Perceived barriers of primary care providers for the implementation of biomedical HIV prevention strategies in Puerto Rico

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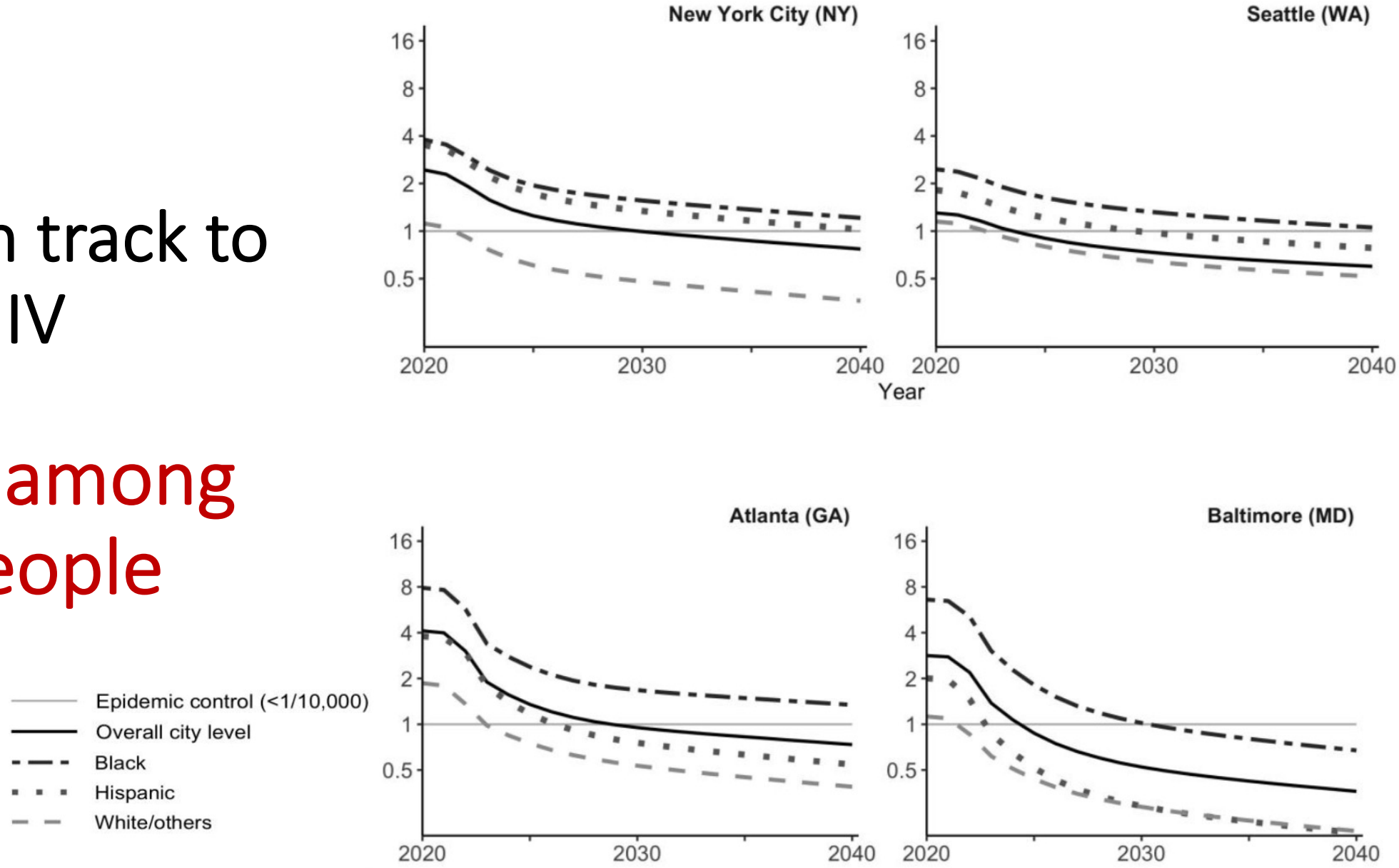
We are on track to end the HIV epidemic

but only among White people



Zang et al, 2020

- San Juan, Puerto Rico (PR) is one of the 57 geographic areas prioritized on the first phase of the Ending the HIV Epidemic (EHE) initiative.

