

GYNECOLOGY

Interest in over-the-counter progestin-only pills among transgender, nonbinary, and gender-expansive individuals in the United States

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BACKGROUND: In July 2023, the US Food and Drug Administration approved the first nonprescription oral contraceptive, a progestin-only pill, in the United States. Transgender, nonbinary, and gender-expansive people assigned female or intersex at birth face substantial contraceptive access barriers and may benefit from over-the-counter oral contraceptive access. However, no previous research has explored their perspectives on this topic.

OBJECTIVE: This study aimed to measure interest in over-the-counter progestin-only pill use among transgender, nonbinary, and gender-expansive individuals assigned female or intersex at birth.

STUDY DESIGN: We conducted an online, cross-sectional survey from May to September 2019 (before the US Food and Drug Administration approval of a progestin-only pill) among a convenience sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth who were aged 18 to 49 years from across the United States. Using descriptive statistics and logistic regression analyses, we estimated interest in over-the-counter progestin-only pill use (our outcome) overall and by sociodemographic and reproductive health characteristics (our exposures). We evaluated separate logistic regression models for each exposure. In each model, we included the minimally sufficient adjustment set to control for confounding pathways between the exposure and outcome. For the model for age, we ran a univariable logistic regression model; for all other exposures, we ran multivariable logistic regression models.

RESULTS: Among 1415 participants in our sample (median age, 26 years), 45.0% (636/1415; 95% confidence interval, 42.3–47.6) were interested in over-the-counter progestin-only pill use. In separate logistic regression models for each exposure, there were higher odds of interest

among participants who were aged 18 to 24 years (odds ratio, 1.67; 95% confidence interval, 1.33–2.10; vs those aged 25–34 years), those who were uninsured (adjusted odds ratio, 1.91; 95% confidence interval, 1.24–2.93; vs insured), those who currently used oral contraceptives (adjusted odds ratio, 1.69; 95% confidence interval, 1.17–2.44; vs non-users), had \leq high school degree (adjusted odds ratio, 3.02; 95% confidence interval, 1.94–4.71; vs college degree), had ever used progestin-only pills (adjusted odds ratio, 2.32; 95% confidence interval, 1.70–3.17; vs never users), and who wanted to avoid estrogen generally (adjusted odds ratio, 1.32; 95% confidence interval, 1.04–1.67; vs those who did not want to avoid estrogen generally) or specifically because they viewed it as a feminizing hormone (adjusted odds ratio, 1.72; 95% confidence interval, 1.36–2.19; vs those who did not want to avoid estrogen because they viewed it as a feminizing hormone). There were lower odds of interest among participants with a graduate or professional degree (adjusted odds ratio, 0.70; 95% confidence interval, 0.51–0.96; vs college degree), those who were sterilized (adjusted odds ratio, 0.31; 95% confidence interval, 0.12–0.79; vs not sterilized), and those who had ever used testosterone for gender affirmation (adjusted odds ratio, 0.72; 95% confidence interval, 0.57–0.90; vs never users).

CONCLUSION: Transgender, nonbinary, and gender-expansive individuals were interested in over-the-counter progestin-only pill use, and its availability has the potential to improve contraceptive access for this population.

Key words: contraception, equity, equity: gender expression or identity, equity: sexual orientation, family planning, health disparities, health policy and health economics, LGBTQ+ health, transgender patient care

Introduction

In July 2023, the US Food and Drug Administration approved the first nonprescription oral contraceptive, a

progestin-only pill, in the United States.¹ For over-the-counter access to advance health equity, it is critical to center the voices of those currently facing access barriers caused by systemic forms of oppression. Although a previous nationally representative survey found that 29% of US teens and 39% of US adults at risk for unintended pregnancy and who reported their sex as female were interested in using over-the-counter progestin-only pills,² after review of the medical literature using PubMed, we did not identify any studies that have explored the

perspectives of transgender, nonbinary, and gender-expansive individuals.

In a limited number of previous studies published on the topic, 20% to 37% of self-identified transgender men reported current contraception use, and 60% to 85% reported ever contraception use.^{3–5} Contraception can play an important role in gender affirmation for transgender, nonbinary, and gender-expansive individuals through pregnancy prevention and by reducing or stopping menstrual bleeding, cramping, and other related symptoms.⁶ For individuals with tubal ligations, hormonal

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AJOG at a Glance

Why was this study conducted?

In July 2023, the US Food and Drug Administration (FDA) approved the first nonprescription oral contraceptive, a progestin-only pill, in the United States. Transgender and gender-expansive people assigned female or intersex at birth face substantial contraceptive access barriers and may benefit from over-the-counter oral contraceptive access. However, no previous research has explored their perspectives on this topic.

Key findings

In this online, cross-sectional survey, conducted in May to September 2019 (before the FDA approval of a progestin-only pill) with a convenience sample of 1415 transgender and gender-expansive adults assigned female or intersex at birth, 45.0% were interested in over-the-counter progestin-only pill use.

What does this add to what is known?

Interest in an over-the-counter progestin-only pill is high among transgender and gender-expansive individuals assigned female or intersex at birth, and its availability has the potential to improve contraceptive access for this population.

contraception may also be used for noncontraceptive benefits, for example to reduce menstrual bleeding.

Transgender, nonbinary, and gender-expansive people face numerous systemic barriers to accessing healthcare, including reproductive healthcare. These include provider assumptions and biases, discomfort, and lack of knowledge and experience on best practices related to treating transgender, nonbinary, and gender-expansive people.^{7–11} In a 2015 survey of 27,715 transgender people in the United States, one-third of participants who saw a healthcare provider in the previous year reported negative experiences related to their gender identity, and nearly one-quarter reported not seeking healthcare because of a fear of mistreatment.⁷ Some transgender people experience discomfort and avoid seeking reproductive healthcare because of previous negative experiences and assumptions of many healthcare settings, often labeled women's healthcare.^{9,11} Over-the-counter oral contraceptives could afford greater autonomy and access to contraceptive care without discrimination, stigma, and harm that some transgender, nonbinary, and gender-expansive individuals experience in healthcare settings.

Our study objective was to measure the proportion of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in our sample who would likely use over-the-counter progestin-only pills and to measure the sociodemographic and reproductive health exposures associated with interest. We hypothesized that transgender, nonbinary, and gender-expansive people assigned female or intersex at birth would be interested in over-the-counter progestin-only pills because of easier access when compared with access only after a provider visit, the lack of estrogen, or both.

