Evaluation of the access of men who have sex with men to HIV testing and early treatment in Curitiba/Paraná, Brazil

Avaliação do acesso de homens que fazem sexo com homens à testagem e tratamento precoce do HIV em Curitiba / Paraná, Brasil

Evaluación del acceso de hombres que tienen sexo con hombres a la prueba del HIV y tratamiento temprano en Curitiba / Paraná, Brasil

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Abstract

The "A Hora è Agora" (AHA) project was implemented in Curitiba/Paraná, Brazil to increase the access of men who have sex with men (MSM) to HIV testing and treatment. The objective of this study was to evaluate the access of MSM to the Center for Counseling and Guidance (COA) and its linkage to treatment, in the view of users, health professionals and managers. The results show that there was an increase of 54.7% of tests performed on MSM in the COA after AHA. There was a high level of schooling of the users served. Stigma and discrimination are still obstacles in the COA. It can be concluded that the AHA has modified the access of MSM to the COA, in addition to providing trained and mobilized professionals to facilitate the start of early treatment in the HIV's SUS care network.

Keywords: HIV; Homosexuality, Male; Health services accessibility; Health evaluation; Early diagnosis.

Resumo

O projeto A Hora é Agora (AHA) foi implantado em Curitiba/Paraná, Brasil, para ampliar o acesso dos Homens que fazem Sexo com Homens (HSH) à testagem do HIV e facilitar o tratamento. O objetivo desse estudo foi avaliar o acesso dos HSH no Centro de Orientação e Aconselhamento (COA) e a sua vinculação ao tratamento, na visão dos usuários, profissionais de saúde e gestores. Os resultados mostram que houve um aumento de 54,7% de testes realizados em HSH no COA, após o AHA. Observou-se um alto nível de escolaridade dos usuários atendidos. O estigma e a discriminação ainda são obstáculos na realidade do COA. Pode se concluir que o AHA modificou o acesso de HSH no COA, além de ter proporcionado profissionais capacitados e mobilizados para facilitar o início do tratamento precoce na rede de atenção ao HIV/Aids pelo SUS.

Palavras-chave: HIV; Homossexualidade masculina; Acesso aos serviços de saúde; Avaliação em saúde; Diagnóstico precoce.

Resumen

El proyecto A Hora é Agora (AHA) se implementó en Curitiba/Paraná, Brasil, para aumentar el acceso de los hombres que tienen sexo con hombres (HSH) a la prueba del HIV y facilitar el tratamiento. El objetivo de este estudio fue evaluar el acceso de HSH al Centro de Orientación y Asesoramiento (COA) y su vinculación con el tratamiento, en la visión de usuarios, profesionales de la salud y gestores. Los resultados muestran que hubo un aumento del 54,7% en las pruebas realizadas a HSH en el COA, después de la AHA. Hubo un alto nivel de educación de los usuarios atendidos. El estigma y la discriminación siguen siendo obstáculos en la realidad de la COA. Se puede concluir que la AHA modificó el acceso de HSH en el COA, además de brindar profesionales capacitados y movilizados para facilitar el inicio de tratamiento temprano en la red de atención de HIV/Aids por parte del SUS.

Palabras clave: VIH; Homosexualidad masculina; Accesibilidad a los servicios de salud; Evaluación en salud; Diagnóstico precoz.

1. Introduction

The AIDS epidemic emerged nearly four decades ago, and despite numerous advances, including the recommendation to test and treat and even cure, HIV continues to spread in different countries around the world. UNAIDS reports that 74.9 million people have been infected with HIV since the epidemic began and 32 million people have died from AIDS-

related causes; since 2010, the mortality rate has reduced by 33% (UNAIDS, 2018). In Brazil, 966,058 cases were registered as of 2019, 65.6% of them in men (Brasil, 2019).

Brazil has been adopting progressive and proactive policies and early mobilization against HIV. However, many challenges must be faced in promoting prevention, care, and treatment in a more comprehensive, equitable way, free of stigma and discrimination. One of the pillars of the then Department of Surveillance, Prevention and Control of Sexually Transmitted Infections (STIs), HIV/AIDS and Viral Hepatitis (DIAHV) of the Ministry of Health (MS), is the universal supply of HIV testing as a way to promote early diagnosis and treatment. In the late 1980s, DIAHV began investing in Testing and Counseling Centers (CTA), and since then, 515 CTA have been deployed throughout the country to increase access to HIV testing, primarily for the most vulnerable population segments (Brasil, 2016). However, a national CTA study conducted in 2006 found that 40% of units were not prioritizing the most vulnerable population groups (Grangeiro et al., 2007), which is of concern, given the high estimates of HIV prevalence in key population groups of men who have sex with men (MSM) (19.8% among MSM aged 25 and over and 9.4% among MSM 18-24 years), injecting drug users (2.9%) and sex workers (5.3%) (Brasil, 2017), compared with the estimated HIV prevalence of 0.4% in the general population (UNAIDS, 2014).

Among the Brazilian capitals that implemented decentralized actions for prevention and control of STI/HIV, Curitiba, capital of the state of Paraná, located in the southern region of Brazil, stands out for having started in 2002 decentralization of the HIV diagnosis to primary care, which means that the all the basic health care units (UBS) were able to receive the patients. Curitiba also emerge for the notification of all HIV carriers, a practice that the MS only made compulsory in 2014, and as a signatory to the Paris Declaration, which includes commitments to address people and communities most affected by HIV.

In 2019, Curitiba reported 12,868 AIDS cases, of which 69.9% were men, and 7,022 reports of HIV infection, of which 73% were men. HIV and AIDS infections together affected men in 71.3% of the cases, which shows a predominantly men epidemic (Curitiba, 2019). In a time-related analysis of the exposure categories of HIV/AIDS cases, regarding bisexual and MSM cases, significant growth of 28.9% of cases in 2004 to 58.7% in 2017 was observed.

