender-affirming care was intended to add these scores together, from 0-3, with 0 being no access, 1-2 being intermediate access, and 3 being high access to care. With the small sample size (N=149) and high reported levels of access to gender-affirming care in Seattle, we instead defined 0-1 as low access, 2 as intermediate access, and 3 as high access.

Outcome

The outcomes of interest were PrEP use and adherence among people who self-reported a negative or unknown HIV status. PrEP use was measured via a “Yes” or “No” response to the question “In the past 12 months, have you taken PrEP to reduce the risk of getting HIV?”. If PrEP use was reported, participants were asked whether they took pill or injectable forms. In our sample, of those who reported PrEP use, all had used a pill form. PrEP adherence was measured via the question “When you took PrEP in the past 12 months, did you take it every day, almost every day, or less often?” In our analysis, we combined the responses “every day” and “almost every day” to dichotomize PrEP adherence, with these responses indicating high adherence. Studies have shown that even if doses are missed and it is only taken on-demand, i.e. before and after an exposure event, PrEP is highly effective^{26,27}. A response of “less often” indicated low adherence.

Covariates

Key covariates included: the number of sexual partners (0, 1, 2+) in the last year; STI diagnosis in the last year (yes/no); methamphetamine use in the last year (yes/no); injection drug use in the last year (yes/no); having any condomless sex in the last year (yes/no); having exchanged money or drugs for sex in the last year (yes/no); HIV status of last sexual partner (positive, negative, or unknown); income (above or below the 2024 poverty line²⁸); health insurance coverage (yes/no); education (some/no college education); race/ethnicity (Hispanic or Latino/a, American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, white); and age (18-34, 35+).

Data analysis

We restricted our analysis to participants who self-reported a negative or unknown HIV status. We calculated the prevalence of gender-affirming care in the population. This quantified the prevalence of GAHT, gender-affirming surgery, correct names and gender markers on legal documents, and comfort discussing gender-related health issues with care providers. The prevalence of each was calculated separately, as well as via the composite measure (scored 0-3) used to assess the prevalence of high access to gender-affirming care in the population.

We evaluated the association between gender-affirming care and PrEP use and adherence. First, we evaluated unadjusted associations between PrEP use and the gender-affirming care score using Chi-square and Fisher's exact tests. Then we evaluated unadjusted associations between PrEP adherence and the gender-affirming care score using Chi-square and Fisher's exact tests. To obtain unadjusted prevalence ratios and 95% confidence intervals, we used the *epi2by2()* function in the *epiR* package.

Next, we created a multivariate model for PrEP use using log binomial regression. All of the following covariates were potentially associated with both gender-affirming care and PrEP use/adherence: STI diagnosis, methamphetamine use, injection drug use, income, health coverage, education, race/ethnicity, and age^{2,19,29}. While we originally intended to include all of these covariates in the model, STI diagnoses were rare in the study population, and the model failed to converge. Additionally, contingency tables for race/ethnicity proved to have small cell sizes. For this study population, we considered income, health insurance coverage, and education to be alternative estimates of socioeconomic status and instead included them as covariates in the multivariate model.

While we had planned to create a multivariate model for PrEP adherence using log binomial regression, the number of respondents using PrEP who answered this question was too small for adjusted analyses (n = 31).

Additionally, we performed a sensitivity analysis including only participants for whom PrEP is most recommended by the CDC (persons who inject drugs, having multiple sexual partners, having partners at higher risk of HIV, sharing syringes, having sex with individuals assigned male at birth, and having condomless sex)³⁰. However, NHBS-Trans did not include questions regarding sex assigned at birth or HIV risk of participants' partners. In order to approximate the CDC recommendation, this sensitivity

analysis included participants who met one or more of the following: injection drug use, having multiple sexual partners, sharing syringes, or having condomless sex. Analysis was conducted using R 4.4.

This analysis was reviewed and approved by the University of Washington's Human Subjects Division (STUDY00022706).