- The estimated HIV prevalence in the general adult population is nearly 1.1% and 7.3% among sexual minority men.

- PR has one of the highest levels of HIV status unawareness among SMM in the U.S. (23%) and the lowest PrEP uptake reported in the U.S.

- Puerto Rico experiences structural factors that challenge the development of local and culturally appropriate responses.

Documented barriers to PrEP uptake among eligible people

- Lack of information about the cost of treatment
- Mental health issues and drug misuse
- Uncertainty concerning the side effects of PrEP
- Influence of romantic/sexual partners
- Perceived threats related to PrEP adherence/persistence
- Difficulties in navigating healthcare system

Nieto et al., 2020; Ogunbajo et al., 2021

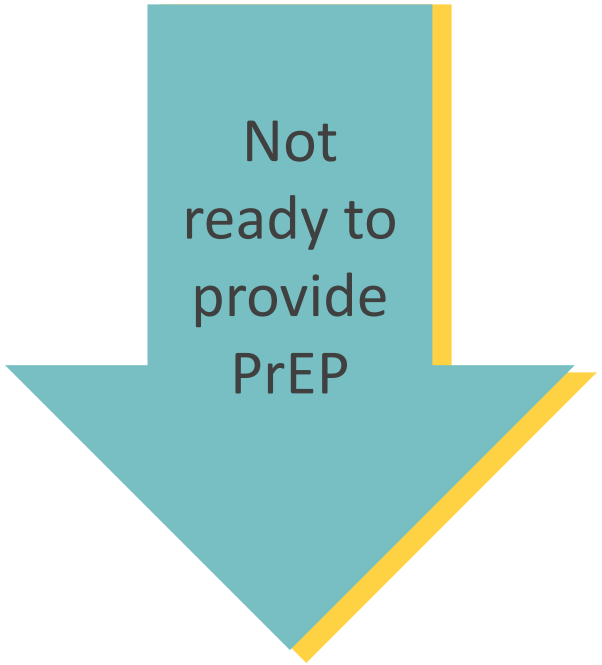
Healthcare professionals and PrEP: **What is needed for PrEP uptake?**

- Acknowledgement of patients' level of health literacy
- Efective communication
- Comfort in engaging in conversations about sexuality
- Knowledge about PrEP
- Knowledge about PrEP access

Nieto et al., 2020; Ogunbajo et al., 2021

PrEP in Puerto Rico: 2015 Data

Opinion leaderse and service providers:



4 out of 10 providers know about PrEP

Puerto Rico Department of Health, 2015

Design and methods

- Survey to estimate training needs
  - Included validated and culturally appropriate measures
- Data were collected online using a secured platform
- Participants were recruited via email
- Consent was required of all participants
- Data were collected from June 24 through August 30, 2021

