

Sexually transmitted infection screening services: Access discussion

Serviços de rastreamento de infecções sexualmente transmissíveis: Discussão de acesso

Servicios de detección de infecciones de transmisión sexual: Discusión de acceso

RESUMO

Objetivo: Descrever e comparar o perfil de usuários de dois serviços de rastreamento de Infecções Sexualmente Transmissíveis. Métodos: Estudo transversal com dados primários colhidos entre 2020 e 2021. Os usuários foram atendidos em um ambulatório de Profilaxia Pré-Exposição e em um Centro de Testagem e Aconselhamento. Teve aprovação ética, CAAE: 07448818.0.1001.5558. Foram realizadas a análise descritiva e regressão logística. Resultados: Participaram do estudo 219 pacientes. Os serviços atendem a populações diferentes quanto aos perfis socioeconômicos e comportamentais. Evidenciou-se que o ambulatório atende pacientes que moram em locais mais centrais, tiveram 5.3 a chance de serem gays e 3.5 vezes a chance de praticar sexo em grupo e 70% a chance de ter ensino superior completo. Conclusão: Os serviços apresentam clientela diferente, portanto eles necessitam ser estrategicamente localizados para conseguir dar acesso às populações vulneráveis, tanto economicamente quanto comportamentais, para conter as taxas dessas doenças em ascensão no país.

DESCRITORES: Infecções sexualmente transmissíveis; Programas de triagem diagnóstica.

ABSTRACT

Objective: To describe and compare the profile of users of two Sexually Transmitted Infections screening services. Methods: Cross-sectional study with primary data collected between 2020 and 2021. Users were seen at a Pre-Exposure Prophylaxis outpatient clinic and at a Testing and Counseling Center. It had ethical approval, CAAE: 07448818.0.1001.5558. Descriptive analysis and logistic regression were performed. Results: 219 patients participated in the study. The services serve different populations in terms of socioeconomic and behavioral profiles. It was evident that the outpatient clinic serves patients who live in more central locations, had a 5.3 times the chance of being gay and 3.5 times the chance of practicing group sex and 70% the chance of having completed higher education. Conclusion: Services have different clientele, so they need to be strategically located to be able to give access to vulnerable populations, both economically and behaviorally, to contain the rates of these diseases on the rise in the country.

DESCRIPTORS: Sexually transmitted infections; Diagnostic screening programs.

RESUMEN

Objetivo: Describir y comparar el perfil de los usuarios de dos servicios de tamizaje de Infecciones de Transmisión Sexual. Métodos: Estudio transversal con datos primarios recolectados entre 2020 y 2021. Los usuarios fueron atendidos en un ambulatorio de Profilaxis Pre-Exposición y en un Centro de Pruebas y Consejería. Contó con aprobación ética, CAAE: 07448818.0.1001.5558. Se realizó análisis descriptivo y regresión logística. Resultados: 219 pacientes participaron en el estudio. Los servicios atienden a diferentes poblaciones en términos de perfiles socioeconómicos y conductuales. Se evidenció que el ambulatorio atiende a pacientes que viven en localidades más céntricas, tenían 5,3 veces la posibilidad de ser gay y 3,5 veces la posibilidad de practicar sexo en grupo y 70% la posibilidad de haber terminado la educación superior. Conclusión: Los servicios tienen una clientela diferente, por lo que es necesario ubicarlos estratégicamente para poder dar acceso a las poblaciones vulnerables, tanto económica como conductualmente, para contener los índices de estas enfermedades al alza en el país.

DESCRIPTORES: Infecciones de transmisión sexual; Programas de cribado diagnóstico.

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Patrícia Matias Pinheiro

Nurse at the Brazilian Company of Hospital Services – EBSERH, Brazil. Doctoral student at the Graduate Program in Tropical Medicine, Faculty of Medicine, University of Brasília (UnB), Brasília (DF), Brazil. University of Brasília.
ORCID: 0000-0002-0167-4782

Nathália Lima Pedrosa

Nurse at the Blood Center Foundation of Brasília. Doctoral student at the Graduate Program in Tropical Medicine, Faculty of Medicine, University of Brasília (UnB), Brasília (DF), Brazil

ORCID: 0000-0002-5945-7297

Willdo Navegantes de Araújo

Professor at the Center for Tropical Medicine and Faculty UnB Ceilândia University of Brasília, Brasília, (DF), Brazil. Consultant National Institute for Science and Technology for Health Technology Assessment, Porto Alegre, RS, Brazil.