Results

Participant Characteristics

A total of 164 individuals participated in the Seattle NHBS-Trans survey, with 91% self-reporting a negative or unknown HIV status. The analytical sample consisted of 149 participants, of whom one had missing data for PrEP use. Of those with complete data for PrEP use, 30% reported taking PrEP in the past 12 months. Characteristics of the study population are shown in Table 1. Native Hawaiian/Pacific Islander transgender women comprised 36% of the sample, and 44% was white transgender women. Most individuals had attended college (57%) and were aged 18 to 35 (54%). Nearly half (46%) lived above the 2024 federal poverty line, although 20% were missing data for income. The vast majority of individuals had health insurance coverage (85%). In terms of behavioral characteristics in the past year, a majority reported two or more sex partners (59%) and any condomless sex in the past year (64%). Most individuals had a most-recent sex partner who was HIV-negative (44%, 17% no recent partner), although 37% did not know their last partner's HIV status. A minority reported methamphetamine use (18%), an STI diagnosis (11%), and having exchanged money or drugs for sex (32%). Most reported no history of injection drug use (83%).

Access to Gender-Affirming Care

Overall, 87% of participants reported access to medical gender affirmation, 80% legal affirmation, and 73% social affirmation. As shown in Table 2, a majority of transgender women in this survey reported having ever taken hormones for gender transition/affirmation (80%), ever having surgery for gender transition/affirmation (55%), having some or all IDs listing a chosen name (70%), having some or all IDs listing a preferred gender (74%), and being comfortable discussing gender-related issues with a healthcare provider (73%). Twenty-nine percent of participants did not have and did want access to hormones for gender transition/affirmation at the time, and 36% of participants did not have and did want surgery for gender transition/affirmation. The majority had high access to gender-affirming care (58%),

with 29% having intermediate access, and 13% having low access. Of note, Black transgender women reported the highest prevalence of low access to gender-affirming care (46%); the difference between Black and non-Black transgender women was significant ($p = 0.006$) (Table 1). Subgroups reporting a greater prevalence of high access to gender-affirming care included: participants who attended college (68% vs. 44%, $p = 0.001$), participants with health coverage (62% vs. 35%, $p = 0.007$), participants living above the federal poverty line (68% vs. 44%, $p = 0.01$), and participants who did not report methamphetamine use (63% vs. 37%, $p = 0.02$).

PrEP Use

A minority of transgender women in this survey reported having used PrEP in the last year (30%). Of those individuals, a majority reported high adherence (60%). However, only 31 individuals on PrEP responded to the PrEP adherence question, which resulted in a high degree of missingness (30%). Hispanic transgender women reported the highest prevalence of PrEP use (55%), and white transgender women the lowest (25%) (Table 3). While the difference in the prevalence of PrEP use between Hispanic transgender women and non-Hispanic transgender women was significant ($p = 0.02$), the difference between white transgender women and non-white transgender women was not significant ($p = 0.66$). Those reporting a significantly higher prevalence of PrEP use included: participants with more than one sex partner (42% vs. 8%, $p = 0.0001$), participants who had condomless sex in the last year (39% vs. 15%, $p = 0.005$), and participants who exchanged money or drugs for sex in the last year (46% vs. 23%, $p = 0.008$).

Gender-Affirming Care and PrEP Use

In crude analysis, we found that the proportion of PrEP use among those with intermediate access was nearly three times that of those with low access (PR: 2.87, 95% CI: 0.72-11.5) (Table 4). Among those with high access, the proportion of PrEP use was over three times that of those with low access (PR: 3.31, 95% CI: 0.87-12.7). In our log binomial multivariate analysis, we found similar results. Among those with intermediate access, the proportion of PrEP use was nearly four times that of those with low access (PR_{adj}: 3.65, 95% CI: 0.5-27). Among those with high access, the proportion of PrEP use was over three times that of those with low access (PR_{adj}: 3.37, 95% CI: 0.5-25).