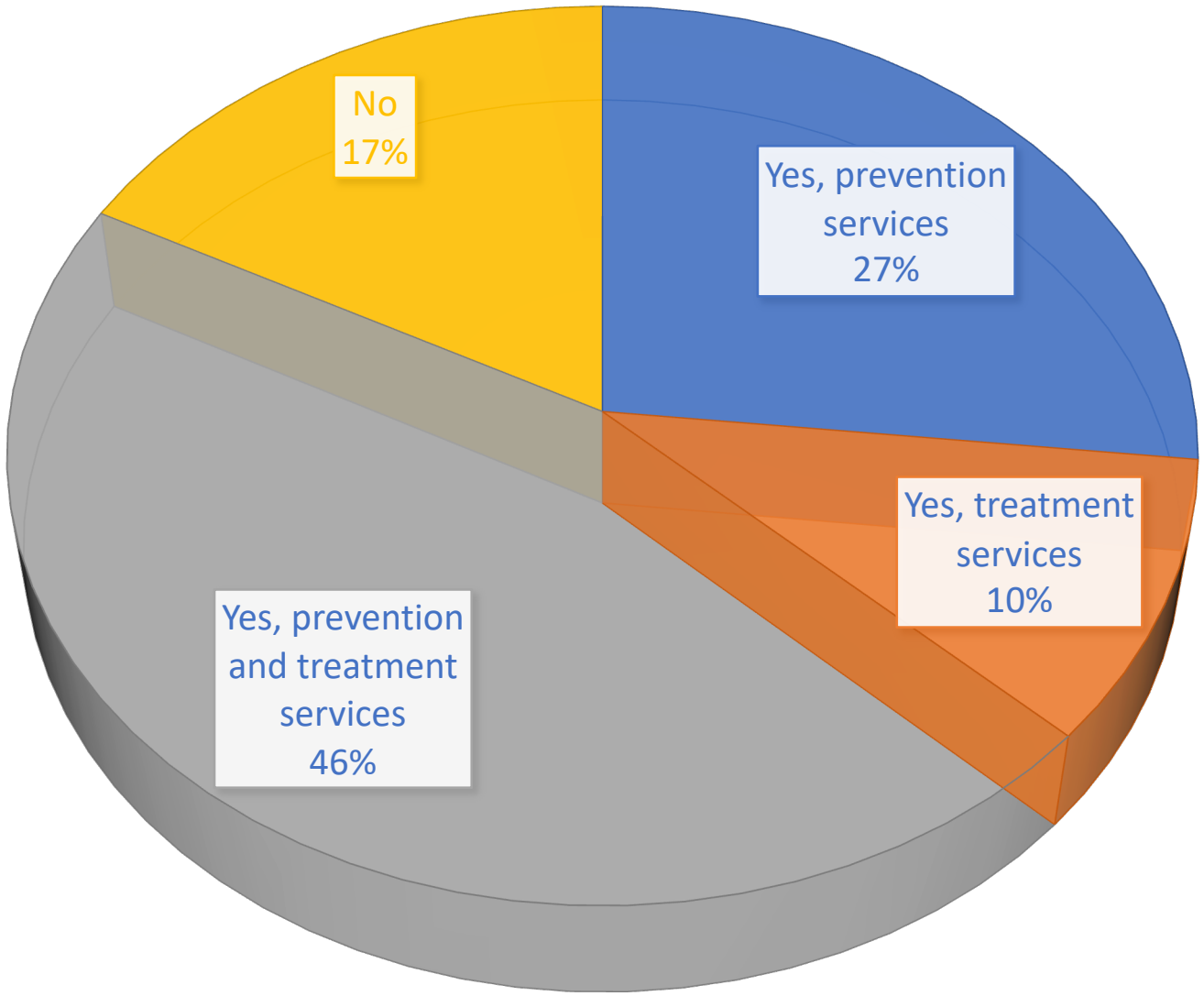
Sample characteristics

- **N=225** eligible participants completed the survey
- Mean age of participants was **35 years** (SD=9.9)
- **68.9%** self-identified as **women**
- 17.8% self-identified as being part of sexual minorities
- **37.3%** have experience providing heathcare services in **private organizations**, 27.7% in community organizations, and 23.1% in public organizations
- Approximately have spent **11 years** at their workplace