In order to respond to a need to expand access to early testing and treatment for key MSM populations, where the HIV epidemic has been growing, the "*A Hora é Agora*" (The Time is Now) (AHA) project was implemented in 2014 in Curitiba. This project is part of the Cooperation Agreement between the Sérgio Arouca National School of Public Health

(ENSP)/FIOCRUZ, the United States Centers for Disease Control and Prevention (CDC) and the Brazilian Ministry of Health.

The AHA project aimed at broaden access to testing by providing rapid testing via finger prick in a mobile unit (trailer) stationed at a strategic location (next to sociability zones) visited by the target audience; a lesbian, gay, bisexual, transvestite and transgender (LGBT) NGO (Dignity Group); a public health unit – Guidance and Counseling Center (COA) and incorporation of HIV testing into the Curitiba Street Clinic. Also, with the support of a virtual platform (https://www.ahoraeagora.org/) called e-testing, the project's key population (MSM) could receive oral fluid testing at home or pick it up at the MS popular pharmacy for the performance of self-testing (De Boni et al., 2018). The project also aimed to strengthen the linkage of HIV-positive cases with the referral health services in Curitiba (linkage), facilitating access to antiretroviral (ART), and ensuring the assistance to users by the linkers (linkador).

The COA follows the guidelines for the organization and operation of CTA in Brazil, and, therefore, should primarily address population segments that are known to be most vulnerable to HIV and hepatitis B/C infection, such as gay men and other MSM, alcohol and other drugs users, sex workers, transvestites and transsexuals. The role of the COA is to make efforts to identify them and promote their access to testing, counseling, and prevention supplies (Brasil, 2016).

Despite the higher prevalence of testing among MSM compared to other vulnerable populations, Brazil has been reporting an increased incidence of HIV among MSM (Szwarcwald, et al., 2013) with worrying rates of late diagnosis (Ferreira et al., 2016; Ribeiro et al., 2020) in recent years. A significant challenge in different countries, including Brazil, is the difficulty of access to testing and treatment, especially in more stigmatized social groups (Macdonald, Verster & Baggaley, 2015). Not to mention the new conservative faction in the Brazilian Congress that has changed the whole structured of the DIAHV, now called Department of Chronic Conditions Diseases and Sexually Transmitted Infections (DCCI). Its current communications campaigns are a setback to the advances achieved as they have removed targeting and mention of MSM or other key populations in Brazil.

Given the exposed data from the epidemic among MSM, the low level of knowledge (Guimarães et al., 2019) and access to HIV testing, and the non-prioritization of key populations in CTA in Brazil (Grangeiro et al., 2007), this study aims to evaluate MSM access to HIV testing in the COA of Curitiba and its linkage to treatment, found on the AHA

project, based on the dimensions of accommodation, acceptability, accessibility and opportunity, in the view of users, health professionals and managers.

2. Methods

It was conducted a process evaluation considering the dimensions of access: accessibility, acceptability, accommodation and opportunity; using mixed method analysis, presented in a case study. According to Pereira et al. (2018), a case is an event or phenomenon under study and the case study is a methodology for studying individual phenomena or, social processes. Yin (2009), defines the case study as a method which is an empirical investigation that allows the study of a contemporary phenomenon within its real-life context.

In this evaluation research, a unique case study was performed at COA, considering the time and resources required for the full evaluation of the intervention. The criteria for choosing the COA were that it is a public health unit of the Unified Health System (SUS) servicing the target population of this study – MSM, regardless of the AHA.

As a way of presenting the rationale of the intervention to be evaluated, the logical model of AHA implementation in the COA was developed, based on desk analysis and literature review. The structural components used in the construction of this model were inputs, activities, products, result, and impacts in a chain of effects. Champagne et al. (2016) argue that the logical model allows documenting the meaning of a program through the conceptualization of the links between structures, processes, and results.

A **mixed** analysis method was adopted in the study, in a combination of quantitative and qualitative approach, which provides a better understanding of research problems than any of the isolated approaches (Creswell & Clark, 2011). This combination of methods allows increasing the validity of the study (Yin, 2013).

The theoretical model (Figure 1) was developed to detail the stages of the evaluative study and clarifies from a presupposition of change the theory that guided the evaluation.

Figure 1. Evaluation´s Theoretical Model.
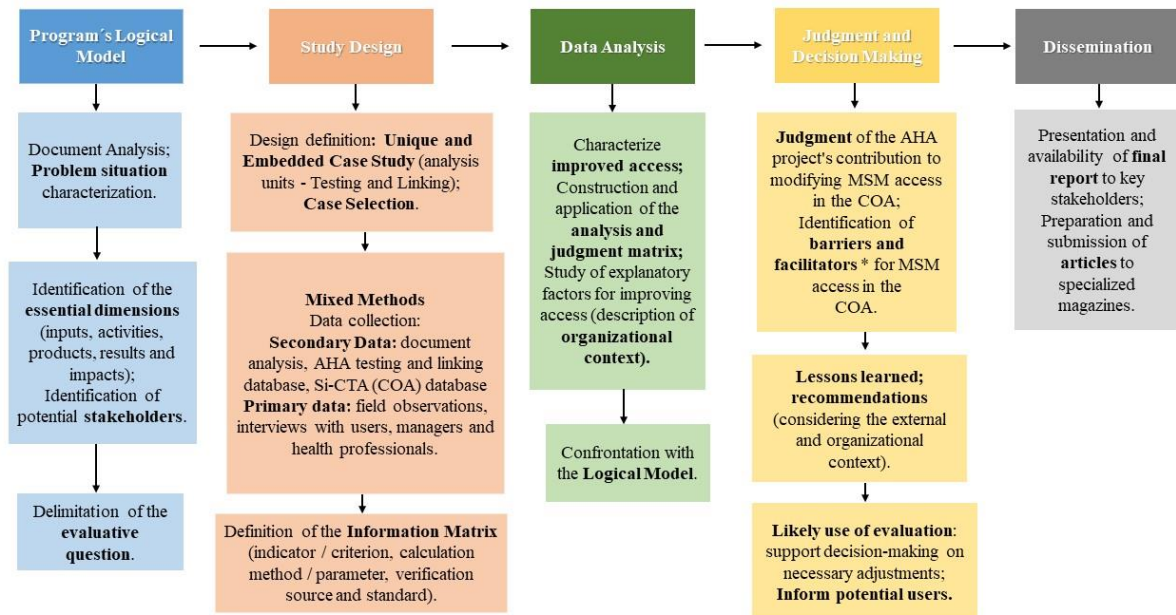
* Barriers and facilitators for access to MSM in COA will not be discussed in this article
Source: Adapted from Santos et al., (2006).

