

# Clinical-epidemiological profile and factors associated with viral load non-suppression in people living with HIV: Maputo Military Hospital (CITRA/MMH), 2019-2020

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The study highlights the crucial role of adherence to antiretroviral therapy (ART) and continuous monitoring in achieving viral suppression. Need to transition eligible individuals to DTG-based regimens and address the implications of single marital status and comorbid conditions.

## BACKGROUND

HIV remains a critical global public health challenge. In 2022, it was estimated that approximately 39.0 million people were living with HIV (PLHIV) worldwide, and of these, around 29.8 million were receiving antiretroviral therapy (ART). The objective was to evaluate the clinical and epidemiological profile and factors associated with viral load non-suppression in people living with HIV/AIDS at the Maputo Military Hospital (CITRA/MMH).

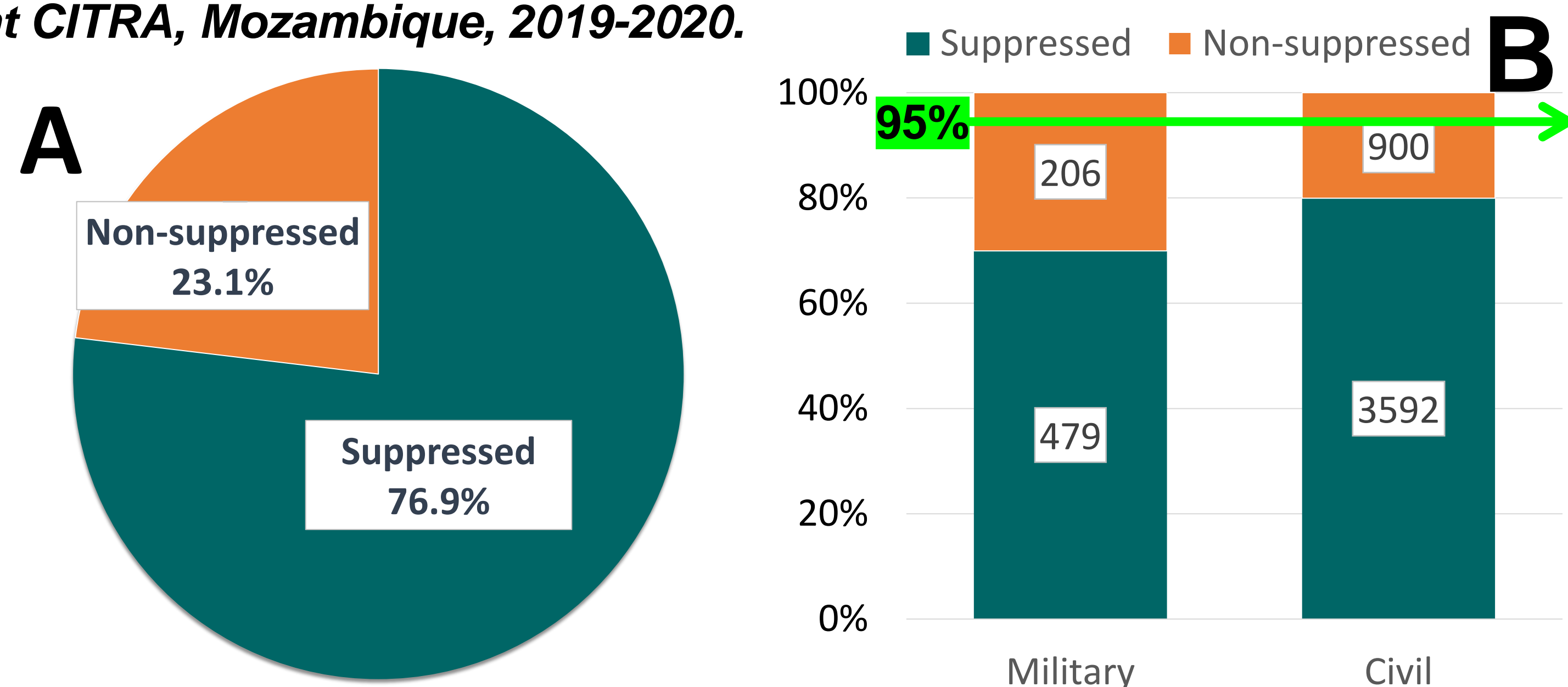
## METHODS

This retrospective descriptive cross-sectional study was conducted on 9,015 people aged 15 years and over. We use secondary data from patients on ART for at least 2 years being followed up between the years 2019-2020 at CITRA/MMH. Data analysis was performed using STATA version 16. Pearson's chi-square test and logistic regression were used for statistical modeling of viral non-suppression with a 95%/CI confidence interval and  $p < 0.05$ .