Participants' professions

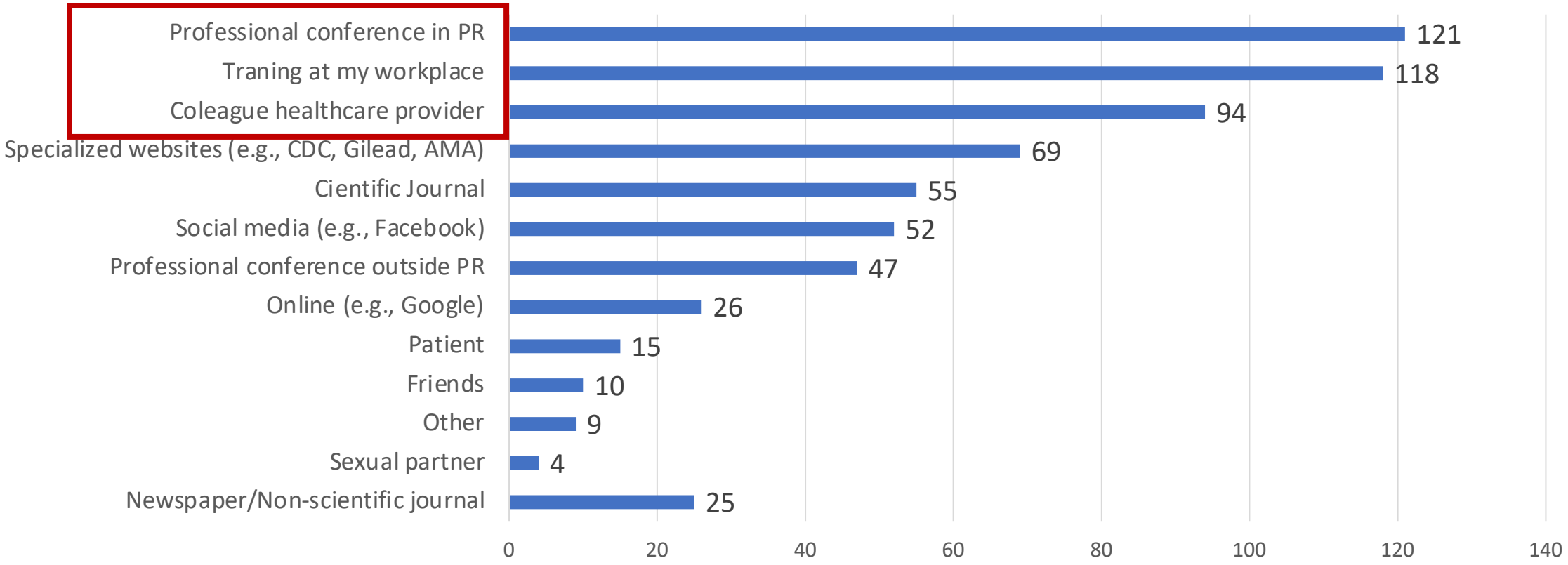
- Medicine
- Case Management
- Nursing
- Health Education
- Administrative Support

Experience providing HIV services



94.2% knew of PrEP before completing the survey

Sources of information about PrEP



On average, they have participated in **8 hours** of continuing education (range=1-23hrs)