In our sensitivity analysis among those for whom PrEP use is recommended by the CDC, we found similar results. In crude analysis, the proportion of PrEP use among those with intermediate access was three times that of those with low access (PR: 3.06, 95% CI: 0.78-12.0). Among those with high access, the proportion of PrEP use was more than three times that of those with low access (PR: 3.34, 95% CI: 0.89-12.6, Table 5).

Discussion

The prevalence of PrEP use was low in this survey of Seattle area transgender women. This is of particular concern in groups considered at higher risk of exposure to HIV, such as those with multiple sex partners, those having condomless sex, and those who exchanged money or drugs for sex in the last year. On the other hand, higher access to gender-affirming care was more prevalent among those with a privileged socio-economic position, e.g. having attended college, having health insurance, and living above the federal poverty line. Taken together, the prevalence of PrEP use was greater with higher access to gender-affirming care, indicating a possible avenue for increasing PrEP uptake among transgender women. While the association between PrEP use and levels of gender-affirming care was not statistically significant in this study, higher access to gender-affirming care was associated with a greater prevalence of PrEP use, and may have achieved statistical significance in a larger sample. Prior studies have shown that transgender women not currently taking hormones were less likely to have used PrEP, and have shown that transgender women who have ever had transgender-specific health care were more likely to report PrEP use^{18,19}.

Among the Seattle area respondents to the 2023-2024 NHBS-Trans survey, there was a high prevalence of high access to gender-affirming care. Most respondents had, at some point, access to medical gender affirmation, legal gender affirmation, and social affirmation. Some had access for two out of the three, and a minority had access to one or none. This is expected in a major metropolitan area, and certainly in a city with a thriving LGBTQ+ community. In particular, there was a significant difference across levels of gender-affirming care access when comparing those with or without health insurance. As health insurance is inexorably tied with medical gender-affirming care in the United States, this is unsurprising. Similarly, there was a significant difference across levels of gender-affirming care among those with some vs. no college education. Those with some college education are more likely to live

above the federal poverty status and have health insurance. These three indicators of socioeconomic status are fundamentally intertwined. Our results are in line with prior studies of these factors and their link with gender-affirming care; lower income, lack of health insurance, and lower education levels prevent greater access to gender-affirming care^{31,32}. Notably, Black transgender women had significantly low access to gender-affirming care. As shown in prior studies, structural barriers limit access to care, whether for PrEP or for gender-affirming care, and Black transgender women consistently have disproportionately low access to care^{13,14,31}. In future analyses, it would be meaningful to examine these associations within each racial and ethnic subgroup to better evaluate the impact of structural racism on access to gender-affirming care and PrEP uptake.

In King County, the reported PrEP use among MSM who met the priority PrEP criteria was 67% in 2023, not far from the 2025 target of 70%³³. PrEP use was comparatively low in this study population, at less than half of the 2025 target. While PrEP use among those considered at higher risk of contracting HIV was marginally greater than the overall study population, there are indications of gaps in uptake. For example, those with multiple sex partners in the last year had a greater prevalence of PrEP use than those with one or none, but still only a minority were on PrEP. Individuals who had more than one sex partner, reported injection drug and/or methamphetamine use, had condomless sex, and exchanged money or drugs for sex all had a low prevalence of PrEP use. As these are major risk factors for contracting HIV, the low level of PrEP uptake in this study is concerning and an important area for reducing barriers to access³⁰.

We did find that individuals who were diagnosed with an STI in the last year had a higher proportion of PrEP use. We interpret this in two ways: First, receiving an STI diagnosis requires visiting a healthcare professional, and STI-related visits are likely to include discussion about PrEP due to the higher risk of HIV following an STI diagnosis. Second, individuals on PrEP may be more likely to have condomless sex, and are thus more likely to contract an STI. Both are probable and have been described in prior studies^{33,34}.