Materials and Methods

We conducted a self-administered, online, cross-sectional survey about sexual and reproductive health experiences, needs, and preferences from May to September 2019 with a convenience sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth. Eligibility included being assigned female or intersex at birth and identifying as any gender other than exclusively as woman and/or cisgender woman; being aged 18 to 49 years; residing in the United States; and being able to complete the survey in English. We enrolled participants via (1)

an anonymous, open, online survey and (2) participation in The Population Research in Identity and Disparities for Equality (PRIDE) Study,¹² an online, prospective cohort study of people living in the United States who identify as lesbian, gay, bisexual, transgender, queer (LGBTQ+) or another sexual or gender minority (pridestudy.org). We used the open survey to augment The PRIDE Study sample and capture eligible people who wanted to participate in a cross-sectional survey but not in a larger, longitudinal cohort study. We recruited participants for the open survey using social media posts; community-based outreach through transgender, nonbinary, and gender-expansive-related organizations, e-mail distribution lists, and community events; and through flyers that were distributed at academic and community conferences. Recruitment efforts directed participants to a study website that included the eligibility criteria, the compensation amount, and the study objective (to learn about the sexual and reproductive health experiences of transgender, nonbinary, and gender-expansive individuals). Given that the aims of the study were primarily descriptive and our ability to recruit the population at the time was uncertain, we targeted a minimum sample size of 200 individuals.

We co-created the survey questions with a community advisory team and The PRIDE Study's Research and Participant Advisory Committees and administered the survey using Qualtrics (Qualtrics, Provo, UT). Acknowledging that survey language has the potential to induce gender dysphoria and/or feelings of empowerment, we asked participants to provide the words they use to talk about their body parts (eg, uterus, vagina) and their experiences related to sex and fertility (eg, pregnancy, contraception). We used those responses to customize the survey text. In this manuscript, when quoting survey text, we indicate customizable words with curly brackets (ie, {}). Details on how we collected the customizable survey text are included in [Appendix A](#). Additional survey details have been described previously.¹³ Participants could enter a

raffle to win 1 of 100 electronic gift cards to the value of \$50.

This study was approved by the institutional review boards of Stanford University and the University of California, San Francisco, and was also overseen for ongoing analysis by the WCG Institutional Review Board. In addition, The PRIDE Study Research Advisory Committee and the PRIDENet Participant Advisory Committee (pridestudy.org/pridenet) reviewed and approved the study. All participants completed an informed consent form. We used the Strengthening the Reporting of Observational Studies in Epidemiology checklist to report our findings.¹⁴

The primary outcome of our analysis was interest in using over-the-counter progestin-only pills. We measured interest in over-the-counter progestin-only pills by asking the following: “Would you use a {birth control} pill that only had progestin that you could buy over the counter (without a prescription)? Progestin-only pills (also called the “mini-pill”) are a pill taken daily by the mouth that do not contain estrogen, and instead release only one type of hormone, progestin. This hormone works by stopping the {ovaries} from releasing eggs and by thickening the cervical mucus and thinning the lining of the {uterus}. Progestin is not a feminizing hormone and does not interfere with gender affirmation/HRT [gender-affirming hormone replacement therapy]/medical transition.” We coded participants as being interested in using over-the-counter progestin-only pills if they responded “Yes” (vs “No” or “Don’t know”).

Sociodemographic survey variables included age (coded into categories from a numeric response question) and categorical questions for gender identity, sexual orientation, race and ethnicity, relationship status, region, education, current employment and student status, food stamp assistance, and insurance status. To ensure adequate sample sizes for our regression analyses, we combined the following race categories into 1 category for Asian and Pacific Islander: Central Asian, East Asian, Native Hawaiian and Pacific Islander, South Asian,

and South East Asian. Reproductive health variables included ever having been pregnant (coded as “Yes” vs “No” from a numeric response question on number of times pregnant) and categorical questions for whether they considered themselves as being at risk for unintended pregnancy, whether they had penis-in-vagina sex with anyone who produces sperm in the previous year, ever or current contraceptive use (overall, oral contraceptives, and progestin-only pills), whether they were sterilized (described to participants as having had their tubes tied, ovaries removed, and/or uterus removed or other procedure that makes getting pregnant impossible), ever use of contraception or testosterone for gender affirmation, opinions about avoiding estrogen generally or avoiding estrogen because they viewed it as a female or feminizing hormone, and negative experiences in healthcare settings related to gender identity and/or sexual orientation. Additional details on how we collected and coded these measures are included in [Appendix A](#).

In addition, we asked all participants if they had legally changed their gender on their health insurance. If they had, we asked if their legal gender had ever prevented them from having contraception covered by insurance. We also asked all participants if a provider had ever discussed contraception for pregnancy prevention with them (initiated by the participant or provider). If they had, we asked how comfortable they felt asking their provider questions about contraception.

We used Stata version 15.1 (StataCorp LLC, College Station, TX) to calculate descriptive statistics, 2-sided exact (Clopper-Pearson) 95% confidence intervals (CIs) around proportions, and univariable and multivariable logistic regression analyses to estimate interest in over-the-counter progestin-only pill use overall and by sociodemographic and reproductive health characteristics. We included missing data as a category in tables but excluded “Missing” and “Prefer not to say” responses in logistic regression analyses. In our multivariable logistic regression analyses (with a

significance threshold of $P < .05$), exposures included sociodemographic and reproductive health variables that were significant in univariable logistic regression analyses and variables specific to transgender, nonbinary, and gender-expansive experiences that we hypothesized, a priori, might predict interest (ever use of contraception for gender affirmation; ever use of testosterone for gender affirmation; wanting to avoid estrogen generally or as a female or feminizing hormone; and negative experiences in healthcare settings related to gender identity and/or sexual orientation).