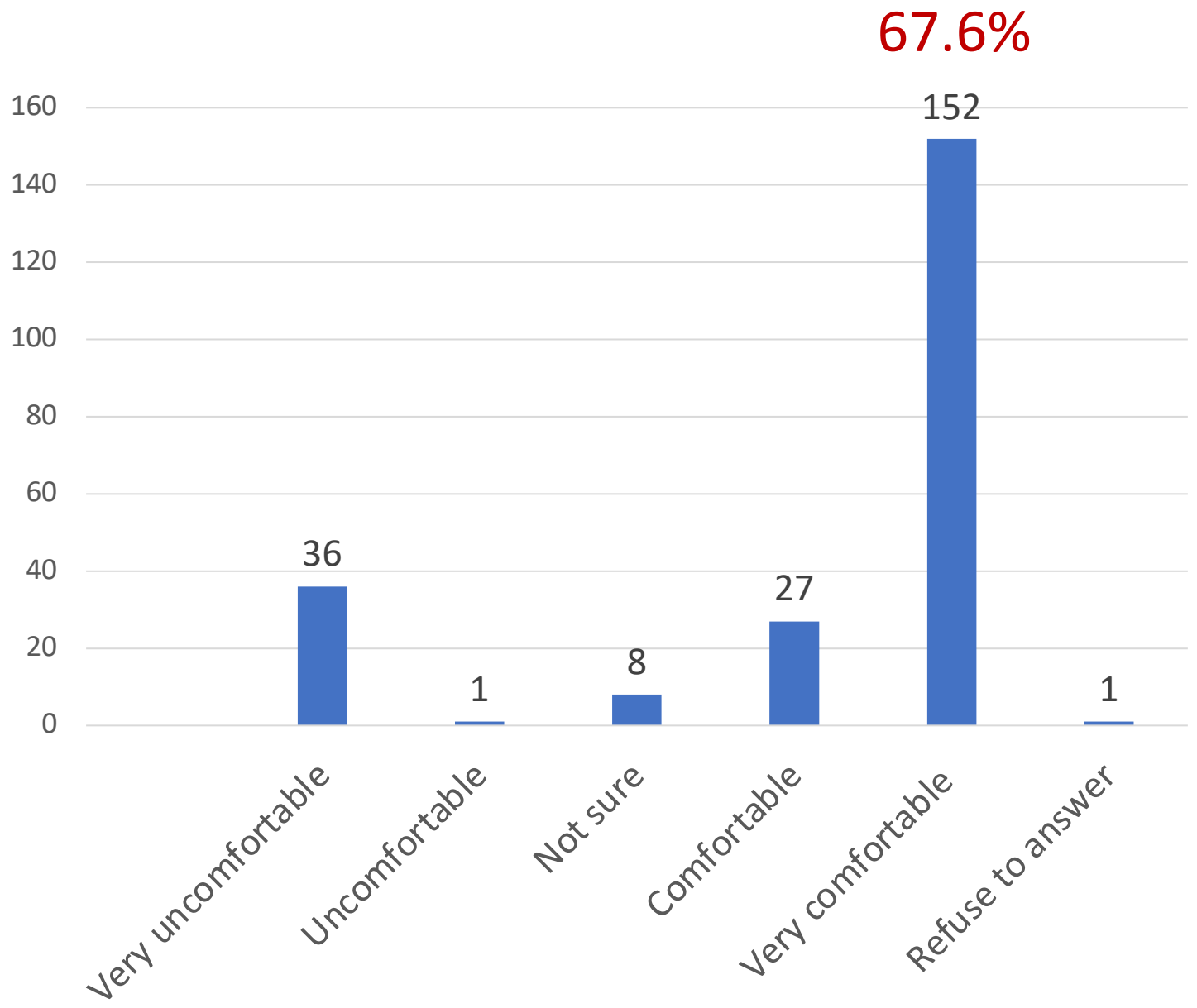
Perception about PrEP use

Item	Totally disagree		Disagree		Agree		Totally agree	
	n	%	n	%	n	%	n	%
The use of these medications for HIV prevention may impede using them for HIV treatment.	82	36.4	105	46.7	30	**13.3**	8	**3.6**
PrEP availability may cause that people will stop having safe sex practices, such as using condoms.	25	11.1	76	33.8	112	**49.8**	12	**5.3**
If PrEP is not use correctly, it may increase the risk for HIV infection.	10	4.4	28	12.4	94	**41.8**	93	**41.3**
More research is needed before promoting PrEP use.	38	16.9	92	36.4	83	36.9	22	9.8
PrEP use can help people who have challenges negotiating safe sexual practices with their partners.	11	4.9	28	12.4	118	52.4	68	30.2
Even tought PrEP is effective, the cost of treatment is a barrier for those who need it the most.	9	4.0	28	12.4	116	**51.6**	72	**32.0**
If a person uses PrEP means it means they are promiscouous.	114	64.0	76	33.8	2	0.9	3	1.3
Using PrEP can be associated with being homosexual.	150	66.7	57	25.3	13	5.8	5	2.2

Attitudes towards PrEP

Premise	Highly disagree		disagree		Neutral		agree		Highly agree	
	n	%	n	%	n	%	n	%	n	%
It is more appropriate to provide PrEP in STI clinics than in primary care health centers.	46	20.4	75	33.3	53	23.6	37	16.4	14	6.2
It is more appropriate to provide PrEP in HIV-specialized clinics than in primary care health centers.	42	18.7	69	30.7	50	22.2	41	18.2	23	10.2
PrEP use will increase the resistance of medications against HIV	43	19.1	90	40.0	77	34.2	14	6.2	1	0.4
I am worried that PrEP is not effective	66	29.3	73	32.4	49	21.8	30	13.3	7	3.1
PrEP use will cause a decrease in federal funds to treat HIV	73	32.4	76	33.8	66	29.3	6	2.7	4	1.8
Before prescribing PrEP, non-biomedical (behavioral) interventions should be tried to prevent HIV	16	7.1	30	13.3	74	32.9	73	32.9	32	14.2
In the case of an HIV-negative patient who is in a relationship with an HIV-positive partner, the HIV-positive partner should be treated with anti-retroviral therapy (ART) instead of prescribing PrEP.	30	13.3	65	28.9	69	30.7	38	16.9	23	10.2
In the case of an HIV-negative patient who is in a relationship with an HIV-positive partner, the HIV-positive partner should be treated with anti-retroviral therapy (ART) before prescribing PrEP.	25	11.1	54	24.0	69	30.7	41	18.2	36	16.0
I am worried about the possible side effects of PrEP	13	5.8	31	13.8	90	40.0	71	31.6	20	8.9