ORCID: 0000-0002-6856-4094

INTRODUCTION

There are an estimated 374 million new sexually transmitted infections (STIs) and 2.3 million people die annually as a result of these diseases.¹ It is a global public health challenge, especially in Africa and Latin America, which need greater attention and health prevention actions.²

This lack of control is not restricted to vulnerable countries. Global prevalence of syphilis in men who have sex with men (MSM), between the years 2000 and 2020, it was 7.5%, ranging from 1.9% in Australia, 10.0% in New Zealand and 6% in Latin America and the Caribbean.³ The burden of these diseases has disproportionately affected some populations, such as MSM and sex workers. For example, MSM in the United States in 2017 comprised 68.2% of syphilis cases and 38.5% of gonorrhea cases. There is an estimate that 13.3 to 25% of this population is infected with at least one bacterial STI.^{1,4}

There are STI screening programs, especially the Testing and Counseling Centers (CTA) and Pre-Exposure Prophylaxis for HIV (PrEP) outpatient clinics. CTAs were created in the 1980s as one of the strategies to control the HIV epidemic, with the main objective of offering confidential and anonymous anti-HIV, syphilis and hepatitis testing.⁵ PrEP is also a more recent HIV prevention strategy, with the daily use of antiretrovirals in order to reduce the risk of acquiring the infection. In 2019, there were around 626,000 PrEP users in 77 countries⁶, starting in Brazil in 2018.⁷ Indirectly, it is also a screening service

for STIs, as users of these services are systematically tested. It should be noted that, according to Brazilian policy, some population segments are a priority for using PrEP, they are: gay men, MSM, transgender people, sex workers and HIV serodiscordant partnerships.⁷

Thus, considering STI testing services, although with different missions, knowing the profile of users helps to structure them to the needs of the population served, in order to guarantee or increase accessibility to them, especially to the most vulnerable populations, providing increased testing, diagnosis, treatment and, in this way, interrupting transmission chains.

Therefore, this study aimed to describe the profile of users of two STI screening services in the Federal District and the factors associated with the difference in profile, if any.

METHODS

It is an analytical cross-sectional study, using primary data collected between 2020 and 2021. The sites were a PrEP service, offered at a tertiary, university hospital and a CTA, both public, located in the central region of the DF.

The population, sampled for convenience, consisted of patients treated at the aforementioned services, aged 18 years or older, residing in the Federal District, who agreed to participate in the study after signing the free and informed consent form. Pregnant women and people unable to answer the questionnaire were excluded. The criteria for inclusion in the PrEP service followed the same proposal as the national po-

lity.⁷ The CTA works on demand. The semi-structured and pretexted interview was prepared in REDCAP and conducted by trained interviewers.

The outcome was the users' type of service and the independent variables were individual, sociodemographic, related to lifestyle and behavior, and health conditions. Descriptive analysis was performed. χ^2 (or Fisher's Exact) was used for categorical variables and Student's t test (or Wilcoxon test) for continuous variables to analyze the difference between services. OddsRatio(OR) and 95% confidence intervals (95% CI) were calculated.

Multiple logistic regression was used to calculate the adjusted OR (the OR) and to control for confounding. Variables whose p value in the bivariate analysis was $p < 0.01$ were chosen. From these, the variables that were part of the eligibility criteria for people to participate in the PrEP outpatient clinic were removed. A thematic map was also constructed with the distribution by administrative region (AR) of patients' residence.

The significance level was 5%. Missing data were excluded from the analysis. Jamovi software, version 2.2.5. and QGIS, version 3.24.2 were used. The study was approved by the CEP of the Faculty of Medicine of the University of Brasília (CAAE: 07448818.0.1001.5558.).