Furthermore, an information matrix was developed (Figure 2) considering the four dimensions of access. The quantitative and qualitative data with the information of the indicators and criteria used and scores are shown in the summary matrix. The qualitative techniques used were informant interviews, field observations and desk analysis.

Twenty-two interviews with informants were conducted in April and May 2018: two managers, seven COA and AHA professionals, six HIV-negative diagnosed users, and seven HIV-positive diagnosed users. All interview guests were directly or indirectly involved with the AHA.

Field observations were required to perform mapping, that is, a previous interaction between the researcher and the reality of the subjects before the interviews. It was observed the busiest times of the target population of the research, the servicing of users, access for people with disabilities, team integration, waiting time for service, among others.

After the free-floating reading of all available AHA documents, the documents selected for analysis were project protocol; minutes of meetings between linkers and linkage coordination; user and linker contact information forms; semi-annual and annual reports of the Cooperation Agreement; reports of supervisory visits at the COA; and the AHA project evaluation report.

Figure 2. Summary of the Evaluation Analysis and Judgment Matrix.

ACCEPTABILITY	
Indicator / criterion	**Score**
Variation in HIV testing on MSM at the COA compared to the number of MSM testing at the AOC before the AHA	>= 50.0% = 3 4.0 a 49.9% = 2 30.0 a 39.9% = 1 <= 29.9% = 0
Satisfaction of COA health professionals and managers regarding the AHA project	Very satisfied = 3; Partially satisfied = 2; Neither satisfied, nor dissatisfied = 1; Partially dissatisfied = 0.5 Very dissatisfied = 0
Satisfaction of health professionals and managers regarding linkage and linker	Very satisfied = 3; Partially satisfied = 2; Neither satisfied, nor dissatisfied = 1; Partially dissatisfied = 0.5 Very dissatisfied = 0
User satisfaction with COA testing & counseling	Very satisfied = 3; Partially satisfied = 2; Neither satisfied, nor dissatisfied = 1; Partially dissatisfied = 0.5 Very dissatisfied = 0
Satisfaction of HIV+ diagnosed users regarding AHA linkage	Very satisfied = 3; Partially satisfied = 2; Neither satisfied, nor dissatisfied = 1; Partially dissatisfied = 0.5 Very dissatisfied = 0
ACCESSIBILITY	
Indicator / criterion	**Score**
% of young MSM tested at the COA	>= 40.0% = 3 30.0 to 39.9% = 2 20.0 to 29.9% = 1 <= 19.9% = 0
% of young MSM tested in the AHA project at the COA	>= 80.0% = 3 70.0 to 79.9% = 2 60.0 to 69.9% = 1 <= 59.9% = 0
% 1st service of MSM at the COA	>= 60.0% = 3 50.0 to 59.9% = 2 40.0 to 49.9% = 1 <= 39.9% = 0
% MSM tested at the COA with level of schooling "secondary school complete" or over	>= 80.0% = 3 70.0 to 79.99% = 2 60.0 to 69.9% = 1 <= 59.9% = 0
% of young MSM tested at the COA, with a positive result for HIV	65% = 3 55.0 to 64.9% = 2 45.0 to 54.9% = 1 <= 44.9% = 0
% 1st service of MSM in the AHA project at the COA	>= 60.0% = 3 50.0 to 59.9% = 2 40.0 to 49.9% = 1 <= 39.9% = 0
% of MSM tested in the AHA at the COA with "secondary school complete" or over	>= 80.0% = 3 70.0 to 79.9% = 2 60.0 to 69.9% = 1 <= 59.9% = 0
% de HSH jovens testados no AHA no COA, com resultado positivo para o HIV	65% = 3 55.0 to 64.9% = 2 45.0 to 54.9% = 1 <= 44.9% = 0
Users geographic access to COA	Very good =3; Good = 2; Fair = 1; Bad = 0.5; Very bad = 0
Availability of HIV information, testing and treatment from users' perspective	Very much available = 3; Available = 2; Rarely available = 1; Fair = 0.5; Not at all available = 0
OPPORTUNITY	
Indicator / criterion	**Score**
% of MSM, as a result of the HIV+ test, who reported accepting the support of a linker.	>= 90.0% = 3 80.0 to 89.9% = 2 60.0 to 79.9% = 1 <= 59.9% = 0
Mean time between positive diagnosis and effective onset of treatment in MSM of the AHA project at the COA.	< = 60 days = 3 90 to 59 days = 2 = 90 days = 1 > 91 days= 0
% of MSM, with positive testing, linked to SUS Network, in the linkage cycle (90 days).	< = 60 days = 3 90 to 59 days = 2 = 90 days = 1 > 91 days= 0
Importance of testing and treatment in users' view	Very important = 3; Important = 2; Not very Important = 1; Fair = 0.5; Not at all important = 0
Linker assistance in reagent user's view	Very good =3; Good = 2; Fair = 1; Bad = 0.5; Very bad =0
ACCOMODATION	
Criterion	**Score**
Reception of users by COA health professionals	Very good =3; Good = 2; Fair = 1; Bad = 0.5; Very bad =0
Sufficient training on stigma and discrimination for health professionals	Very sufficient = 3; Sufficient = 2; Not very sufficient = 1; Fair = 0.5; Insufficient = 0
COA environment convenience for the MSM community	Very convenient = 3; Convenient = 2; Not very convenient = 1; Fair = 0.5; Inconvenient= 0
Convenience of COA opening hours for the MSM community	Very good =3; Good = 2; Fair = 1; Bad = 0.5; Very bad =0
Score Total:	**72 points (Quantitative: 36 // Qualitative: 36)**

Source: Prepared by the authors.