Our point estimates show that higher access to gender affirming care is associated with a three-fold higher prevalence of PrEP use compared to those with lower access to gender affirming care. Thirteen percent of those who reported never being comfortable discussing gender-related issues with a

healthcare provider were on PrEP, versus 38% of those who reported ever being comfortable. Additionally, only 10% of individuals who had never taken hormones for gender transition or affirmation were on PrEP vs. 35% who had ever taken hormones for these reasons. It should be acknowledged that access to hormones for gender transition does not imply being comfortable discussing gender-related issues with a healthcare provider. There were individuals who had either taken hormones or had surgery for gender-affirming care who were not comfortable speaking to a healthcare provider. Out of those who scored a 1 in the medical gender affirmation category (had ever had access to hormones or surgery for gender transition/affirmation), 16% had never been comfortable speaking to a healthcare provider (0 in social category). Among those who scored a 1 for our medical category and a 1 in our social category, 38% were on PrEP. Among those who scored a 1 for medical and a 0 for social, 16% were on PrEP. Within the same level of access to medical gender-affirming care, there was more than twice the amount of PrEP use among those comfortable speaking to providers than those who had never had that experience. While we cannot infer any causality from this proportional difference, prior studies have shown that medical mistrust and fear of “outing” oneself as transgender may deter individuals from using PrEP^{9–11}.

As this was a cross-sectional study, a temporal relationship between exposures, covariates, and PrEP use cannot be inferred. We were limited by the questions asked in the survey—it would be beneficial to have had a question regarding the use of appropriate pronouns by healthcare providers, for example, but this may be implicitly reflected in the included question of comfort with discussing gender-related health. Additionally, there was no information on the participant’s sexual partner’s assigned sex at birth or a partner’s behavioral HIV risk status, which makes assessing this aspect of HIV risk an unknown. Due to sample size, we had wide confidence intervals for the association between gender-affirming care and PrEP use. Regardless, examining this association is an important evaluation of ways in which health professionals may increase PrEP uptake within communities. Future analyses may include additional NHBS-Trans sites for a more robust study population, also allowing for the analysis of this association within population subgroups to highlight structural barriers to care.

Navigating healthcare as a transgender person is often very difficult. Having intersectional levels of support from care providers is essential for patients. Providers often lack knowledge of medical protocols

specific to transgender patients and cannot provide appropriate referrals, which can result in gender-related discrimination by the provider^{35,36}. A 2017 study found that a median of 22 hours of content in required medical school curricula was LGBT-specific. Trainees were on average more comfortable caring for lesbian, gay, and bisexual patients than transgender patients³⁷. It is possible that this has noticeably changed in the last eight years, as the content time changed from 5 hours in 2010 to 22 in 2017, but there is also no indication of how much of this curricula is trans-specific³⁸. If providers cannot holistically care for transgender patients and navigate gender-affirming care, it stands to reason that HIV prevention for transgender women may fall through the cracks. Improving transgender-specific content in medical training may naturally lead to the integration of HIV prevention with gender-affirming care, resulting in an intersectional avenue for PrEP normalization and an increase in PrEP uptake among transgender women.

Table 1: Demographic and behavioral characteristics of transgender women and people of transfeminine experience who did not report being HIV-positive, participated in 2023-2024 NHBS-TRANS survey in Seattle, WA.