Our primary research question involved exploring the relationship between 15 different exposures and a single outcome (interest in over-the-counter progestin-only pill use). Because the specific relationships among confounders, mediators, and effect modifiers or interactions can (and do) differ for each of the 15 exposures of interest and the outcome, best practice epidemiologic methods require the construction of a separate model for each exposure-outcome association to avoid what is known as the Table 2 Fallacy.¹⁵ Thus, we constructed separate models for each exposure-outcome pair and reported the coefficient or measure of the association for the primary exposure only (because the coefficients for each confounder vary depending on the nature of each individual exposure-outcome relationship). We identified potential confounders for each exposure by constructing directed acyclic graphs using Dagitty, version 3.0 (Nijmegen, The Netherlands) ([Appendix B](#)).¹⁶ We selected sociodemographic and reproductive health variables that could be potential confounders from [Tables 1](#) and [2](#) as candidates for model inclusion. Reference groups were based on largest sample size or in accordance with previous literature.² In each model, we included the minimally sufficient adjustment set to control for confounding pathways between the exposure and outcome. For the model for age, we evaluated a univariable logistic regression model; for all other exposures, we evaluated

TABLE 1

Participant demographic characteristics overall and by interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States

Characteristics	Total sample		Interested in over-the-counter progestin-only pill use ^a	
	n	%	n	%
Total sample	1415	100.0	636	45.0
Demographics				
Median age (y) (IQR)	26 (22–31)		25 (22–30)	
Age (y)				
18–24	580	41.0	309	53.3
25–34	629	44.5	255	40.5
35–44	174	12.3	64	36.8
45–49	32	2.3	8	25.0
Gender identities ^b				
Agender	206	14.6	88	42.7
Cisgender man	0	0.0	0	0.0
Cisgender woman ^c	88	6.2	36	40.9
Genderqueer	591	41.8	262	44.3
Man	201	14.2	80	39.8
Nonbinary	778	55.0	358	46.0
Transgender man	502	35.5	227	45.2
Transgender woman	2	0.1	0	0.0
Two-spirit	17	1.2	12	70.6
Woman ^c	185	13.1	76	41.1
Additional gender identity	176	12.4	79	44.9
Multiple gender identities	882	62.3	385	43.7
Sex assigned at birth				
Female	1412	99.8	635	45.0
Intersex	1	0.1	0	0.0
Sex was not assigned at birth	1	0.1	1	100.0
Prefer not to say	1	0.1	0	0.0
Sexual orientation ^b				
Asexual	227	16.0	99	43.6
Bisexual	508	35.9	209	41.1
Gay	289	20.4	124	42.9
Lesbian	192	13.6	83	43.2
Pansexual	362	25.6	173	47.8
Queer	995	70.3	434	43.6
Questioning	60	4.2	24	40.0
Same-gender loving	95	6.7	49	51.6
Straight or heterosexual	41	2.9	16	39.0

Grindlay. Transgender interest in over-the-counter progestin-only pills. Am J Obstet Gynecol 2024.

(continued)

TABLE 1

Participant demographic characteristics overall and by interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States (continued)

Characteristics	Total sample		Interested in over-the-counter progestin-only pill use ^a	
	n	%	n	%
Another sexual orientation	107	7.6	46	43.0
Multiple sexual orientations	892	63.0	394	44.2
Race and ethnicity ^b				
American Indian or Alaska Native	33	2.3	17	51.5
Asian, Central	0	0.0	0	0.0
Asian, East	40	2.8	21	52.5
Asian, South	17	1.2	5	29.4
Asian, Southeast	26	1.8	11	42.3
Black or African American	60	4.2	32	53.3
Hispanic or Latinx	94	6.6	51	54.3
Middle Eastern or North African	17	1.2	5	29.4
Native Hawaiian or Pacific Islander	5	0.4	2	40.0
White	1271	89.8	562	44.2
Multiple racial and ethnic identities	179	12.7	83	46.4
None of the above	11	0.8	3	27.3
Missing	20	1.4	10	50.0
Relationship status				
Single, never married	1026	72.5	481	46.9
Married, civil union, domestic partnership, engaged	280	19.8	106	37.9
Divorced, widowed, separated	70	5.0	29	41.4
Other	25	1.8	11	44.0
Missing	14	1.0	9	64.3
Region				
Midwest	277	19.6	128	46.2
Northeast	355	25.1	148	41.7
South	289	20.4	125	43.3
West	388	27.4	184	47.4
Missing	106	7.5	51	48.1
Education level				
High school degree or less	132	9.3	95	72.0
Some college, trade, or technical school	371	26.2	174	46.9
College degree	468	33.1	205	43.8
Some graduate or professional study	104	7.4	47	45.2
Graduate or professional degree	312	22.1	101	32.4
Missing	28	2.0	14	50.0
Currently employed				

Grindlay. Transgender interest in over-the-counter progestin-only pills. Am J Obstet Gynecol 2024.

(continued)

TABLE 1

Participant demographic characteristics overall and by interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States (continued)

Characteristics	Total sample		Interested in over-the-counter progestin-only pill use ^a	
	n	%	n	%
Yes	1044	73.8	450	43.1
No	352	24.9	174	49.4
Missing	19	1.3	12	63.2
Currently a student				
Yes	422	29.8	220	52.1
No	974	68.8	404	41.5
Missing	19	1.3	12	63.2
Food stamp assistance				
Yes	71	5.0	38	53.5
No	1325	93.6	587	44.3
Missing	19	1.3	11	57.9
Has health insurance				
Yes	1301	91.9	569	43.7
No or don't know	95	6.7	56	59.0
Missing	19	1.3	11	57.9

The data for n=1415 people are presented.

^a Participants were considered interested in over-the-counter progestin-only pill use if they reported "yes" (vs "no" or "don't know") to a question asking if they would use a birth control pill that only had progestin that they could buy over the counter (without a prescription); ^b Respondents could select multiple responses for gender identity, sexual orientation, and race and ethnicity. Categories include anyone who selected that option and, as such, respondents can be represented in more than one category for each of these characteristics; ^c Respondents who selected cisgender woman and/or woman also selected at least 1 other gender identity other than cisgender woman or woman and were therefore eligible for inclusion in our sample.

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multivariable logistic regression models. For all models, we assessed potential collinearity by calculating variance inflation factors; no collinear variables were found within the final adjustment set for each exposure. In exploring the association between education and interest in over-the-counter progestin-only pills, we evaluated an additional model with an interaction term for age and education given evidence of effect modification of the exposure-outcome relationship across ages. Because of sample size limitations, we used univariable logistic regressions for analyses of over-the-counter interest among subsamples who had legally changed their gender on their health insurance and who had ever discussed contraception with a provider.