Nine categories were created and grouped according to four dimensions of access: (1) Acceptability: AHA project at the COA; Service/Reception; (2) Accessibility: Traveling; Communication (3) Opportunity: Best places to test/treat; Test and Treat; Linkage (4) Accommodation: Service/Reception; COA adequacy.

This study was analyzed through complementarity and triangulation (Dang, 2015; Palinkas, Mendon & Hamilton, 2019) and sought convergence and corroboration through the different techniques used – field observations, interviews with informants, and desk analysis. This convergence strengthens the internal validity of the evaluation.

The maximum total score was 72 points, of which 36 were for the quantitative indicators, distributed among the dimensions of acceptability (3 points), accessibility (24 points), opportunity (9 points), thus giving higher weight to the dimension of accessibility; and 36 for the qualitative criteria, distributed between the dimension of acceptability (12 points), accessibility (6 points), opportunity (6 points) and accommodation (12 points), thus giving higher weight to the dimensions of acceptability and accommodation. The final score followed the following ranges and parameters: (1) 49 to 72 points: the AHA project fully modified the access of MSM at the COA; (2) 37 to 48 points: the AHA project has dramatically changed the access of MSM at the COA; (3) 25 to 36 points: the AHA project has modified access of MSM at the COA; (4) 13 to 24 points: the AHA project has hardly

changed access of MSM at the COA; (4) 0 to 12 points: the AHA project has not changed access of MSM at the COA.

This research was submitted and approved by the Research Ethics Committees of ENSP/FIOCRUZ through opinion Nº 2.539.927, on March 12, 2018, and of the Municipal Health Secretariat of Curitiba through opinion Nº 2.609.994, on April 19, 2018.

3. Results and Discussion

A cut in time was made for the characterization of the users tested at the COA, analyzing all men users who took the HIV test at the COA: before the AHA (1st period: 2012 to 2014) and after the AHA (2nd period 2015 to 2017).

Table 1 shows that most of the users who took the HIV test at the COA were men (68.0% in the 1st period, and 71.9% in the 2nd period), a percentage well above another CTA in Brazil, municipality of Rio de Janeiro, where a study conducted in 2008 and 2009 found that only 37.5% of users were men (Soares & Brandão, 2013).

In the second period analyzed there were 5,437 men tested for HIV more than in the first period, which corresponds to a 44.7% increase in men tested at the COA after the AHA. Among MSM, this increase was even higher – 2,554 more MSM tested, which is 54.7% over the previous period.

Concerning the men tested, the second period showed an increase of 53.4% in the age group of 14-29 years. The result of the HIV+ test found an increase of 214 cases (22.6%) in the second period, most of them in the age group of 14-29 years.

The profile of MSM tested was young (14-29 years), and an increase of young people in the second period (61%) was also observed, compared to the first period. It shows similarity with other studies in Brazil, such that carried out in a Reference Center for HIV/AIDS in a large municipality in southern Brazil, which revealed that younger men were the ones who sought the most for the HIV test and also the most affected by the infection (Rossi et al., 2020). In two units of Arcoverde, Pernambuco, another study showed a higher percentage of young people up to 29 years old, attended in the services (Veras et al., 2020).

Most MSM tested at the COA were white (84.7%), followed by brown (15.3%). Most of them had complete/incomplete higher education or over (54.5%), and most were testing for the first time (73.7%). Assis & Jesus (2012) affirm that the issue of access is becoming more critical and begins to be approached in a more sophisticated way since, despite the guarantee

of the law, in practice, a selective, focused and exclusionary access is still in place in various regions and services linked to the SUS.

Table 1. Absolute distribution and percentage, mean, variation and p-value for men tested for HIV in the COA, by characteristics. Curitiba: 2012/2014 and 2015/2017.