Variable	Gender-affirming care score				p-value ^d
	N = 149	Low (0-1) N = 19	Intermediate (2) N = 43	High (3) N = 87	
	N (col %)	n (row %)	n (row %)	n (row %)	
Race/Ethnicity^e					
American Indian or Alaskan Native	19 (12.7)	5 (26.3)	6 (31.6)	8 (42.1)	0.18
Asian	16 (10.7)	0	7 (43.8)	9 (56.2)	0.15
Black	13 (8.7)	6 (46.2)	2 (15.4)	5 (38.5)	0.006
Hispanic/Latin	22 (14.8)	1 (4.5)	10 (45.5)	11 (50.0)	0.17
Native Hawaiian/Pacific Islander	53 (35.5)	8 (15.1)	15 (28.3)	30 (56.6)	0.91
White	65 (43.6)	8 (12.3)	19 (29.2)	38 (58.5)	0.93
Age					
18-34	80 (53.7)	14 (17.5)	24 (30.0)	42 (52.5)	0.13
35+	69 (46.3)	5 (7.2)	19 (27.5)	45 (65.2)	
Education					
No college	63 (42.3)	15 (23.8)	20 (31.7)	28 (44.4)	0.001
Some college	85 (57.0)	4 (4.7)	23 (27.1)	58 (68.2)	
Health Insurance Coverage					
No health insurance coverage	20 (13.4)	7 (35.0)	6 (30.0)	7 (35.0)	0.007
Has health insurance coverage	127 (85.2)	12 (9.4)	36 (28.3)	79 (62.2)	
Federal Poverty Status					
Above	69 (46.3)	4 (5.80)	18 (26.1)	47 (68.1)	0.01
At or below	50 (33.6)	10 (20.0)	18 (36.0)	22 (44.0)	
N/A (refused/don't know)	30 (20.1)	5 (16.7))	7 (23.3)	18 (60.0)	
No. of Sex Partners^a, past year					
0	25 (16.8)	2 (8.0)	8 (32.0)	15 (60.0)	0.15
1	25 (16.8)	2 (8.0)	3 (12.0)	20 (80.0)	
2+	88 (59.1)	13 (14.8)	29 (33.0)	46 (52.3)	
Injection Drug Use, ever					
No	123 (82.5)	14 (11.4)	36 (29.3)	73 (59.3)	0.49
Yes	25 (16.8)	5 (20.0)	7 (28.0)	13 (52.0)	
Methamphetamine Use, past year					
No	122 (81.9)	12 (9.8)	33 (27.0)	77 (63.1)	0.02
Yes	27 (18.1)	7 (25.9)	10 (37.0)	10 (37.0)	
HIV Status of Last Sexual Partner					
Positive	3 (2.0)	1 (33.3)	2 (66.7)	0	0.22
Negative	66 (44.3)	10 (15.2)	18 (27.3)	38 (57.6)	
Unknown	55 (36.9)	6 (10.9)	15 (27.3)	34 (61.8)	
Any Condomless Sex^b, past year					
No	54 (36.2)	6 (11.1)	14 (25.9)	34 (63.0)	0.69
Yes	95 (63.8)	13 (13.7)	29 (30.5)	53 (55.8)	
Exchanged Money/Drugs for Sex^c, past year					
No	101 (67.8)	13 (12.9)	27 (26.7)	61 (60.4)	0.70
Yes	48 (32.2)	6 (12.5)	16 (33.3)	26 (54.2)	
STI Diagnosis (gonorrhea, chlamydia, or syphilis), past year					
No	67 (45)	5 (7.5)	21 (31.3)	41 (61.2)	0.50
Yes	17 (11.4)	3 (17.6)	4 (23.5)	10 (58.8)	

Note: a - "Sex" defined as having had oral, anal, or vaginal sex. b - "Sex" defined as insertive/receptive vaginal or anal sex. c - "Sex" defined as any type of sex. d - Calculated via Chi square, or Fisher's exact if cell sizes were under 5. Column percentages for some variables do not sum to 100% due to missing data. e - Participants chose 1+ option.

Table 2: Reported access to or desire for medical gender-affirming care, legal gender-affirming care, and social gender affirmation in healthcare contexts among transgender women and people of transfeminine experience who did not report being HIV-positive and participated in the 2023-2024 NHBS-TRANS survey in Seattle, WA.