Results

Overall, 5005 people initiated the survey (798 from the open survey and 4207 from The PRIDE Study); 1625 respondents were eligible. Of these participants, 1415 responded to the question on over-the-counter progestin-only pill interest (87.1% completion rate) and were included in our analytical sample (Figure). The median age was 26 years (interquartile range [IQR], 22–31 years), and participants most commonly identified as nonbinary (n=778; 55.0%), genderqueer (n=591; 41.8%), and transgender man (n=502; 35.5%); 282 (19.9%) identified with a race or ethnic identity other than exclusively White; and 1301 (91.9%) had health insurance (Table 1). Overall, 175 (12.4%) participants considered themselves as being at

risk for unintended pregnancy; 477 (33.7%) had penis-in-vagina sex with someone who produced sperm in the previous year; 1031 (72.9%) had ever used contraception; and 709 (50.1%) were currently using it. More specifically, 731 (51.7%) participants had ever used oral contraceptives (of any type), and 132 (9.3%) were currently using them; 206 (14.6%) had ever used progestin-only pills. In our study sample, 2% (n=31) was sterilized. Among participants who had legally changed their gender on their health insurance (n=253), 6.7% (n=17) reported that it prevented them from having contraception covered by insurance. Among those who ever discussed contraception for pregnancy prevention with a provider (n=849), 62.7% (n=532) felt "somewhat comfortable" or "very

TABLE 2

Participant reproductive health experiences and preferences overall and by interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States

Reproductive health experiences and preferences	Total sample		Interested in over-the-counter progestin-only pill use ^a	
	n	%	n	%
Total sample	1415	100.0	636	45.0
Reproductive health experiences and preferences				
Ever pregnant				
Yes	157	11.1	68	43.3
No	1256	88.8	568	45.2
Missing	2	0.1	0	0.0
Considers self at risk for unintended pregnancy				
Yes	175	12.4	92	52.6
No or do not know	1239	87.6	544	43.9
Missing	1	0.1	0	0.0
Has had penis-in-vagina sex with anyone who produces sperm in the previous year				
Yes	477	33.7	213	44.7
No or do not know	936	66.2	422	45.1
Missing	2	0.1	1	50.0
Ever contraception use				
Yes	1031	72.9	461	44.7
No or do not know	383	27.1	175	45.7
Missing	1	0.1	0	0.0
Current contraception use				
Yes	709	50.1	323	45.6
No or do not know	698	49.3	310	44.4
Missing	8	0.6	3	37.5
Ever oral contraception use				
Yes	731	51.7	331	45.3
No or do not know	684	48.3	305	44.6
Current oral contraception use				
Yes	132	9.3	75	56.8
No or do not know	1282	90.6	561	43.8
Missing	1	0.1	0	0.0
Ever progestin-only pill use				
Yes	206	14.6	128	62.1
No or do not know	1209	85.4	508	42.0
Current progestin-only pill use				
Yes	32	2.3	32	100.0

Grindlay. Transgender interest in over-the-counter progestin-only pills. Am J Obstet Gynecol 2024.

(continued)

TABLE 2

Participant reproductive health experiences and preferences overall and by interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States (continued)

Reproductive health experiences and preferences	Total sample		Interested in over-the-counter progestin-only pill use ^a	
	n	%	n	%
No or do not know	1382	97.7	604	43.7
Missing	1	0.1	0	0.0
Is sterilized or has had tubes tied, ovaries removed, and/or uterus removed or other procedure that makes getting pregnant impossible				
Yes	31	2.2	6	19.4
No	1384	97.8	630	45.5
Ever used contraception for gender affirmation				
Yes	146	10.3	77	52.7
No or do not know	1267	89.5	559	44.1
Missing	2	0.1	0	0.0
Ever used testosterone for gender affirmation				
Yes	601	42.5	249	41.4
No	814	57.5	387	47.5
Current use of testosterone for gender affirmation				
Yes	523	37.0	215	41.1
No	892	63.0	421	47.2
Wants to avoid estrogen generally				
Yes	917	64.8	429	46.8
No or do not know	498	35.2	207	41.6
Wants to avoid estrogen because they view it as a female or feminizing hormone				
Yes	701	49.5	351	50.1
No or do not know	712	50.3	284	39.9
Missing	2	0.1	1	50.0
Ever felt that opinions about their gender identity and/or sexual orientation from healthcare staff have negatively impacted them in a healthcare setting				
Yes	791	55.9	355	44.9
No or do not know	615	43.5	277	45.0
Missing	9	0.6	4	44.4

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(continued)

TABLE 2

Participant reproductive health experiences and preferences overall and by interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States (continued)

Reproductive health experiences and preferences	Total sample		Interested in over-the-counter progestin-only pill use ^a	
	n	%	n	%
Legal gender on their health insurance has ever prevented them from having contraception covered by their insurance (if their gender was legally changed on health insurance, n=253)				
Yes	17	6.7	11	64.7
No or do not know	235	92.9	87	37.0
Missing	1	0.4	1	100.0
How comfortable did you feel asking your provider all of the questions you had about birth control? (if provider has ever discussed birth control for pregnancy prevention, n=849)				
Somewhat or very comfortable	532	62.7	243	45.7
A little comfortable	115	13.6	64	55.7
Not at all comfortable	86	10.1	35	40.7
I did not have questions about birth control	110	13.0	34	30.9
Missing	6	0.7	1	16.7

The data for n=1415 people are presented.

^a Participants were considered interested in over-the-counter progestin-only pill use if they reported "yes" (vs "no" or "don't know") to a question asking if they would use a birth control pill that only had progestin that they could buy over the counter (without a prescription).

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comfortable" asking questions about contraception; 13.6% (n=115) felt "a little comfortable"; 10.1% (n=86) were "not at all comfortable"; and 13.0% (n=110) "did not have any questions" (Table 2).