RESULTS

128 users participated in the CTA, with a mean age of 31.5 years (sd: 10.48), 44% reported being gay and with an average income of R\$ 3,054 reais (sd: R\$ 3,245.13). In PrEP, 91 people

participated, with a mean age of 33.7 years (sd: 8.1), mean income of R\$ 7,048.7 reais (sd: R\$ 10,606.66) and 84.6% reported being gay. There was a difference in relation to sex, sexual orientation and education, and there was no difference

in age group, race/color, marital status (Table 1).

Figure 1 evaluated the distribution of place of residence ($p < 0.01$). In the CTA they were residents of more distant AR and in the PrEP more central. Although

there is this difference, there is a predominance of patients residing in the Plano Piloto.

Regarding lifestyle and behavior (Table 2), there was a difference in having used PEP, having had symptoms, STIs

Table 1- Profile of patients using PrEP and CTA, DF, Brazil, 2021.

Variables	PREP (n=91)		CTA (n=128)		OR	CI (95%)	P value
	n	%	n	%			
Gender (n=91; n=128)							
Female	3	3.3	17	13.0	-		
Male	88	96.7	114	87.0	0.2	0.0 a 0.8	0.02
Race/color (n=90; n=128)							
Brown	33	36.7	58	45.3	-		
White	33	36.7	31	24.2	0.5	0.2 a 1.0	0.06
Black	19	21.1	33	25.8	0.9	0.4 a 2.0	0.97
Yellow	3	3.3	2	1.6	0.3	0.0 a 2.4	0.30
Indigenous	2	2.2	4	3.1	1.1	0.2 a 6.5	0.80
Education (n=91; n=126)							
Up to Complete Elementary School	3	3.3	27	21.4	-		
Complete High School	23	25.3	66	52.4	0.3	0.1 a 1.1	0.06
Complete Higher Education	65	71.4	33	26.2	0.1	0.0 a 0.4	<.001
Marital Status (n=91; n=128)*							
Single	66	72.5	109	85.2	-		
Married	9	9.9	5	3.9	0.3	0.1 a 1.0	0.06
Divorced	6	6.6	4	3.1	0.4	0.1 a 1.4	0.28
Stable Union	10	11.0	8	6.3	0.4	0.1 a 1.2	0.14
Widowed	0	0.0	2	1.6	-	-	1.20
Internet access (n=78; n=128)							
Yes	77	98.7	107	90.7	-		
No	1	1.3	12	9.3	7.9	1.0 a 61.9	0.05
Age Group (n=91; n=127)							
Between 18 and 29 y/o	30	36.6	66	56.9	-		
Between 30 and 44 y/o	52	63.4	46	39.7	0.4	0.2 a 0.7	0.00
Over 45 y/o	9	9.9	15	11.8	0.7	0.3 a 1.9	0.56
Sexual orientation (n= 90; n=133)							
Heterossexual	1	1,11	33	25	-		
Gay*	77	85,6	59	44	0.0	0.0 a 0.1	<0.01
Lesbian	2	2,2	0	0	0	0	0.01
Bissexual*	9	10	26	20	0.0	0.0 a 0.7	0.01
MSM	1	1,1	9	6,8	0.2	0.0 a 4.8	0.81
WSW*	0	0	1	0,8	-	-	>0.1
Doesn't know	0	0	3	2,3	-	-	>0.1
Others	0	0	2	1,5	-	-	>0.1

Source: Survey Data, 2023.

or having previously treated them, having anal sex, in a group or with partners with STIs.

The average number of sexual partners in the last year among PrEP users was 31.4 (sd: 38.9) while in the CTA it was 52.5 partners (sd: 190.0). There are risk behaviors in both populations, due to the high percentage of partners, having sex with anonymous people, under the influence of alcohol and without condoms.

PrEP users are 4.2 times more likely to have used PEP, as well as 2.4 times more likely to have sex with partners with an STI and 3.3 times more likely to have engaged in group sex. These behaviors are in line with the expected profile for PrEP users, since these are the inclusion criteria. In the multivariate

Figure 1 - Distribution by AR of residence of users of two STI screening services, DF, Brazil, 2021.



Source: Survey data, 2023.

Table 2 - Lifestyle and behavior of PrEP and CTA patients, DF, 2021.