		PrEP Use, past year			
		N = 149 N (col %)	No N = 103 n(row%)	Yes N = 45 n(row%)	p-value ^c
	1	130 (87.2)	86 (66.2)	43 (33.1)	
Medical score	0	19 (12.8)	17 (89.5)	2 (10.5)	0.08
Ever taken hormones for gender transition/affirmation ^a					
No		30 (20.1)	27 (90.0)	3 (10.0)	
Yes		119 (79.9)	76 (63.9)	42 (35.3)	0.01
Currently taking hormones for gender transition/affirmation, if ever taken					
No		28 (18.8)	18 (64.3)	10 (35.7)	
Yes		91 (61.1)	58 (63.7)	32 (35.2)	
N/A (never taken)		30 (20.1)	27 (90.0)	3 (10.0)	1.0
Want hormones for gender transition/affirmation, if not currently on					
No		14 (9.4)	11 (78.6)	3 (21.4)	
Yes		43 (28.9)	33 (76.7)	10 (23.3)	
N/A (currently on + 1 “don’t know”)		92 (61.7)	59 (64.1)	32 (34.8)	0.55
Ever underwent surgery for gender transition/affirmation ^T					
No		67 (45.0)	49 (73.1)	17 (25.4)	
Yes		82 (55.0)	54 (65.9)	28 (34.1)	0.36
Wants surgery for gender transition/affirmation, if have not had					
No		10 (6.7)	7 (70.0)	3 (30.0)	
Yes		53 (35.6)	40 (75.5)	12 (22.6)	
N/A (Had surgery + 4 “don’t know”)		86 (57.7)	56 (65.1)	30 (34.9)	1.0
	1	120 (80.5)	85 (70.8)	34 (28.3)	
Legal score	0	29 (19.5)	18 (62.9)	11 (37.9)	0.45
IDs list chosen name ^a					
None		45 (30.2)	28 (62.2)	16 (35.6)	
Some/all		104 (69.8)	75 (72.1)	29 (27.9)	0.41
IDs list gender preferred ^a					
None		39 (26.2)	27 (69.2)	12 (30.8)	
Some/all		110 (73.8)	76 (69.1)	33 (30.0)	1.0
Social score					
Ever comfortable discussing gender-related issues with healthcare provider ^a					
No		40 (26.8)	35 (87.5)	5 (12.5)	
Yes		109 (73.2)	68 (62.4)	40 (36.7)	0.007
Gender-affirming care access ^b					
High (3)		87 (58.4)	56 (64.4)	30 (34.5)	
Intermediate (2)		43 (28.9)	30 (69.8)	13 (30.2)	
Low (0-1)		19 (12.8)	17 (89.5)	2 (10.5)	0.11

Note: a – Questions included in the gender-affirming care access composite score. b – The composite score for gender-affirming care. c – Calculated via Chi square, or Fisher’s exact if cell sizes were under 5.

Table 3: Demographic and behavioral characteristics of transgender women and people of transfeminine experience who did not report being HIV-positive, participated in the 2023-2024 NHBS-TRANS survey, Seattle, WA.