Overall, 636 participants (45.0%; 95% CI, 42.3%–47.6%) were interested in over-the-counter progestin-only pill use (Table 1). When excluding individuals who were sterilized, a similar proportion (45.5%; 95% CI, 42.9%–48.2%) were interested in over-the-counter progestin-only pill use. In separate logistic regression models for each exposure, there were higher odds of interest among participants aged 18 to 24 years (odds ratio [OR], 1.67; 95% CI, 1.33–2.10; vs those aged 25–34 years), those with a high school degree or less (adjusted OR [aOR], 3.02; 95% CI, 1.94–4.71; vs

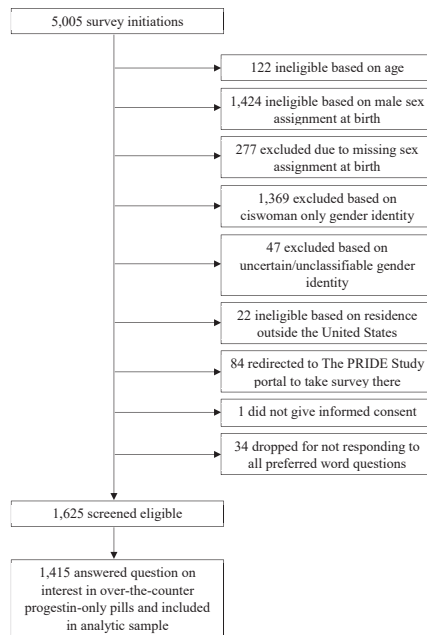
those with a college degree), uninsured participants (aOR, 1.91; 95% CI, 1.24–2.93; vs insured participants), those who were currently using oral contraceptives (aOR, 1.69; 95% CI, 1.17–2.44; vs non-users), and those who had ever used progestin-only pills (aOR, 2.32; 95% CI, 1.70–3.17; vs never users). There were also higher odds of interest among participants who wanted to avoid estrogen generally (aOR, 1.32; 95% CI, 1.04–1.67; vs those who did not want to avoid estrogen generally) or specifically because they viewed it as a female or feminizing hormone (aOR, 1.72; 95% CI, 1.36–2.19; vs those who did not want to avoid estrogen because they viewed it as a feminizing hormone). There were lower odds of interest among those with a graduate or professional degree (aOR, 0.70; 95% CI, 0.51–0.96;

vs college degree), those who were sterilized (aOR, 0.31; 95% CI, 0.12–0.79; vs not sterilized), and those who had ever used testosterone for gender affirmation (aOR, 0.72; 95% CI, 0.57–0.90; vs never users) (Table 3). When examining the association between education and over-the-counter progestin-only pill interest by age group, we found that those with a high school degree or less continued to have the highest interest by far. Except for those aged 35 to 44 years, individuals with a graduate or professional degree expressed interest in over-the-counter progestin-only pills less commonly than those with less education.

In univariable analyses, those who had faced challenges with contraceptive coverage because of their legal gender on their health insurance (vs never faced challenges) were more likely to report

FIGURE

Survey initiation, eligibility screening, and completion for study sample



The PRIDE Study, The Population Research in Identity and Disparities for Equality Study.

Grindlay. Transgender interest in over-the-counter progestin-only pills. *Am J Obstet Gynecol* 2024.

interest (64.7% vs 37.0%; $P=.03$). Individuals who did not have any questions about contraception were less likely to report interest than those who were somewhat or very comfortable asking their provider questions (30.9% vs 45.7%; $P=.005$) (Table 2).

Comment

Principal findings

Nearly half of transgender, nonbinary, and gender-expansive individuals in our sample were interested in using over-the-counter progestin-only pills. Our findings suggest that this population may be interested in over-the-counter progestin-only pills because of improved access owing to the ability to obtain it without a prescription or medical visit and the lack of estrogen in progestin-only pills.

Results in the context of what is known

Interest was relatively similar to that in a previous nationally representative survey of individuals who identified as female.² Higher interest among uninsured

individuals also mirrors previous research^{2,17} and emphasizes the appeal of greater access among those who lack prescription coverage and who face high appointment costs. Higher interest among those who had faced challenges with contraceptive coverage owing to their legal gender on their health insurance similarly indicates access barriers related to insurance coverage that an over-the-counter pill could help to address. However, affordable pricing is critical to realizing those benefits for transgender, nonbinary, and gender-expansive individuals, particularly given their lower socioeconomic status when compared with the general United States population.^{7,18,19}

Negative experiences and mistrust in healthcare settings may also motivate interest in over-the-counter access. Although our survey methodology prevents direct causal conclusions, previous research has found that young people generally are more likely to experience discrimination by healthcare providers,^{20,21} which may play a role in the

higher interest among younger participants in our sample. Furthermore, pelvic examinations can induce gender dysphoria for transgender, nonbinary, and gender-expansive individuals⁶ and are not medically necessary before taking oral contraception, yet many providers require them when prescribing oral contraception.²² Removing the clinical requirement may also be appealing for this reason.

Interest among those who wanted to avoid estrogen (both generally and as a feminizing hormone) indicates that the hormone makeup of progestin-only pills is an appealing feature for some. However, progestin-only pills can have gender dysphoric effects, such as chest or breast tenderness or changes to menses.^{6,23} Informing people about these potential effects is important so that transgender, nonbinary, and gender-expansive people can make educated choices. Ideally, multiple over-the-counter progestin-only pill formulations would be available for people to find one that works best for them.

Progestin-only pills may be of particular interest for several reasons. The small amount of estrogen in combined hormonal contraceptives has not been shown to undermine the masculinizing effects of testosterone taken for gender-affirming hormone therapy, and testosterone is not a contraindication to any contraceptive method.^{6,8} However, some transgender, nonbinary, and gender-expansive individuals want to avoid estrogen-containing methods because of possible side effects, such as chest or breast growth, bloating, and changes in menses.^{6,8,11} Progestin-only pills can also support gender affirmation by reducing or stopping menstrual bleeding without a procedure like inserting an intrauterine device, which can be both physically and psychologically invasive and stimulate gender dysphoria for some.⁶ Potential drawbacks of progestin-only pills include daily administration, lower contraceptive efficacy (when compared with long-acting methods), and possible gender dysphoric effects including chest or breast tenderness and breakthrough bleeding.⁶

TABLE 3

Logistic regression models of interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States