## RESULTS

Among a total of 9105 HIV patients included, 52.8% ( $n=4808$ ) were female and 13.6% ( $n=1235$ ) were military personnel. The average age was 47.9 years (standard deviation  $\pm 12.1$ ). Only 5395 (100%) participants had viral load results. Among these, 76.9% ( $n=4148$ ) achieved suppressed viral loads (Figure 1). Single marital status (Adjusted Odds Ratio [AOR]=4.8, 95%CI: 3.93-5.76,  $p < 0.001$ ), with active tuberculosis (AOR=4.6, 95%CI: 3.15-6.63,  $p < 0.001$ ) and current ART regimen in categories TDF+3TC+EFV (AOR=12.7, 95%CI: 9.74-16.63,  $p < 0.001$ ), AZT+3TC+NVP (AOR=21.8, 95% CI: 14.13-33.59,  $p < 0.001$ ) and other regimens (AOR=25.8, 95%CI: 18.58-35.80,  $p < 0.001$ ), when compared to the TDF+3TC+DTG regime, were statistically significant for Viral Load (VL) non-suppression (Table 1).

Figure 1. Viral suppression (A) and Comparison of viral load suppression among civilian and military patients (B) on ART assisted at CITRA, Mozambique, 2019-2020.



## RESULTS CONTINUED

Table 1. Factors associated with viral load non-suppression in people living with HIV: Maputo Military Hospital (CITRA/MMH), 2019-2020

Variables	Odds Ratio (OR)					
	Crude	(95% CI)	P	Adjusted	(95% CI)	P
<b>Sex</b>						
Male	1 (Ref)					
Female	1.0	(0.87-1.13)	0.91			
<b>Etaria group</b>						
15-24	1 (Ref)					
25-59	1.2	(0.79-1.08)	0.75			
60+	1.1	(0.69-1.67)	0.43			
<b>Marital Status</b>						
Marital union	1 (Ref)					
Single	9.3	(8.06-10.71)	<0.001	4.8	(3.93-5.76)	<0.001*
<b>Follow-up time (years)</b>						
2-5	1 (Ref)					
6-9	0.4	(0.29-0.46)	<0.001	0.7	(0.48-1.07)	0.10
10+	0.5	(0.47-0.62)	<0.001	1.1	(0.77-1.43)	0.75
<b>Current ART regimen</b>						
TDF+3TC+DTG	1 (Ref)					
TDF+3TC+EFV	14.0	(11.39-17.29)	<0.001	12.7	(9.74-16.63)	<0.001*
AZT+3TC+NVP	33.5	(23.50-47.88)	<0.001	21.8	(14.13-33.59)	<0.001*
Other	38.0	(29.59-48.80)	<0.001	25.8	(18.58-35.80)	<0.001*
<b>Type of patient</b>						
Military	1.7	(1.44-2.05)	<0.001	1.1	(0.86-1.44)	0.40
Civilian	1 (Ref)					
<b>Kaposi's sarcoma</b>						
Yes	2.7	(1.58-4.49)	<0.001	1.2	(0.65-2.23)	0.56
No	1 (Ref)					
<b>Active tuberculosis</b>						
No	1 (Ref)					
Yes	1.5	(1.12-2.10)	0.008	3.6	(3.15-6.63)	<0.001*

\*significant at P-value of <0.05

## CONCLUSIONS

The majority of PLHIV seeking care at CITRA/MMH were adults aged 25-59, living with a civil partner, and on treatment for 10 or more years. The observed level of VL suppression was low compared to the 3<sup>rd</sup> UNAIDS 95 target. In addition, considering that only 60% of those on ART had VL results, the rate of VL suppression is likely lower. VL non-suppression was associated with tuberculosis infection, being on non-dolutegravir (DTG) based regimens, and single marital status. This study emphasizes the importance of ART adherence and ensuring the transition to DTG-based regimens for eligible PLHIV.

## ADDITIONAL KEY INFORMATION

**Keywords:** Viral non-suppression, Viral load, HIV, ART, Mozambique, Epidemiologic Factors

**Other Key Information:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11265015/>

**Ethical consideration:** Approved by CIBS FM&HCM/050/2021

**Conflicts of Interest:** No Conflicts of Interest

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