Characteristics	1st period (2012-2014)			2nd period (2015-2017)			Total (2012-2017)		Variation between periods	p-value
	n	%	Mean	n	%	Mean	n	%		
Total number of people who performed the HIV test	17,884	42.2%	5,961.33	24,473	57.8%	8,157.66	42,357	100.0%	36.8%	
Total number of men who performed the HIV test	**12,162**	**68.0%**	**4,054.00**	**17,599**	**71.9%**	**5,866.33**	**29,761**	**70.3%**	**44.7%**	**0.0000**
Age group	12,162	100.0%	4,054.00	17,599	100.0%	5,866.33	29,761	100.0%	44.7%	
14-29 years	6,159	50.6%	2,053.00	9,446	53.7%	3,148.67	15,605	52.4%	53.4%	0.0000
30 years and over	6,003	49.4%	2,001.00	8,153	46.3%	2,717.67	14,156	47.6%	35.8%	0.0000
MEN - Test Result: HIV+										
	946	7.8%	315.33	1,160	6.6%	386.67	2,106	7.1%	22.6%	0.0000
Age group	**946**	**100.0%**	**315.33**	**1,160**	**100.0%**	**386.67**	**2,106**	**100.0%**	**22.6%**	
14-29 years	509	53.8%	169.67	672	57.9%	224.00	1,181	56.1%	32.0%	0.0289
30 years and over	437	46.2%	145.67	488	42.1%	162.67	925	43.9%	11.7%	0.0289
MEN WHO HAVE SEX WITH MEN (MSM)										
Total MSM who performed the HIV test	4,671	39.3%	1,557.00	7,225	60.7%	2,408.33	11,896	100.0%	54.7%	
Age group	**4,671**	**100.0%**	**1,557.00**	**7,225**	**100.0%**	**1,625.67**	**11,896**	**100.0%**	**54.7%**	
14-29 years	3,029	64.8%	1,009.67	4,877	67.5%	1,625.67	7,906	66.5%	61.0%	0.0014
30 years and over	1,642	35.2%	547.33	2,348	32.5%	782.67	3,990	33.5%	43.0%	0.0014
Ethnicity/skin color	**4,671**	**100.0%**	**1,497.67**	**7,225**	**100.0%**	**2,284.00**	**11,896**	**100.0%**	**54.7%**	
White	3,771	83.9%	1,257.00	5,802	85.2%	1,934.00	9,573	84.7%	53.9%	0.2828
Brown	721	16.1%	240.33	1,009	14.8%	336.33	1,730	15.3%	39.9%	0.0132
Other (yellow, indigenous, black)	179	4.0%	0.33	414	6.1%	13.67	593	5.2%	131.3%	0.0000
Schooling	**4,671**	**100.0%**	**1,557.00**	**7,225**	**100.0%**	**2,406.33**	**11,896**	**100.0%**	**54.7%**	
Secondary school incomplete	223	4.8%	71.00	306	4.2%	96.67	529	4.4%	37.2%	0.0819
Secondary school complete	1,653	35.4%	551.00	2,751	38.1%	917.00	4,404	37.0%	66.4%	0.0015
Higher education incomplete, complete, and over	2,639	56.5%	879.67	3,849	53.3%	1,283.00	6,488	54.5%	45.9%	0.0003
Unknown	156	3.3%	52.00	319	4.4%	106.33	475	4.0%	104.5%	0.0017
1st service at the COA	**4,671**	**100.0%**	**1,557.00**	**7,225**	**100.0%**	**2,408.33**	**11,896**	**100.0%**	**54.7%**	
No	999	21.4%	333.00	2,128	29.5%	709.33	3,127	26.3%	113.0%	0.1490
Yes	3,672	78.6%	1,224.00	5,097	70.5%	1,699.00	8,769	73.7%	38.8%	0.1490
HIV Test Result: HIV+										
	647	**13.9%**	215.67	856	**11.8%**	285.33	1,503	**12.6%**		0.0007
Age group	**647**	**100.0%**	**215.67**	**856**	**100.0%**	**285.33**	**1,503**	**100.0%**	**32.3%**	
14-29 years	418	64.6%	139.33	575	67.2%	191.67	993	66.1%	37.6%	0.1490
30 years and over	229	35.4%	76.33	281	32.8%	93.67	510	33.9%	22.7%	0.1490
Ethnicity/skin color	**647**	**100.0%**	**205.33**	**856**	**100.0%**	**266.00**	**1,503**	**100.0%**	**32.3%**	
White	500	81.2%	166.67	633	79.4%	211.00	1,133	80.2%	26.6%	0.0689
Brown	116	18.8%	38.67	164	20.6%	54.67	280	19.8%	41.4%	0.1470
Other (yellow, indigenous, black)	31	5.0%	0.00	59	7.4%	0.33	90	6.4%	90.3%	0.0513
Schooling	**647**	**100.0%**	**215.67**	**856**	**100.0%**	**285.33**	**1,503**	**100.0%**	**32.3%**	
Secondary school incomplete	30	4.6%	9.33	41	4.8%	13.33	71	4.7%	36.7%	0.4450
Secondary school complete	279	43.1%	93.00	392	45.8%	130.67	671	44.6%	40.5%	0.1511
Higher education incomplete, complete, and over	320	49.5%	106.67	397	46.4%	132.33	717	47.7%	24.1%	0.1182
Unknown	18	2.8%	6.00	26	3.0%	8.67	44	2.9%	44.4%	0.3856
1st service at the COA	**647**	**100.0%**	**215.67**	**856**	**100.0%**	**285.33**	**1,503**	**100.0%**	**32.3%**	
No	95	14.7%	31.67	136	15.9%	45.33	231	15.4%	43.2%	0.2607
Yes	552	85.3%	184.00	720	84.1%	240.00	1,272	84.6%	30.4%	0.2607

Source: Si-CTA (COA) Database – 2012 to 2017.

The HIV+ result showed an increase of 209 cases (32.3%) in the second period, and with the same sociodemographic profile as HIV non-positive MSM. This increase in diagnosed cases can be explained by testing incentive campaigns with AHA communication strategies focused on young people and MSM. Data from the latest epidemiological bulletin

of Curitiba show a higher proportion of cases diagnosed with MSM since 2009, in 2016 and 2017 (Curitiba, 2019).

HIV prevalence among MSM tested at the COA throughout the period (2012-2017) averaged 12.6%, similar to the results of a 2009 study conducted by the Respondent Driven Sampling (RDS) method in ten Brazilian cities, which showed a prevalence of 12.1% (Keer et al., 2013). In a study conducted in the city of São Paulo through Time-Location Sampling (TLS), the results showed a prevalence of 15% among the interviewed MSM (Veras et al., 2015). In Rio de Janeiro, a study conducted in a mobile unit and an LGBT NGO showed a prevalence of 16.3% (Castro et al., 2016). The results of a second national survey also using the RDS method, conducted in twelve Brazilian cities in 2016, show a prevalence of 17.5% in MSM (Keer, et al., 2018). While Curitiba had a slight decrease in HIV prevalence from 2015 to 2017 (compared to 2012 to 2014), other Brazilian cities show a noticeable increase, especially when we analyze both surveys using RDS in 2009 and 2016.

The characterization of the users who were tested at the COA through the AHA, and who agreed to participate in the research is shown in Table 2. It can be seen that 1,146 men were tested by the AHA, of which 98% were MSM, and of these, 75.5% were young people aged 14-29 years. As AHA communication was directed at young MSM, this result leads to the conclusion that the efforts were successful.

In total, 77.1% of the MSM tested were white, corroborating the IBGE data from Curitiba (IBGE, 2010), and 90.6% had completed secondary school or above – data similar to other COA users. Although Curitiba has a high schooling rate – 97.6% (IBGE, 2010), the last census conducted in 2010, pointed out that only 58% of Curitiba residents had completed secondary school. The significant outreach among MSM with such an educational level indicates that there is restricted access to health services for underprivileged MSM. Burger & Christian (2018) found on their research in South Africa, post-apartheid that more educated people were significantly more likely to have affordable access to health care.

Concerning HIV testing, only about 20% of MSM were being tested for the first time, and it can be concluded that most MSM who were tested in the AHA were already aware of the importance of testing and possible sites for its realization.