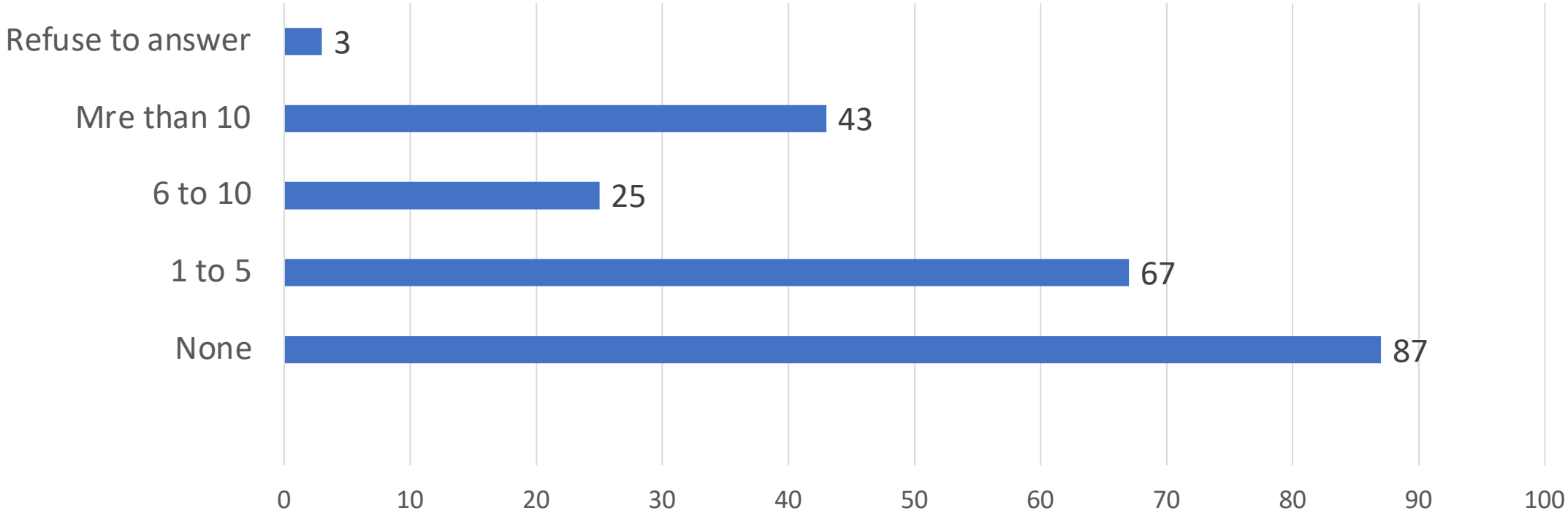
Comfort with patients potentially using PrEP



Conversations about PrEP with patients

- 74.2% Indicated feeling very comfortable talking about sexual practices
- 80.9% indicated feeling very comfortable talking about PrEP