Independent variable and adjustment set to control for confounding	Interested in over-the-counter progestin-only pill use ^a		
	Odds ratio	95% confidence interval	P value
Model 1: age (y) (n=1415), no adjustment was necessary to estimate the total effect of this variable on interest in over-the-counter progestin-only pill use			
18–24	1.67	1.33–2.10	<.001 ^b
25–34 (ref)			
35–44	0.85	0.60–1.21	.37
45–49	0.49	0.22–1.11	.09
Model 2: education level (n=1381), adjusted for age and race and ethnicity			
High school degree or less	3.02	1.94–4.71	<.001 ^b
Some college, trade, or technical school	1.04	0.78–1.39	.77
College degree (ref)			
Some graduate or professional study	1.12	0.73–1.73	.60
Graduate or professional degree	0.70	0.51–0.96	.03 ^b
Model 3: currently employed (n=1383), adjusted for education			
Yes	0.97	0.75–1.26	.84
No (ref)			
Model 4: currently a student (n=1396), adjusted for age			
Yes	1.26	0.98–1.61	.07
No (ref)			
Model 5: marital status (n=1387), adjusted for age and education			
Single, never married	1.02	0.75–1.39	.88
Married, civil union, registered domestic partnership, or engaged (ref)			
Divorced, widowed, separated	1.23	0.71–2.13	.46
Other	0.58	0.24–1.45	.25
Model 6: has health insurance (n=1,392), adjusted for employment, student status, and marital status			
Yes (ref)			
No or don't know	1.91	1.24–2.93	.003 ^b
Model 7: considers self at risk for unintended pregnancy (n=1400), adjusted for age, marital status, and participant sterilization			
Yes	1.33	0.96–1.85	.08
No or do not know (ref)			
Model 8: current oral contraceptive use (n=1394), adjusted for marital status, participant sterilization, insurance status, and considering self at risk for future unplanned pregnancy			
Yes	1.69	1.17–2.44	.005 ^b
No or do not know (ref)			

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(continued)

TABLE 3

Logistic regression models of interest in over-the-counter progestin-only pill use among an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States (continued)

Independent variable and adjustment set to control for confounding	Interested in over-the-counter progestin-only pill use ^a		
	Odds ratio	95% confidence interval	P value
Model 9: ever progestin-only pill use (n=1413), adjusted for ever having been pregnant and wanting to avoid estrogen generally			
Yes	2.32	1.70–3.17	<.001 ^b
No or do not know (ref)			
Model 10: is sterilized or has had tubes tied, ovaries removed, and/or uterus removed or other procedure that makes getting pregnant impossible (n=1385), adjusted for age, education, marital status, and ever having been pregnant			
Yes	0.31	0.12–0.79	.01 ^b
No (ref)			
Model 11: ever use of testosterone for gender affirmation (n=1415), adjusted for age and wanting to avoid estrogen generally			
Yes	0.72	0.57–0.90	.004 ^b
No (ref)			
Model 12: has ever used contraception for gender affirmation (n=1413), adjusted for age			
Yes	1.31	0.93–1.86	.13
No or do not know (ref)			
Model 13: Wants to avoid estrogen generally (n=1,415), adjusted for age and ever having used testosterone			
Yes	1.32	1.04–1.67	.02 ^b
No or do not know (ref)			
Model 14: wants to avoid estrogen because they view it as a female or feminizing hormone (n=1413), adjusted for age and ever having used testosterone			
Yes	1.72	1.36–2.19	<.001 ^b
No or do not know (ref)			
Model 15: ever felt that opinions about their gender identity and/or sexual orientation from healthcare staff have negatively impacted them in a healthcare setting (n=1305), adjusted for age, education, and region			
Yes	1.08	0.86–1.36	.50
No or do not know (ref)			

We used the directed acyclic graph approach¹⁶ to select covariates for each model. Supplemental Appendix B contains the directed acyclic graphs.

^a Participants were considered interested in over-the-counter progestin-only pill use if they reported "yes" (vs "no" or "don't know") to a question asking if they would use a birth control pill that only had progestin that they could buy over the counter (without a prescription); ^b Indicates $P < .05$ in logistic regression.

Grindlay. Transgender interest in over-the-counter progestin-only pills. *Am J Obstet Gynecol* 2024.

Lower interest among those who use testosterone for gender affirmation may be related to assessments of unintended pregnancy risk and/or may be influenced by the duration of testosterone use. Those who have been on testosterone longer may experience reduced or no

menstrual bleeding and have a lower perceived need for contraception.^{6,10} The lack of association between interest in over-the-counter progestin-only pills and self-assessed risk of unintended pregnancy or having had penis-in-vagina sex in the previous year suggests

that nonpregnancy-related contraceptive benefits, such as menstrual suppression, are of greater importance.

Clinical implications

These findings highlight transgender, nonbinary, and gender-expansive

individuals as a population interested in and who may benefit from over-the-counter oral contraceptive availability. This study adds to our understanding of the potential impacts of newly enhanced, over-the-counter progestin-only pill access. Its availability may appeal to those who face reproductive health and prescription access barriers and those who want a contraceptive method that does not contain estrogen and it may improve contraceptive access for this population. These findings highlight the importance of transgender and gender-expansive representation in the marketing of over-the-counter progestin-only pills and because real-world use may be driven by how much they feel the product is applicable to them.

Research implications

With an over-the-counter progestin-only pill now approved in the United States, future research should explore real-world uptake and experiences among transgender, nonbinary, and gender-expansive individuals.

Strengths and limitations

Our study has several limitations. First, we used convenience sampling, because there were no population-based sampling frames for transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States. Our results, therefore, may not be generalizable to all transgender, nonbinary, and gender-expansive individuals. In addition, passive recruiting can lead to participation bias in that those who elected to participate are more open to medical interventions (or hold other opinions) than nonparticipants. The high proportion of survey participants with health insurance (91.9%) indicates that our sample is less marginalized than the general population of transgender, nonbinary, and gender-expansive individuals. Therefore, our ability to assess the effect of insurance status on interest in over-the-counter progestin-only pills may be less robust and our findings may underestimate interest in over-the-counter progestin-only pills. Another limitation is that the vast majority of the sample was White because of the

convenience sampling method. Further, some race and ethnicity categories had small sample sizes due to the numerous categories we included in the survey, which may have limited our ability to detect differences in interest by race and ethnicity. For our measure of sterilization, we were unable to distinguish between someone who had a procedure that would lead to both no possibility of pregnancy and no menstruation versus those who only had no possibility of pregnancy. The reasons that either of these 2 groups might be interested in an over-the-counter progestin-only pill or perceive its usefulness for their situation might vary considerably. A strength of our study includes the disaggregated data on race and ethnicity, which contributes to more accurate representation. Furthermore, our large sample size and analysis of transgender, nonbinary, and gender-expansive perspectives on over-the-counter progestin-only pill access provide important new information on the attitudes of this population.