Table 2. Absolute distribution and percentage, confidence intervals for men tested for HIV at the COA, by characteristics.

Characteristics	2015		95% CI		2016		95% CI		2017		95% CI		Total	
	n	%	lower	upper	n	%	lower	upper	n	%	lower	upper	n	%
Men who performed the HIV test	**94**	**8.2%**	**6.6%**	**9.8%**	**500**	**43.6%**	**40.8%**	**46.5%**	**552**	**48.2%**	**45.3%**	**51.1%**	**1,146**	**100.0%**
Age group	**94**	**100.0%**			**500**	**100.0%**			**552**	**100.0%**			**1,146**	**100.0%**
14-29 years	67	71.3%	62.1%	80.4%	378	75.6%	71.8%	79.4%	412	74.6%	71.0%	78.3%	857	74.8%
30 years and over	27	28.7%	19.6%	37.9%	122	24.4%	20.6%	28.2%	140	25.4%	21.7%	29.0%	289	25.2%
MEN - HIV Test Result: HIV+														
	53	56%	46.4%	66.4%	140	28.0%	24.1%	31.9%	224	40.6%	36.5%	44.7%	417	36.4%
Age group	**53**	**100.0%**			**140**	**100.0%**			**224**	**100.0%**			**417**	**100.0%**
14 a 29 anos	36	67.9%	55.4%	80.5%	98	70.0%	62.4%	77.6%	151	67.4%	61.3%	73.5%	285	68.3%
30 anos ou mais	17	32.1%	19.5%	44.6%	42	30.0%	22.4%	37.6%	73	32.6%	26.5%	38.7%	132	31.7%
MSM who performed the HIV test	**90**	**95.7%**	**94.5%**	**96.9%**	**499**	**99.8%**	**99.5%**	**100.0%**	**535**	**96.9%**	**95.9%**	**97.9%**	**1,124**	**98.0%**
Age group	**90**	**100.0%**			**499**	**100.0%**			**535**	**100.0%**			**1,124**	**100.0%**
14-29 years	66	73.3%	64.2%	82.5%	378	75.8%	72.0%	79.5%	405	75.7%	72.1%	79.3%	849	75.5%
30 years and over	24	26.7%	17.5%	35.8%	121	24.2%	20.5%	28.0%	130	24.3%	20.7%	27.9%	275	24.5%
Ethnicity/skin color	**90**	**100.0%**			**499**	**100.0%**			**535**	**100.0%**			**1,124**	**100.0%**
White	63	70.0%	60.5%	79.5%	396	79.4%	75.8%	82.9%	408	76.3%	72.7%	79.9%	867	77.1%
Brown	21	23.3%	14.6%	32.1%	80	16.0%	12.8%	19.3%	103	19.3%	15.9%	22.6%	204	18.1%
Did not answer	0	0.0%	0.0%	0.0%	0	0.0%	0.0%	0.0%	1	0.2%	0.0%	0.6%	1	0.1%
Other (yellow, indigenous, black)	6	6.7%	1.5%	11.8%	23	4.6%	2.8%	6.4%	23	4.3%	0.0%	6.0%	52	4.6%
Schooling	**90**	**98.9%**			**499**	**99.8%**			**535**	**99.8%**			**1,124**	**99.7%**
Up to 5th grade (primary school)	0	0.0%	0.0%	0.0%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%	0.0%	0	0.0%
Secondary school incomplete	8	8.9%	3.0%	14.8%	50	10.0%	7.4%	12.7%	45	8.4%	6.1%	10.8%	103	9.2%
Secondary school complete	48	53.3%	43.0%	63.6%	209	41.9%	37.6%	46.2%	235	43.9%	39.7%	48.1%	492	43.8%
Higher education incomplete, complete and ove	33	36.7%	26.7%	46.6%	239	47.9%	43.5%	52.3%	254	47.5%	43.2%	51.7%	526	46.8%
Did not answer	1	1.1%	0.0%	3.3%	1	0.2%	0.0%	0.6%	1	0.2%	0.0%	0.6%	3	0.3%
1st HIV testing	**90**	**85.6%**			**499**	**100.0%**			**535**	**100.0%**			**1,124**	**98.8%**
Yes, never tested	23	25.6%	16.5%	34.6%	104	20.8%	17.3%	24.4%	94	17.6%	14.3%	20.8%	221	19.7%
No, was tested before	54	60.0%	49.9%	70.1%	395	79.2%	75.6%	82.7%	441	82.4%	79.2%	85.7%	890	79.2%
Did not answer	13	14.4%	7.2%	21.7%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%	0.0%	13	1.2%
MSM - HIV Test Result: HIV+														
	51	56.6%	51.7%	61.5%	139	27.8%	23.4%	32.2%	209	39.0%	34.2%	43.8%	399	35.4%
Age group	**51**	**100.0%**			**139**	**100.0%**			**209**	**100.0%**			**399**	**100.0%**
14-29 years	36	70.6%	58.1%	83.1%	98	70.5%	62.9%	78.1%	146	69.9%	63.6%	76.1%	280	70.2%
30 years and over	15	29.4%	16.9%	41.9%	41	29.5%	21.9%	37.1%	63	30.1%	23.9%	36.4%	119	29.8%
1st HIV testing	**51**	**78.4%**			**139**	**100.0%**			**209**	**100.0%**			**399**	**97.2%**
Yes, never tested	13	25.5%	13.5%	37.5%	33	23.7%	16.7%	30.8%	40	19.1%	13.8%	24.5%	86	21.6%
No, was tested before	27	52.9%	39.2%	66.6%	106	76.3%	69.2%	83.3%	169	80.9%	75.5%	86.2%	302	75.7%
Did not answer	11	21.6%	10.3%	32.9%	0	0.0%	0.0%	0.0%	0	0.0%	0.0%	0.0%	11	2.8%

Source: AHA Project.