	PrEP Use, past year			
Variable	N = 149 N (col %)	No N = 103 n (row %)	Yes N = 45 n (row %)	p-value ^d
Race/Ethnicity^e				
American Indian or Alaskan Native	19 (12.7)	12 (63.2)	7 (36.8)	0.46
Asian	16 (10.7)	9 (56.2)	7 (43.8)	0.14
Black	13 (8.7)	9 (69.2)	4 (30.8)	0.75
Hispanic/Latine	22 (14.8)	10 (45.5)	12 (54.5)	0.02
Native Hawaiian/Pacific Islander	53 (35.5)	38 (71.7)	14 (26.4)	1.0
White	65 (43.6)	49 (75.4)	16 (24.6)	0.66
Age				
18-34	80 (53.7)	56 (70.0)	23 (28.8)	0.85
35+	69 (46.3)	47 (68.1)	22 (31.9)	
Education				
No college	63 (42.3)	47 (74.6)	15 (23.8)	0.26
Some college	85 (57)	56 (65.9)	29 (34.1)	
Health Insurance Coverage				
No health coverage	20 (13.4)	15 (75.0)	5 (25.0)	0.73
Has health coverage	127 (85.2)	86 (67.7)	40 (31.5)	
Federal Poverty Status				
Above	69 (46.3)	47 (68.1)	22 (31.9)	0.46
At or below	50 (33.6)	38 (76.0)	12 (24.0)	
N/A (refused/don't know)	30 (20.1)	18 (60.0)	11 (36.7)	
No. of Sex Partners^b, past year				
0	25 (16.8)	23 (92.0)	2 (8.0)	0.0001
1	25 (16.8)	23 (92.0)	2 (8.0)	
2+	88 (59.1)	51 (58.0)	37 (42.0)	
Injection Drug Use, ever				
No	123 (82.5)	87 (70.7)	36 (29.3)	0.67
Yes	25 (16.8)	16 (64.0)	9 (36.0)	
Methamphetamine Use, past year				
No	122 (81.9)	87 (71.3)	34 (27.9)	0.29
Yes	27 (18.1)	16 (59.3)	11 (40.7)	
HIV Status of Last Sexual Partner				
Positive	3 (2.0)	2 (66.7)	1 (33.3)	0.93
Negative	66 (44.3)	42 (63.6)	24 (36.4)	
Unknown	55 (36.9)	36 (65.5)	18 (32.7)	
Any Condomless Sex^c, past year				
No	54 (36.2)	45 (83.3)	8 (14.8)	0.005
Yes	95 (63.8)	58 (61.1)	37 (38.9)	
Exchanged Money/Drugs for Sex^d, past year				
No	101 (67.8)	77 (76.2)	23 (22.8)	0.008
Yes	48 (32.2)	26 (54.2)	22 (45.8)	
STI Diagnosis (gonorrhea, chlamydia, or syphilis), past year				
No	67 (45.0)	38 (56.7)	29 (43.3)	0.19
Yes	17 (11.4)	6 (35.3)	11 (64.7)	

Note: a - "Sex" is defined as having had oral, anal, or vaginal sex. b - "Sex" defined as insertive/receptive vaginal or anal sex. c - "Sex" defined as any type of sex. d - Calculated via Chi square, or Fisher's exact if cell sizes were under 5. Column percentages for some variables do not sum to 100% due to missing data. e - Participants chose 1+ option.

Table 4: The associations between a composite score for gender-affirming care access and PrEP use among transgender women and people of transfeminine experience who did not report being HIV-positive and participated in the 2023-2024 NHBS-TRANS survey in Seattle, WA.

Gender-affirming care access	Total n(col %)	Unadjusted PrEP use, past year		Crude PR (95% CI)	Adjusted PR^a (95% CI)
		No N = 103 (69.6) n(col %)	Yes N = 45 (30.4) n(col %)		
Low (0-1)	19 (12.8)	17 (16.5)	2 (4.4)	<i>Ref</i>	<i>Ref</i>
Intermediate (2)	43 (28.9)	30 (29.1)	13 (28.9)	2.87 (0.72, 11.5)	3.65 (0.5, 27)
High (3)	87 (58.4)	56 (54.4)	30 (66.7)	3.31 (0.87, 12.7)	3.37 (0.5, 25)

Note: a – Model was adjusted for the following covariates: age, education, health insurance coverage, income, injection drug use, methamphetamine use.

Table 5: Sensitivity analysis including those who shared syringes/needles, had multiple sexual partners, used injection drugs, and/or had condomless sex. The associations between gender-affirming care access and PrEP use and adherence among transgender women and people of transfeminine experience who did not report being HIV-positive and participated in the 2023-2024 NHBS-TRANS survey in Seattle, WA.

Gender-affirming care access	Total	Unadjusted PrEP use, past year		Crude PR (95% CI)	Adjusted PR^a (95% CI)
		No N = 74 (63.2) n(col %)	Yes N = 43 (36.8) n(col %)		
Low (0-1)	16 (13.7)	14 (18.9)	2 (4.7)	<i>Ref</i>	<i>Ref</i>
Intermediate (2)	34 (29.1)	21 (28.4)	13 (30.2)	3.06 (0.78, 12.0)	4.34 (0.61, 30.9)
High (3)	67 (57.3)	39 (52.7)	28 (65.1)	3.34 (0.89, 12.6)	3.84 (0.52, 28.2)

Note: a – Model was adjusted for the following covariates: age, education, health insurance coverage, income, injection drug use, methamphetamine use.