Our survey was conducted before the US Food and Drug Administration approval of an over-the-counter progestin-only pill. Real-world interest and use may be higher or lower with approval now in place and will likely also be impacted by price and insurance coverage. Furthermore, this study was conducted before the COVID-19 pandemic, which changed the way many people interact with the health-care system and led to higher rates of telemedicine²⁴ and self-medication and care.²⁵ These changing attitudes and practices related to self-care may lead to higher levels of interest in and comfort with over-the-counter access today. This study was also conducted before the *Dobbs vs Jackson Women's Health Organization* Supreme Court decision in which the federal constitutional right to abortion was overturned, which may make people think differently about their need or desire to access contraception. Obstetrician-gynecologists reported increases in the number of people who sought contraception since the *Dobbs* ruling,²⁶ and this too may lead to even greater interest in over-the-counter progestin-only pill access than

we found at the time our survey was conducted. Finally, increasing restrictions on transgender care²⁷ may also drive more interest in over-the-counter care and self-managed care.

Conclusion

Transgender, nonbinary, and gender-expansive individuals are interested in over-the-counter progestin-only pill use, and its availability has the potential to improve contraceptive access for this population. ■

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Supplemental Appendix A Details on additional survey measures for an online survey of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States

Note: Text in curly brackets (*i.e.*, {})
indicates customizable survey text.

Customizable survey text:

“Next is a list of medical words for various body parts and experiences related to sex and fertility (the ability to get pregnant). We may ask you about these body parts in reference to your own body or to another person’s body, such as a sexual partner. For each word, please let us know if you use the word listed. If you use another word, please write it in. **To improve your overall survey experience, we will use your preferred words for each of the following items whenever possible in this survey, beginning AFTER this section. We will not be able to display your own words until AFTER this section is completed.**”

Customizable survey text—birth control:

“**Birth control** can be used for more than one reason. Some people use birth control to avoid getting pregnant. It can include using a condom, not having any sex (abstinence), taking a pill every day to prevent pregnancy, having been sterilized, having an implant put in your arm, or many other medications, devices, and/or practices. Some people use birth control for nonpregnancy related reasons, like gender-affirmation, clearing up their skin, reducing body hair, or preventing sexually transmitted infections.”

“After reading this definition, please tell us if you use this word, or what word you use instead.”

- Yes, I use the words "birth control"
- No, I use a different word. The word(s) I use instead of "birth control" is:
- Prefer not to say

Customizable survey text—pregnant:

“To be **pregnant** is to have cells growing/dividing in the uterus that could turn into a baby.”

“After reading this definition, please tell us if you use this word, or what word you use instead.”

- Yes, I use the word "pregnant"
- No, I use a different word. The word I use instead of "pregnant" is:
- Prefer not to say

Sex assigned at birth:

“What sex were you assigned at birth, for example on your original birth certificate?”

- Female
- Male
- Not listed (please specify):
- Prefer not to say

→ Based on write-in responses, we created two additional categories, presented in [Table 1](#) (“Intersex” and “Sex was not assigned at birth”)

Gender identity:

“If you had to choose from the list below, although we acknowledge that these categories may

not be ideal, what best describes your current gender identity at this time? Select all that apply.”

- Agender
- Cisgender Man (a person that identifies as a man and was assigned male sex at birth)
- Cisgender Woman (a person that identifies as a woman and was assigned female sex at birth)
- Genderqueer
- Man
- Non-binary
- Transgender Man
- Transgender Woman
- Two-Spirit (feel free to include your tribe’s specific language for your identity, if you would like):
- Woman
- Additional gender category, please specify:
- Prefer not to say

Sexual orientation:

“Do you consider yourself to be: (Select all that apply)”

- Asexual
- Bisexual
- Gay
- Lesbian
- Pansexual
- Queer
- Questioning
- Same-gender loving
- Straight/heterosexual
- Another sexual orientation (please specify):

Race and ethnicity:

“Which category(ies) best describe you? Select all that apply.”

- American Indian or Alaska Native - What tribe(s) are you affiliated with?:
- Black or African American
- Central Asian
- East Asian
- Hispanic or Latinx
- Middle Eastern or North African
- Native Hawaiian and Pacific Islander
- South Asian
- South East Asian
- White
- Unknown
- Not listed, please tell us:
- None of these

Race and ethnicity were included in our analyses given racial and ethnic disparities in contraceptive care resulting from systemic racism and oppression.¹

→ For our regression analyses, we combined the following race categories into one “Asian and Pacific Islander” category: “Central Asian”, “East Asian”, “Native Hawaiian and Pacific Islander”, “South Asian”, and “South East Asian”

Considers self at risk for unintended pregnancy:

“Do you consider yourself to be at risk for getting {pregnant} at a time when you do not want to be pregnant (unintended {pregnancy})?”

- Yes
- No

- I don't know

Ever sterilized

"Due to the limitations in electronic survey design and the many options below, we are unable to use your preferred words for this question and will instead use medical terms."

"Which methods of birth control/pregnancy prevention have you EVER used FOR THE PURPOSE OF PREGNANCY PREVENTION? Select all that apply."

- [List of contraceptive options was included]
- **"Sterilization (I'm sterilized, or I've had my tubes tied, ovaries removed, and/or uterus removed or other procedure which makes getting pregnant impossible)** (sterilization involves a surgical procedure that closes or blocks the fallopian tubes so eggs and sperm cannot meet and result in pregnancy)"

Ever used contraception for gender affirmation:

"Now we would like to ask you a few questions about {birth control}. As a reminder, '{birth control}' can be used by people for different things. Some people use {birth control} to avoid getting {pregnant}. Other reasons people use {birth control} include things like gender-affirmation, clearing up their skin, reducing body hair, or preventing sexually transmitted infections."

"Have you ever used a method of {birth control}, for any reason?"

- Yes
- No
- I don't know

If YES: "What are the reasons that you have used birth control? Select all that apply."