Regarding the HIV test result, 399 MSM were diagnosed HIV+, which corresponds to 35.4% of the MSM tested. Of these, about 70% are young people aged 14-29 years. This high prevalence of HIV at the COA (35.4%) is due to a possible selection bias of MSM users at the beginning of the AHA, as per the desk analysis. Only users with HIV+ results were being invited to participate in the survey. Another issue that may have caused a higher number of positive diagnoses at the COA was e-testing; more than 7,000 tests were distributed in just 24 months (De Boni et 1l., 2018), and users who performed the oral fluid self-test at home and had reagent results were invited to go to the COA to confirm the HIV test with the digital puncture test. All of this has contributed to a much higher level of HIV positivity at the COA through the AHA than the estimated prevalence.

In this research, access to MSM testing and linkage to HIV treatment at the COA of Curitiba was analyzed as per the dimensions of acceptability, accessibility, opportunity and accommodation, based on the view of users, health professionals and COA managers. The dimensions that underpin the access category encompass factors that are quite distinct from

mere organizational accessibility to services, such as popular participation and social control, equity, service coherence with the needs of the population, strategies, tactics, and allocation of resources and autonomy (Assis & Jesus, 2012).

Acceptability

As a dimension of access, acceptability encompasses factors of the physical environment, as well as the user's attitudes regarding the personal characteristics of professionals and also regarding service practices (Penchansky & Thomas, 1981). One of the measures to assess COA's acceptability by MSM was the quantitative analysis of MSM tested. A 54.4% increase in MSM tested at the COA after the AHA was observed; COA professionals and managers were satisfied with the AHA and cited as a negative point the increased demand and the completion of project forms.

Regarding linkage and linkers, professionals and managers were very satisfied, as were users diagnosed with HIV+. Farrisi & Dietz (2013) argue that linkage is a service that can be used to strengthen user engagement and adherence efforts of HIV centers working with people facing barriers to care. This is the purpose of linking in the AHA, which is to support users through active listening, in order to reduce the vulnerabilities that gather sociocultural and political-institutional aspects, individual characteristics, experiences, interactions, subjectivities, and personal paths (Delor & Hubert, 2000).

> *"… Besides him giving the information, he also directed me somehow: 'So you go to such a place, you do such a thing, you must take it'. I received the diagnosis on March 13, and I started taking my medication on the 20th or so". (USER 1 HIV+)*

The interviewed users were satisfied with the testing and counseling at the COA. However, a desk analysis evidenced reports of poor professional care to MSM. Barbosa et al. (2013) mention that although professionals show affinities with the work performed, they reveal little sensitivity to the real needs of the community and identification of the real issues, which would allow a transformation towards better access and care of the population.

The desk analysis revealed the process of COA team's behavioral change, due to training/discussions about stigma and discrimination held by the AHA and team supervision meetings. Importantly, such activities were promoted to identify the issues related to the approach of users and adjust them as appropriately as possible.

"The reception was entirely different. It was thus a watershed. The project came, changed, standardized actions, many things. Many things have changed. It has been... an almost total repagination... I believe that this project had to be adopted as a public health policy". (HEALTH PROFESSIONAL 4)

Accessibility

There was a small increase in young MSM tested at the COA after the AHA and a decrease in MSM serviced for the first time, leading to the conclusion that young people were retesting as directed by communication campaigns. All users interviewed were satisfied with the location of the COA, but the situation of those living in more distant neighborhoods, which can hinder access, was mentioned. Attention is drawn to the concern of respondents with those who live in the suburbs or distant from the city center, considering that the traveling means employed by users is a factor that can hinder or facilitate their access to the service.

Users said they did not receive any information about HIV/AIDS and testing from the media, except for the carnival campaigns conducted by the MS and AHA campaigns. These results corroborate the findings of a study conducted with MSM in 2008 and 2009 in Belo Horizonte (MG), which revealed that there is a critical knowledge gap regarding necessary information on HIV/AIDS (Gomes et al.,2013).

"I remember that, in 2015, a group of young people walked around the city and restaurants, for example, and handed out leaflets. I think it was one of the coolest things I've seen about outreach because people are approached directly in a relaxed way and some places." (USER 4 HIV+)

"I had stopped at the time of Renato Russo, Cazuza. I don't see much actually. There have to be more things like that, more educational campaigns." (USER 3 HIV+)

Gomes et al. (2017) say that access to information and mass education are vital components in programs aimed at sensitizing people to transmission and prevention of HIV/AIDS, calming anxieties about transmission and preventing discrimination. Other studies have also found an association of proper knowledge about HIV/AIDS with HIV testing (Ziraba, et al., 2011; Pharris et al., 2011). Knowing about HIV infection and treatment can

reduce the fear of death in the event of positive test results, and help to overcome psychological barriers to testing (Barros et al., 2017).

Opportunity

AHA HIV+ results at the COA and linkage service performance are detailed in Table 3.

Table 3. Characteristics and statistics of linkage of the AHA project. Curitiba: 2015-2017.

Characteristics	2015		2016		2017		Total	
	n	%	n	%	n	%	n	%
HIV+ in the Key Population (excluding users who performed the test more than once)	**48**	**100.0%**	**138**	**100.0%**	**205**	**100.0%**	**391**	**100.0%**
Eligible HIV+ in the Key Population. excluding HIV and Previous ART	**47**	**97.9%**	**132**	**95.7%**	**186**	**90.7%**	365	93.4%
Eligible who accepted linkage	45	95.7%	124	93.9%	176	94.6%	345	94.5%
Linked	**44**	**97.8%**	**110**	**88.7%**	**143**	**81.3%**	**297**	**86.1%**
Unlinked	1	2.2%	14	11.3%	33	18.8%	48	13.9%
Mean among linked[1]	**76.9**		**107.0**		**53.2**		**75.5**	
Median	51.0		52.5		25.0		40.0	
Did not accept linkage	2	4.4%	8	6.5%	10	5.7%	20.0	5.5%
Linked	1	50.0%	3	37.5%	7	70.0%	11.0	55.0%
Unlinked	1	50.0%	5	62.5%	3	30.0%	9.0	45.0%
Mean among those who did not accept linkage[1]	**20.0**		**38.0**		**43.8**		**40.0**	
Median	20.0		38.0		7.0		20.0	

[1]Time between diagnosis and treatment
Source: Database of the linkage of the AHA Project.