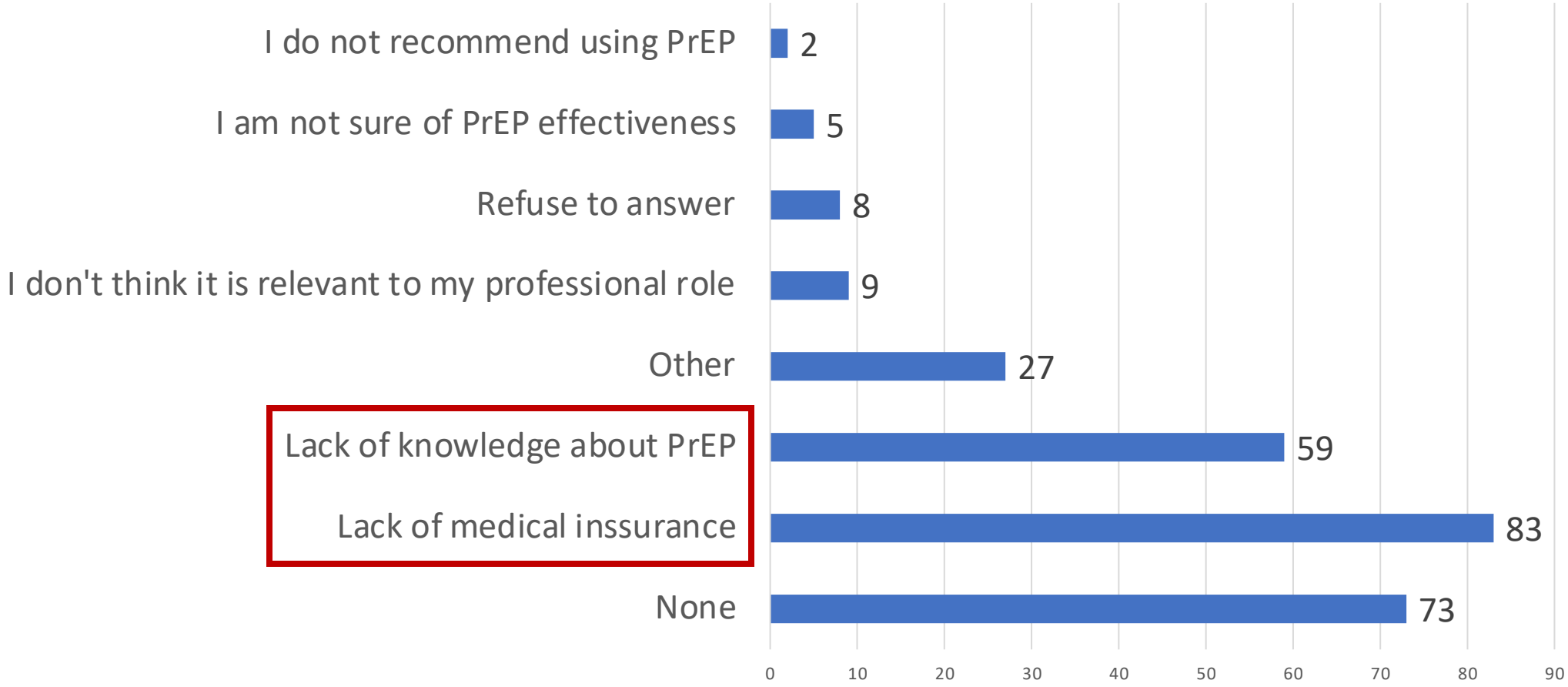
Amount of patients that have asked about PrEP in the past 12 months



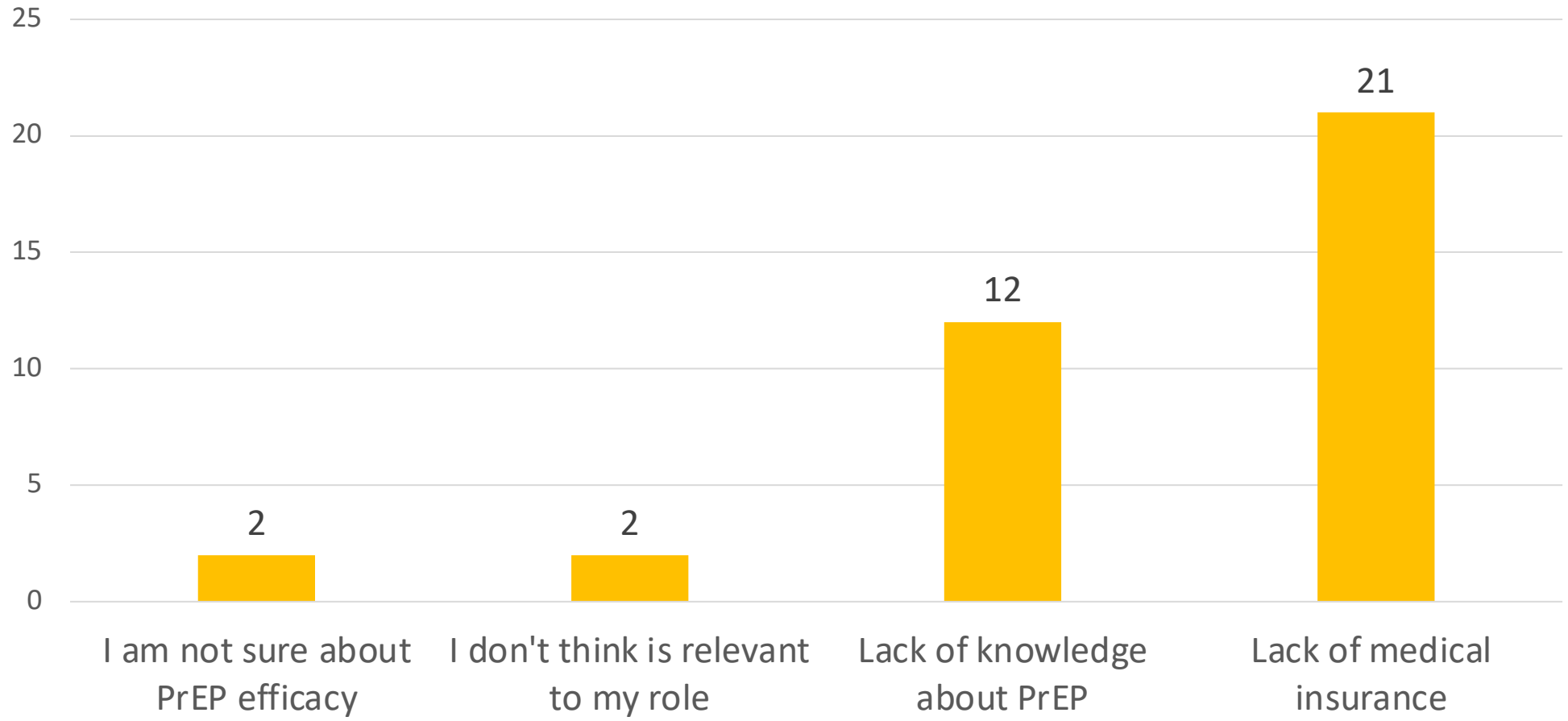
The conversation about PrEP with patients

