

SARS-CoV-2 antibodies prevalence among sexual and gender minorities youth in Brazil

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Background

▪ Brazil was strongly affected by the COVID-19 pandemic and it is still unknown how it affected sexual and gender minorities' youth in the country.

Goal

▪ The aim of this study was to estimate the seroprevalence of antibodies to SARS-CoV-2, and analyze factors associated with the infection among young men who have sex with men (yMSM) and transgender women (yTGW).

Methods

- This is a cross-sectional and serological survey (COBra Study) nested in PrEP1519 study in Salvador, Northeast of Brazil.
- The PrEP1519 is a demonstration cohort study of daily TDF/FTC as PrEP among yMSM and yTGW aged 15-19 years old (yo) residing in three Brazilian capital cities, from 2019-2021.
- Serum samples were collected from yMSM and yTGW aged 15-22 years between June-October/2020 (before of vaccination).
- IgG and IgM anti-SARS-CoV-2 were detected by chemiluminescence immunoassay, and data were collected through a socio-behavioral questionnaire.
- Descriptive, bivariate, and multivariate analyzes with adjusted odds ratios (aOR) and 95% confidence intervals (95%CI) were carried out.
- This sub-study was approved by the Research Ethics Committee of the Federal University of Bahia through an amendment (#4.229.488). All participants signed the consent or assent forms.

Results

- Among the 137-youth participants, the joint prevalence of IgM and IgG was 20.4% (95%CI:14.4- 28.1),
- And separately:
 - 11.7% (95%CI: 7.2-18.3) for IgM;
 - 16.8% (95%CI:11.3-24.1) for IgG.
- The rate of self-reporting COVID-19 infection based on symptoms only was 7.6% and based on tests was 5.3%;
- 19.1% reported never wearing a mask in public venues;
- 23.9% believed they could easily recover from COVID-19;
- Among the participants with positive SARS-CoV-2 antibodies, most remained sexually active during quarantine measures reporting sex with steady and/or casual partners (66.6%); little more than a third reported not wearing a mask in public venues (36%), and believed they could easily recover from COVID-19 (34.4%).
- The multivariate analysis estimated a statistically significant association between SARS-CoV-2 infection and:
 - reports of no use of masks in public venues;
 - and among those who believed that they could easily recover from COVID-19.

Conclusions

- The prevalence of SARS-CoV-2 antibodies among yMSM and yTGW was higher than that estimated in seroprevalence surveys conducted in 2020 in the general population of Salvador, indicating a low perception of risk and low adherence to quarantine measures among yMSM and yTGW during the first wave, and likely underreporting of official seroprevalence data for Salvador.
- The high prevalence of SARS-CoV-2 among gender and sexual minority youth seems to be informed by behaviors and attitudes that contrast with public health measures and the potential severity of the disease when vaccination was still not available.
- The vulnerability of LGBT communities to the pandemic and the results should be considered by public health decision makers in designing health education interventions that are culturally acceptable and people-centered, i.e., addressing individual preferences, needs and values.

Table 1. Seroprevalence of SARS-CoV-2 infection among yMSM and yTGW in the PrEP1519 cohort, Salvador, Brazil, 2020.

Variable	n	%
SARS-CoV-2 infection		
Positive	28	20.4
Negative	109	79.6
IgG		
Positive	23	16.8
Negative	114	83.2
IgM		
Positive	16	11.7
Negative	121	88.3

Table 2. Bivariate and multivariate analysis of the association of study variables with SARS-CoV-2 infection seroprevalence among yMSM and yTGW in the PrEP1519 cohort, Salvador, Brazil, 2020.

Variables	COVID-19 (IgG+/IgM+)		
	Bivariate analysis		Multivariate analysis**
	n/N %	p-value	aOR (95% CI)
Sociodemographic			
Age		0.244	
16-18 years	12/46 26.1		
19-21 years	16/91 17.6		
Population group			
aTGW	5/24 20.8	0.976	
aMSM	22/107 20.6		
Household			
Number of household members		0.099	
≤ 3 people	10/68 14.7		
> 3 people	18/69 26.1		
Living alone		0.508*	
No	27/131 20.6		
Yes	1/3 33.3		
Living with the mother		0.074	
No	6/48 12.5		
Yes	22/86 25.6		
Living with siblings		0.025	
No	12/82 14.6		
Yes	16/52 30.8		
Number of rooms at home		0.863	
>3 rooms	21/101 20.8		
≤ 3 rooms	7/36 19.4		
Access to healthcare services		0.678*	
Exclusively National Health System (SUS)	19/97 19.6		
Exclusively private health plan	3/9 33.3		
Direct payment for consultations	- -		
Mixed (all of the above)	5/24 20.8		
Adherence to SARS-CoV-2 prevention measures			
Quarantine		0.145	
No	6/18 33.3		
Yes	22/119 18.5		
Using mask in public places		0.034	
Always	18/106 17.0		1.00
Never	9/25 36.0		3.11 (1.02-9.42)
Frequent hand washing		0.934	
No	13/64 20.3		
Yes	14/67 20.9		
Perceptions about COVID-19			
SARS-CoV-2 infection risk perception		0.063*	
Low	4/41 9.8		
High	24/96 25.0		
Perception of severity		0.873*	
Low	1/7 14.3		
Moderate	12/51 23.5		
High	14/73 19.2		
Believing that they can be easily cured of the disease		0.032	
No	17/102 16.7		1.00
Yes	11/32 34.4		2.68 (1.03-6.95)
Behavioral			
Alcohol use during quarantine		0.478	
No	10/60 16.7		
Yes, and with increased frequency	9/33 27.3		
Yes, albeit with the same frequency	8/37 21.6		
Sexual partner during the pandemic		0.064*	
No	9/43 20.9		
Yes, with a steady partner	7/45 15.6		
Yes, with casual partners	3/25 12		
Yes, with both	8/18 44.4		

*Chi-squared or Fisher's exact test ** Adjusted by population group and hand washing

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