In total, 399 users were HIV-reactive. Therefore, some of them had already been tested by the project and were already in the database of the linkage. Excluding users who have been tested more than once (8 repeat tests), Table 3 shows a total of 391 HIV reactive users. Of these users, 26 were previously diagnosed with HIV or were already undergoing treatment, and, thus, were excluded from the sample, totaling 365 reactive and users eligible to linkage (MSM residing in Curitiba), and 95% of eligible users accepted the linkage, and 86% were linked (started treatment) on an average of 75.5 days and a median of 40 days.

Only 20 users did not accept the linkage (5%), and 55% of them were linked to the service in almost half the time of users with the linker's assistance. The assumptions for these time discrepancies are that users who refused the linkage already knew the steps to start treatment, they accessed the private network (health insurance plans) or could already be users of the network, having facilitated the whole process of registration and scheduling of visits and examinations, reducing the time between diagnosis and treatment.

Based on international studies, Fernandes et al. (2009) point out that late diagnosis is one of the main risk factors for late initiation of treatment, whose outcomes are the lack of user's knowledge about the risk of HIV infection and difficult access to the test.

In interviews with reactive users, it was asked about the linkage service and linker assistance. All users spoke of the importance of the linker in this process, who provided them with information, directed and received them, answered questions, and expedited the onset of treatment.

> *"So, had I received the diagnosis at the time, it would have been much more difficult because I didn't have back then the knowledge I have today. But if I received the diagnosis today, knowing what I know, having experienced what I went through, knowing whom I got to know, I would start today." (USER 2 HIV+)*

About testing and treatment, all consider them very important, and non-reactive users mentioned the difficulty in receiving the diagnosis. Everyone said the linker's assistance was very good. A study conducted with MSM in China showed that having someone to accompany the HIV+ user after the diagnosis doubles his likelihood to become linked to the health system and start treatment (Yan et al., 2014). It is also worth mentioning the knowledge acquired by the linker on the care network, which helps the user a lot in the navigation so that, as Shockney (2011) would draw attention to, they receive timely and effective care.

Accommodation

Accommodation is correlated here with reception which, in turn, is defined "as a possibility of building a new health practice, understanding it as communicational actions, acts of receiving and listening to the population seeking health services, giving adequate answers to each demand throughout the search path; from reception and individual or group care to external referral, return, rescheduling and discharge" (Santos & Assis, 2006, p. 54).

The COA reception was considered very good by the users. Health professionals mentioned difficulties at work, such as stigma, the profile of some professionals, and the lack of team training. The COA was considered a convenient place for the MSM community, with some necessary adjustments.

"So he was extremely responsive, very polite, as was the girl who did my registration, my interview too, extremely considerate and very welcoming. It was very welcoming; people were very polite and discreet, right?" (USER 5 HIV-)

"The issue of stigma, despite being something that we have worked on within the team, is still something that… that happens. Less, more hidden, but it happens." (MANAGER 1)

A study carried out in a health unit in Porto Alegre in 2000 revealed that the organization of the service and the professional competence of the team were factors that generated users' satisfaction, although occasional difficulties were mentioned with some team members (Ramos & Lima, 2003).

In a study conducted in seven CTA in Rio de Janeiro, Mora et al (2015), concluded that "daily practices are traversed by situations that are beyond the scope and purpose of training manuals and processes for counseling; the challenge of tuning the training and work processes can be assumed through continuing education processes focusing on the professionals and institutional contexts in which practice takes place" (page 1153).

The ranges and parameters shown in the methods evidence that the evaluation results indicate that the AHA fully modified the access of MSM in Curitiba's COA, with a total score of 55 points. The acceptability (13/15) and accessibility (24/30) dimensions scored best, corresponding to 67% of the total score achieved.

4. Final Considerations

The results of the evaluation showed the lack of COA's human resources and adequate technical capacity of the team. The AHA has modified access to MSM in the COA, but demand has only been absorbed thanks to staff recruited by the project. It is worth mentioning the relevance of this team, professionals who reduce the time between diagnosis and treatment and also introduced a new organizational culture.

The COA proved to be a pleasant environment for the people who visit it, as well as the care received by the professionals. However, one of the drawbacks mentioned was the opening hours, which hinder access. It is also essential to think about the people who live in the neighborhoods distant from downtown where the COA is located. It is therefore recommended that testing be done in distant neighborhoods using the mobile unit donated by

the AHA. Users who are diagnosed with HIV+ in these actions must have a professional who can accompany them until the onset of treatment at their basic health care unit.

The results of the evaluation lead us to recommend frequent target training for providers delivering services for MSM and supervision for the COA team and also the Curitiba network, where HIV+ diagnosed will be incorporated to start treatment. The network must be prepared to receive these users and keep them under treatment. It is also recommended that meetings be held for reflection and exchange of experiences among professionals, in order to build a work environment that is more favorable to all. These meetings are intended to be held by a psychology professional who is not part of the COA team and can also develop an individual listening work – a space for addressing personal issues that arise at work.

Regarding stigma, this study brought a need for further study of the theme and interventions, given the overlap found. Stigma is present not only in the disease and categories (MSM, transgender/transvestite people) but also in the vulnerable situation of each individual, such as socioeconomic status and barriers to access and treatment brought by these conditions.

It is believed that the results of this research may support the managers of Municipal Health Secretariat and the DCCI in the planning and management of actions to increase access to MSM and other key populations, to organize the SUS better. Even with the extinction of the DCCI and the setbacks announced by the new federal government, it is hoped that social and human rights advocacy will continue, especially for the most impoverished and stigmatized segments of the population.

Finally, it is suggested, based on the results achieved, the incentive to carry out studies of this nature in other regions of Brazil whose access to services related to the prevention and care of HIV/AIDS is unequal, especially for vulnerable populations.

Acknowledgments

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