Supplemental table: Demographic and behavioral characteristics of transgender women and people of transfeminine experience who did not report being HIV-positive and participated in the 2023-2024 NHBS-TRANS survey in Seattle, WA. Stratified via initial composite score system.

Variable	N (col %)	Gender-affirming care score		
		Low (0) N = 7 n (row %)	Intermediate (1-2) N = 55 n (row %)	High (3) N = 87 n (row %)
Race/Ethnicity				
American Indian or Alaskan Native	19 (12.8)	1 (5.3)	10 (52.6)	8 (42.1)
Asian	16 (10.7)	0	7 (43.8)	9 (56.2)
Black	13 (8.7)	1 (7.7)	7 (53.8)	5 (38.5)
Hispanic/Latine	22 (14.8)	0	11 (50.0)	11 (50.0)
Native Hawaiian/Pacific Islander	53 (35.6)	3 (5.7)	20 (37.7)	30 (56.6)
White	65 (43.6)	4 (6.2)	23 (35.4)	38 (58.5)
Age				
18-34	80 (53.7)	6 (7.5)	32 (40.0)	42 (52.5)
35+	69 (46.3)	1 (1.4)	23 (33.3)	45 (65.2)
Education				
No college	63 (42.3)	4 (6.3)	31 (49.2)	28 (44.4)
Some college	85 (57.0)	3 (3.5)	24 (28.2)	58 (68.2)
Health Insurance Coverage				
No health coverage	20 (13.4)	3 (15.0)	10 (50.0)	7 (35.0)
Has health coverage	127 (85.2)	4 (3.1)	44 (34.6)	79 (62.2)
Federal Poverty Status				
Above	69 (46.3)	2 (2.9)	20 (29.0)	47 (68.1)
At or below	50 (33.6)	2 (4.0)	26 (52.0)	22 (44.0)
No. of Sex Partners^a, past year				
0	25 (16.8)	0	10 (40.0)	15 (60.0)
1	25 (16.8)	1 (4.0)	4 (16.0)	20 (80.0)
2+	88 (59.1)	5 (5.7)	37 (42.0)	46 (52.3)
Injection Drug Use, ever				
No	123 (82.6)	6 (4.9)	44 (35.8)	73 (59.3)
Yes	25 (16.8)	1 (4.0)	11 (44.0)	13 (52.0)
Methamphetamine Use, past year				
No	122 (81.9)	5 (4.1)	40 (32.8)	77 (63.1)
Yes	27 (18.1)	2 (7.4)	15 (55.6)	10 (37.0)
HIV Status of Last Sexual Partner				
Positive	3 (2.0)	0	3 (100)	0
Negative	66 (44.3)	5 (7.6)	23 (34.8)	38 (57.6)
Unknown	55 (36.9)	2 (3.6)	19 (34.5)	34 (61.8)
Any Condomless Sex^b, past year				
No	54 (36.2)	1 (1.9)	19 (35.2)	34 (63.0)
Yes	95 (63.8)	6 (6.3)	36 (37.9)	53 (55.8)
Exchanged Money/Drugs for Sex^c, past year				
No	101 (67.8)	6 (5.9)	34 (33.7)	61 (60.4)
Yes	48 (32.2)	1 (2.1)	21 (43.8)	26 (54.2)
STI Diagnosis (gonorrhea, chlamydia, or syphilis), past year				
No	67 (45.0)	2 (3.0)	24 (35.8)	41 (61.2)
Yes	17 (11.4)	2 (11.8)	5 (29.4)	10 (58.8)

Note: a - "Sex" is defined as having had oral, anal, or vaginal sex. b - "Sex" defined as insertive/receptive vaginal or anal sex. c - "Sex" defined as any type of sex.

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