Variables	PrEP (n=91)		CTA (n=128)		OR	CI (95%)	P value
	n	%	n	%			
PEP (n=90; n=128)							
Yes	31	34.4	14	10.9	-		
No	59	65.6	114	89.1	4.2	2.1 a 8.6	<.001
No. of partners (n=89; n=127) *							
None	4	4.5	2	1.6	-		
Less than or equal to 10	36	40.4	90	70.9	5.0	0.8 a 28.5	0.04
Between 11 and 20	16	18.0	10	7.9	1.2	0.2 a 8.1	0.81
Between 21 and 50	16	18.0	10	7.9	1.2	0.2 a 8.1	0.81
More than 50	17	19.1	15	11.8	1.7	0.3 a 11.0	0.54
Anonymous partners (n=77; n=127)							
Yes	44	57.1	64	50.4	-		
No	33	42.9	63	49.6	1.3	0.7 a 2.3	0.30
Sex with the use of alcohol (n=89; n=127)							
Yes	70	78.7	85	66.9	-		
No	19	21.3	42	33.1	1.8	0.9 a 3.4	0.06
Sex with partner with IST (n=88; n=127)							
Yes	25	28.4	18	14.2	-		
No	63	71.6	109	85.8	2.4	1.2 a 4.7	0.01
Anal Sex(n=87; n=126)							
Yes	78	89.7	93	73.8	-		
No	9	10.3	33	26.2	3.0	1.3 a 6.8	<0.05
Recent treatment for STIs (n=89; n=126)							
Yes	62	69.7	49	38.9	-		

No	27	30.3	77	61.1	3.6	2.0 a 6.4	<.001
Reason for testing (n=88; n=127)							
Spontaneously	52	59.1	56	44.1	-		
By medical request	26	29.5	12	9.4	0.4	0.1 a 0.9	0.03
Noticed symptoms	10	11.4	59	46.5	5.4	2.5	<.001
Performed previous test for STI (n=89; n=127)							
Yes	85	95.5	102	80.3	-		
No	4	4.5	25	19.7	5.2	1.7 a 15.5	<0.05
Underwent previous treatment for STIs (n=89; n=124)							
Yes	42	47.2	28	22.6	-		
No	47	52.8	96	77.4	3.0	1.7 a 5.5	<.001
Had symptoms in the last 60 days (n=88; n=127)							
Yes	14	15.9	65	51.2	-		
No	74	84.1	62	48.8	0.1	0.0 a 0.3	<.001
Consumption of alcoholic beverage (n=91; n=128)*							
Never	5	5.5	28	21.9	-		
Monthly	17	18.7	28	21.9	0.3	0.0 a 0.9	<0.05
2-4 times a month	36	39.6	42	32.8	0.2	0.0 a 0.5	<0.05
2 to 3 times a week	32	35.2	22	17.2	0.1	0.0 a 0.3	<.001
4 times a week	1	1.1	8	6.3	1.4	0.1 a 14.0	0.76
Use of condoms (n=89; n=127)							
Never	6	6.7	18	14.2	-		
Rarely	12	13.5	12	9.4	0.3	0.0 a 1.1	0.07
Sometimes	26	29.2	26	20.5	0.3	0.1 a 0.9	<0.05
Often	31	34.8	49	38.6	0.5	0.1 a 1.4	0.22
Always	14	15.7	22	17.3	0.5	0.1 a 1.6	0.26
Steady partner (n=88; n=128)							
Yes	40	45.5	59	46.1	-		
No	48	54.5	69	53.9	0.9	0.5 a 1.6	0.92
Group sex (n=77; n=128)							
Yes	56	72.7	57	44.5	-		
No	21	27.3	71	55.5	3.3	1.8 a 6.1	<0,01

Source: Survey Data, 2023.
*Fisher's Exact Test

analysis, PrEP users have a 5.3 times greater chance of being gay and 3.5 times more likely to practice group sex and 70% more likely to have completed higher education.