- To affirm my gender
- To avoid getting a sexually transmitted infection (STI) from someone else
- To avoid spreading a sexually transmitted infection (STI) that I have
- To avoid symptoms associated with my period like: chest tenderness, bloating, acne,
- Pain from cramping, heavy bleeding (sometimes referred to as premenstrual syndrome or PMS)
- To stop having a period
- To prevent pregnancy
- Prevent hair growth (hirsutism)
- To reduce chronic pelvic pain (including endometriosis)
- To treat another medical condition
- Not listed (please specify):
- None of these

→ We coded participants as ever using contraceptives for gender affirmation if they responded, "To affirm my gender"

Wants to avoid estrogen

"Does whether or not a {birth control} method releases estrogen in your body matter to you?"

- Yes
- No
- I don't know

→ We coded participants as wanting to avoid estrogen generally if they responded "Yes" (*versus* "No" or "I don't know")

IF YES: "Why does it matter to you if estrogen is released in your body? Select all that apply."

- I do not want to use estrogen because it is a "female" hormone
- I do not want to use estrogen because of its "feminizing" effects
- Another reason that is not listed (please describe):
- I don't know

→ We coded participants as wanting to avoid estrogen because they viewed it as a "female" or "feminizing" hormone if they responded, "I do not want to use estrogen because it is a 'female' hormone" or "I do not want to use estrogen because of its 'feminizing' effects" or if they indicated concerns in open-response text about it counteracting testosterone they are taking.

Ever felt that opinions about their gender identity and/or sexual orientation from healthcare staff have negatively impacted them in a healthcare setting

"In a health care setting, have you ever felt that opinions about your gender identity and/or sexual orientation from health care staff have negatively impacted you (whether these opinions were said out loud or suggested with body language)?"

- Yes - my gender identity
- Yes - my sexual orientation
- Yes - my gender identity AND my sexual orientation
- No
- I don't know

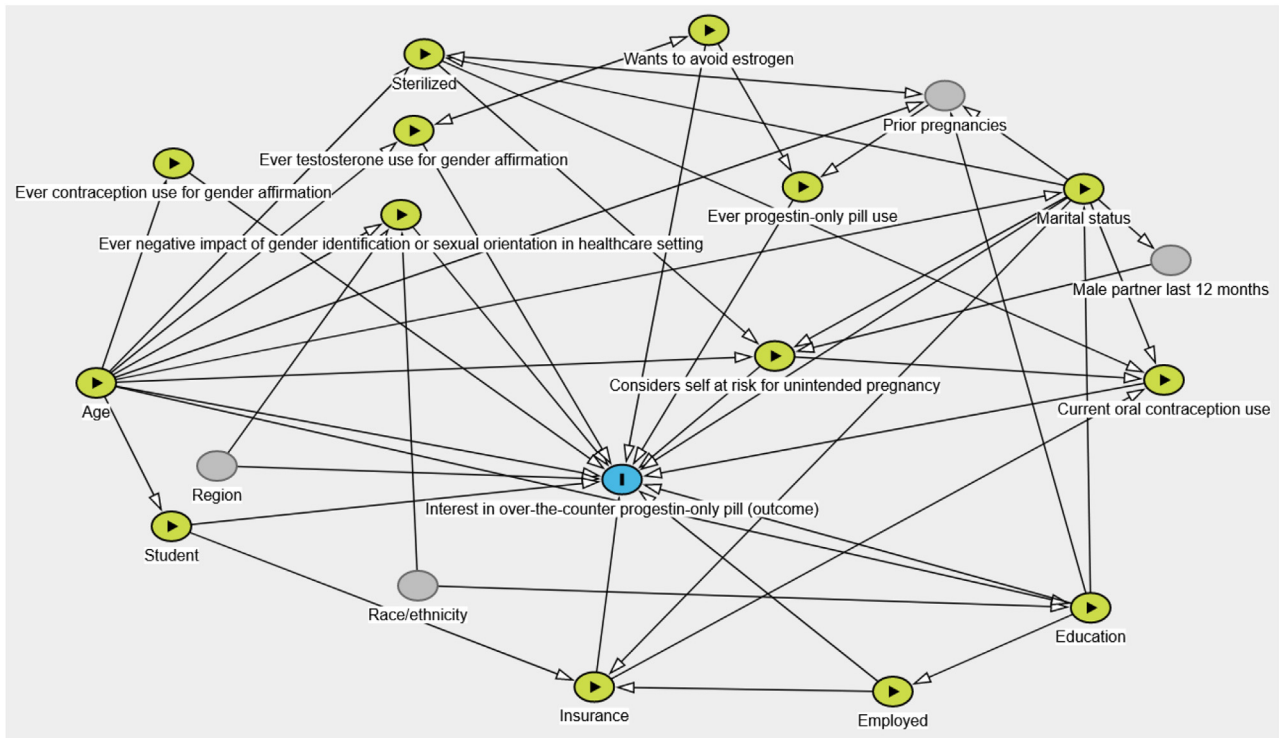
→ We coded participants as having negative experiences in healthcare settings related to gender identify and/or sexual orientation if they responded "Yes - my gender identity", "Yes - my sexual orientation", or "Yes - my gender identity AND my sexual orientation" (*versus* "No" or "I don't know")

Supplementary Reference

1. Key K, Wollum A, Asetoyer C, et al. Challenges accessing contraceptive care and interest in over-the-counter oral contraceptive pill use among Black, Indigenous, and people of color: an online cross-sectional survey. *Contraception* 2023;120:109950.

SUPPLEMENTAL APPENDIX B

A summary directed acyclic graph that represents the study investigators' understanding of the relationships between variables that influence interest in over-the-counter progestin-only pill use for an online sample of transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States



NOTE: This directed acyclic graph is a crude model of factors that influence interest in over-the-counter progestin-only pill use; the authors created individual directed acyclic graphs for each exposure of interest. For brevity, we present only the global directed acyclic graph here, not each individual directed acyclic graph. We ran separate logistic regression models for each exposure of interest. We identified potential confounders for each exposure by constructing separate directed acyclic graphs for each exposure using DAGitty version 3.0 (Nijmegen, The Netherlands). We selected sociodemographic and reproductive health variables from Tables 1-2 as candidates for model inclusion, all known to be confounders of or strong influencers of interest in contraception.

Legend:

- = outcome variable
- = exposures of interest (each explored in a separate regression model)
- = other variable (potential confounder)