- How did the conversation about PrEP started?
  - 44.9% was initiated by patients
  - 43.5% indicated having started the conversation considering that the patient was a good candidate for PrEP
- In the past 12 months, they have had an average of 10 patients on PrEP (DS=21.5; range 1-103).

Barriers to recommending PrEP



Physicians' barriers to recommend PrEP



The role of religiosity in PrEP implementation

Predictor variables	Univariate Models OR (95% CI)	Multivariate Model 1 OR (95% CI)	Stratified Model** OR (95% CI)
Composite score (all attitudes)	1.173 (1.030, 1.336)* Cronbach's α= 0.67	—	—
Profession (all providers vs. MDs)	3.044 (1.280, 7.24)*	—	—
Hours of training on PrEP	0.915 (0.870, 0.962)*	0.922 (0.876, 0.970)*	—
It's more suitable to provide PrEP in STI clinics than in Primary Health Centers	2.667, (1.045, 6.803) *	—	—
Non-biomedical interventions must be considered to prevent HIV before prescribing PrEP	2.361 (1.120, 4.976)*	1.879 (0.858, 4.115)	—
It's more suitable to provide PrEP in HIV clinics than in Primary Health Centers	2.188 (0.970, 4.935)	—	**High religiosity** 0.1 (0.0006, 1.712) **Low religiosity** 3.2 (1.3, 7.8)*

**Statistically significant ($p<0.05$)*
***Stratified by religiosity levels*

Santiago, Monroe & Rodriguez-Diaz, 2023

PrEP training needs

91.6% of participants are interested in receiving training about PrEP

Premise	Very poor		poor		moderate		good		Very good	
	n	%	n	%	n	%	n	%	n	%
Knowledge about the efficacy of PrEP	17	7.6	19	8.4	73	32.4	68	30.2	48	21.3
Knowledge about the side effects of PrEP	21	9.3	38	16.9	74	32.9	54	24.0	37	16.4
Ability to inform patients about PrEP	13	5.8	23	10.2	58	25.8	74	32.9	56	24.9
Ability to identify key populations for PrEP use	9	4.0	9	4.0	63	28.0	79	35.1	65	28.9
Capacity to determine if PrEP should be recommended	12	5.3	12	5.3	58	25.8	76	33.8	66	29.3

Opportunities for PrEP implementation in PR

- Knowledge about PrEP has increased among healthcare providers.
- Negative attitudes and perceptions towards PrEP use prevail.
- There is interest in receiving training about PrEP, and the areas of need have been identified.
- It's all about the cost?!: There is an urgent need to share clear information about access to medications and coverage of associated costs of PrEP.

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