DISCUSSION

The services serve different populations, with particularities in socioeconomic and behavioral profiles. The pattern found in PrEP users is very similar to that found in other studies carried

out with this population. MSM are the most common customers.⁸ In the national context, in 2022, 84.3% of users are gay or MSM, 66% from 25 to 39 years old and 72% with 12 years or more of schooling.⁹

PrEP users found to have very high risk behavior.¹⁰ It was estimated that risk compensation was reported by 31.6% of subjects.¹¹ PrEP use was associated with an increase in STI diagnoses and condomless sex.¹² In this study, it was found that this population is 5.2 times more

likely to have been tested before. However, this issue is still quite controversial and has been much discussed. There are results that showed no difference in the use of condoms, in the number of sexual partners and in the increase in STIs.¹³ There is research showing that the number of sexual partners, sex without a condom and sex for money decreased over time and were not associated with adherence to PrEP. Incidence of urethral chlamydia and gonorrhea remains high and there is no evidence of behavioral

change related to PrEP.¹⁴

It was noticed that sexual behavior is risky in both groups, evidenced by the practice of sex with alcohol consumption; non-fixed partnerships and the low percentage of constant condom use, that is, suggesting that patients who do not use PrEP are also dangerously exposed and that perhaps, using this strategy is not actually responsible for the increase in STIs in this population, as suggested by some studies.

The geographic location of the services interfered with the target audience. PrEP users have high levels of education and income, and live in regions with high HDI in the Federal District. It turns out that hospital-based PrEP, as it is in this study, is the least effective of all and may not satisfy the target population, although it can be implemented immediately.¹⁵ The CTA managed to capture more vulnerable and peripheral AR patients in a more heterogeneous way, favored by being geographically more accessible. Due to the unavailability of the complete address of the participating individuals, it was not possible to make the access path, a limitation of this study. However, it is clear that none of the health structures efficiently served the most vulnerable populations, such as: sex workers and trans people. In addition, some of the most impoverished regions were poorly represented in the sample, such as Fercal and Paranoá.

Accessibility must be taken into account when implementing public policies, especially for the most vulnerable populations, which historically have demonstrated difficulties in accessing health services.¹⁶

There are three levels of access barriers: individual, community and the health system itself.¹⁷ The first is related to issues of internalized stigma in patients, perception of being seen as abnormal and low self-esteem, characteristics mainly found among trans women, low socioeconomic status, which lead to lack of resources for transportation and medical expenses.¹⁷ In the commu-

nity, it is observed that the obstacles are mainly related to transphobia, leading these patients to social isolation. As for the latter, factors such as stigmatization and/or breach of confidentiality by some health professionals, limited opening hours, lack of knowledge of health professionals regarding different gender identities, lack of necessary inputs for preventive measures are identified as limiting factors for adequate access.¹⁷

Limited or unequal access and failure to perform diagnostic tests in a timely manner are the factors most often mentioned by the high detection rates of STIs.^{18,7,1} The management of STIs must be carried out in primary care, as it favors a quick response, being one of the axes of action for the reduction of syphilis.¹⁹ Only less than half of people with HIV in the US are followed up, underscoring the importance of new re-engagement and retention strategies.²⁰ In the DF, in 2021, there was only 57.88% primary care coverage.²¹ This is one of the factors that may be contributing to inequality of access.

There is historical persistence of inequalities in the distribution of adequate UBS infrastructure in Brazil, highlighting the greater fragility in the service to the poorest and most vulnerable.¹⁶ Strengthening primary care is the way to improve the quality of services, promoting improved accessibility, as it is a space where issues of confidentiality, privacy and stigma can be addressed. Stigma and rejection by society often result in refusal to seek health services, delaying the diagnosis, interfering with the effective notification of the partner and, consequently, preventing the control of STI epidemics.²² However, this strategy is at risk with the disqualification of the National Policy for Primary Health Care and the cut in health financing, which has been taking place since 2019.¹⁶

Strategies need to be thought out. The use of telemedicine, which has been greatly encouraged, especially after the pandemic, has proven to be a lower-cost technology that is well accepted by pa-

tients.²³ The adequacy of the physical structures and service hours, in the basic units, that can guarantee anonymity, with unidirectional flow of patients, as well as consultations that do not identify the reason for consultations, such as: “PrEP day”, HIV-positive care day, including the joint provision of services not related to STIs.²⁰ In addition, patients need to be assured by health professionals that their clinical and identification data will also be preserved.²⁴

CONCLUSION

The provision of services that go beyond the limits of basic care undoubtedly contributes to the management of STIs, however they are not capable of providing the inclusion of the entire target population. PrEP consolidates itself as a screening service, however, the challenge of accessing and managing the risk compensation of these users will require the implementation of innovative solutions. The CTA, on the other hand, provides, due to its location, greater access for users who are not affiliated with any health institution, even guaranteeing initial care, it does not guarantee treatment and monitoring of patients and their partners, making it difficult to break transmission chains, a field in which primary care already operates.

Therefore, STI screening services need to be strategically thought out in terms of location, expanding them beyond the large urban centers, where they are currently concentrated in order to accompany the phenomenon of STIs moving to the interior, as well as investing in communication between health services, in particular, with primary care, to provide access to vulnerable populations, where the rates of these diseases are skyrocketing.

The study has limitations. Only the profile of two types of screening services was verified, lacking an important service, which is primary care. In addition, the limited sample size leaves the results inaccurate, with wide confidence inter-

vals. These services were discontinued or their service capacities were reduced, making access even more difficult during the pandemic, the data collection period.

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zed the data. PM wrote the manuscript. PM, NL and WA critically reviewed and edited the manuscript. All authors read and provided feedback on manuscript drafts and approved the final manuscript.

REFERÊNCIAS

1. WHO. Global HIV Hepatitis and Sexually Transmitted Infections Programmes. Global progress report on HIV, viral hepatitis and sexually transmitted infections, 2021 [Internet]. Vol. 53, 2021. Disponível em: <https://www.who.int/publications/i/item/9789240027077>
2. Zheng, Y. et al. Global burden and trends of sexually transmitted infections from 1990 to 2019: an observational trend study. *The Lancet Infectious diseases*, 22(4), 541–551. [https://doi.org/10.1016/S1473-3099\(21\)00448-5](https://doi.org/10.1016/S1473-3099(21)00448-5)
3. Tsuboi M, et al. Prevalence of syphilis among men who have sex with men: a global systematic review and meta-analysis from 2000–20. *Lancet Glob Heal*. 2021;9(8):e1110–8. Disponível em: [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(21\)00221-7/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(21)00221-7/fulltext)
4. Malekinejad, M. et al. Risk of HIV Acquisition Among Men Who Have Sex With Men Infected With Bacterial Sexually Transmitted Infections: A Systematic Review and Meta-Analysis. *Sexually transmitted diseases*, 48(10), e138–e148. <https://doi.org/10.1097/OLQ.0000000000001403>
5. Brasil. Ministério da Saúde. Diretrizes para organização do CTA no âmbito da prevenção combinada e nas Redes de Atenção à Saúde. Brasília. Ministério da Saúde [Internet]. 2017. Disponível em: <http://files/1830/2017>.
6. Schaefer R, et al. Adoption of guidelines on and use of oral pre-exposure prophylaxis: a global summary and forecasting study. *Lancet HIV*. 2021;8(8):e502–10.
7. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância, Prevenção e Controle das Infecções Sexualmente Transmissíveis, do HIV/Aids e das Hepatites Virais. Profilaxia pré-exposição (PrEP) de risco à infecção pelo HIV [Internet]. Brasília. Ministério da Saúde. Disponível em: <http://www.aids.gov.br/publicacao/2017/protocolo-clinico-e-diretrizes-terapeuticas-para-profilaxia-pre-exposicao-prep-de-ri>
8. Pereira CCDA, et al. Preferences for pre-exposure prophylaxis (PrEP) among men who have sex with men and transgender women at risk of HIV infection: A multicentre protocol for a discrete choice experiment in Brazil. *BMJ Open*. 2021;11(9):1–6.
9. Ministério da Saúde.org [Internet]. Painel PrEP; 2022 [citado em 2012, 08 de setembro]. Disponível em: <https://www.gov.br/aids/pt-br/assuntos/prevencao-combinada/prep-profilaxia-pre-exposicao/painel-prep>.
10. Torres TS. et al. Impact of COVID-19 Pandemic on Sexual Minority Populations in Brazil: An Analysis of Social/Racial Disparities in Maintaining Social Distancing and a Description of Sexual Behavior. *AIDS Behav*. 2021;25(1):73–84.
11. VILLELA, LM. Percepções sobre o uso da profilaxia pré-exposição ao HIV (PrEP) e possível compensação de risco entre homens que fazem sexo com homens (HSH) e mulheres transexuais (TRANS) potencialmente elegíveis para o uso de PrEP no estudo PrEP Brasil. Rio de Janeiro, 2018. 62 f. Dissertação [Mestrado em Pesquisa Clínica em Doenças Infecciosas] – Instituto Nacional de Infectologia Evandro Chagas, Fundação Oswaldo Cruz.
12. Traeger MW, et al. Effects of Pre-exposure Prophylaxis for the Prevention of Human Immunodeficiency Virus Infection on Sexual Risk Behavior in Men Who Have Sex with Men: A Systematic Review and Meta-analysis. *Clin Infect Dis*. 2018;67(5):676–86.
13. Murchu E, et al. Oral pre-exposure prophylaxis (PrEP) to prevent HIV: a systematic review and meta-analysis of clinical effectiveness, safety, adherence and risk compensation in all populations. *BMJ Open*. 2022;12(5):e048478.
14. Oliveira RCP de, et al. Avaliação do estigma relacionado ao uso de prep em homens que fazem sexo com homens (HSH) / Evaluation of the stigma related to the use of prep in men who have sex with men (MSM). *Brazilian J Heal Rev*. 2020;3(5):12924–34.
15. Mir, J. F. et al. Implementation models and access to HIV pre-exposure prophylaxis in Spain. Modelos de implementación y acceso a la profilaxia preexposición para el VIH en España. *Enfermedades infecciosas y microbiología clínica (English ed.)*, 38(5), 234–237. <https://doi.org/10.1016/j.eimc.2019.05.004>, 2020.
16. Saes M de O, Duro SMS, Gonçalves C de S, Tomasi E, Facchini LA. Assessment of the appropriate management of syphilis patients in primary health care in different regions of Brazil from 2012 to 2018.
17. Ssekamatte T, et al. Barriers to access and utilisation of HIV/STIs prevention and care services among trans-women sex workers in the greater Kampala metropolitan area, Uganda. *BMC Infect Dis*. 2020;20(1):1–15.
18. Ramos Jr. AN. Persistência da sífilis como desafio para a saúde pública no Brasil: o caminho é fortalecer o SUS, em defesa da democracia e da vida. *Cad Saude Publica*. 2022;38(5):1–6.
19. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Doenças de Condições Crônicas e Infecções Sexualmente Transmissíveis. Agenda Estratégica para Redução da Sífilis no Brasil 2020–2021 [recurso eletrônico]. Brasília: Ministério da Saúde, 2021.
20. Marellapudi A, et al. Understanding and addressing privacy and confidentiality concerns associated with the provision of mobile HIV care: a qualitative study. *AIDS Care – Psychol Socio-Medical Asp AIDS/HIV*. 2022;34(5):575–9.
21. Ministério da Saúde.org [Internet]. Informação e Gestão da Atenção Básica; 2022 [citado em 2012, 08 de setembro]. Disponível em: <https://egestorab.saude.gov.br/paginas/acessoPublico/relatorios/relCoberturaA%20PSCadastro.xhtml>
22. Ministério da Saúde.org [Internet]. Informação e Gestão da Atenção Básica; 2022 [citado em 2012, 08 de setembro]. Disponível em: <https://egestorab.saude.gov.br/paginas/acessoPublico/relatorios/relCoberturaA%20PSCadastro.xhtml>
23. Gras G. Use of telemedicine in the management of infectious diseases. Vol. 48, *Medecine et Maladies Infectieuses*. 2018. p. 231–7.
24. Gamoudi D, et al. European guideline on the organization of a consultation for sexually transmitted infections. *J Eur Acad Dermatology Venereol*. 2019;33(8):1452–8.