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# INITIATION, CESSATION AND RELAPSE OF TOBACCO SMOKING AMONG PARTICIPANTS IN A LARGE LONGITUDINAL COHORT IN RURAL SOUTH AFRICA

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- The participants for taking part in the study.



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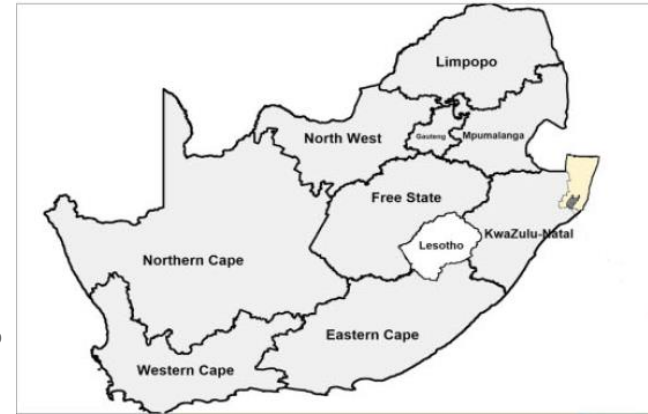
## BACKGROUND

- Tobacco smoking is believed to be increasing in many low-and-middle-income countries (LMICs).
- In 2021, a quarter of South Africans aged  $\geq 15$  years smoked tobacco (42% among males and 12% among females), an increase from 2016 (37% among males and 8% among females)<sup>1</sup>.
- Tobacco smoking prevalence is a function of smoking initiation, cessation, and relapse – however data on these rates are rare, particularly in rural areas.
- Quantifying these rates and understanding their determinants can inform tailored and targeted tobacco control strategies and model projections of the impact of changes in tobacco use over time.
- **Objective:** To investigate smoking initiation, cessation, and relapse over an approximately 3-year period in rural South Africa and their associated sociodemographic and behavioural determinants.



## STUDY DESIGN

- The Vukuzazi population cohort was established in 2018 in the uMkhanyakude district in rural KwaZulu-Natal, an area with high HIV burden. The Vukuzazi study intended to examine infectious and non-communicable diseases in the region.
- There were 18,041 enrolled participants aged  $\geq 15$  years, of whom 34.2% were living with HIV.
- Baseline data collection (May 2018-March 2020) included history of tobacco use.
- A follow-up telephonic tobacco-focused survey (May 2021-November 2022) was conducted among a subset of baseline participants.
- Target sample: approx. 1000 individuals who reported current smoking at baseline, 100 individuals who reported former smoking, and 400 individuals aged 15-29 years who reported never smoking, aiming for equal samples by HIV serostatus





## OUTCOME MEASURES

The following primary outcomes were based on self-report:

- **Smoking initiation** (15-29-year-olds): baseline never smoking → follow-up current or former smoking
- **Smoking cessation**: baseline current smoking → follow-up former smoking
- **Smoking relapse**: baseline former smoking → follow-up current smoking





## STATISTICAL ANALYSIS

### Covariates:

	Initiation	Cessation	Relapse
Age	x	x	x
Sex	x	x	
Employment	x	x	
Socioeconomic status	x	x	x
HIV care cascade status	x	x	x
Alcohol use	x (past-year)	x (past month)	x (past-year)
Smoking duration (years)		x	
Smoking intensity		x	
Past-year quit attempt		x	
Received HCW advice to quit		x	
Hypertension		x	
Diabetes		x	
Developed TB since baseline		x	
Difficulties in daily tasks (at follow-up)		x	

HCW: Health care worker.

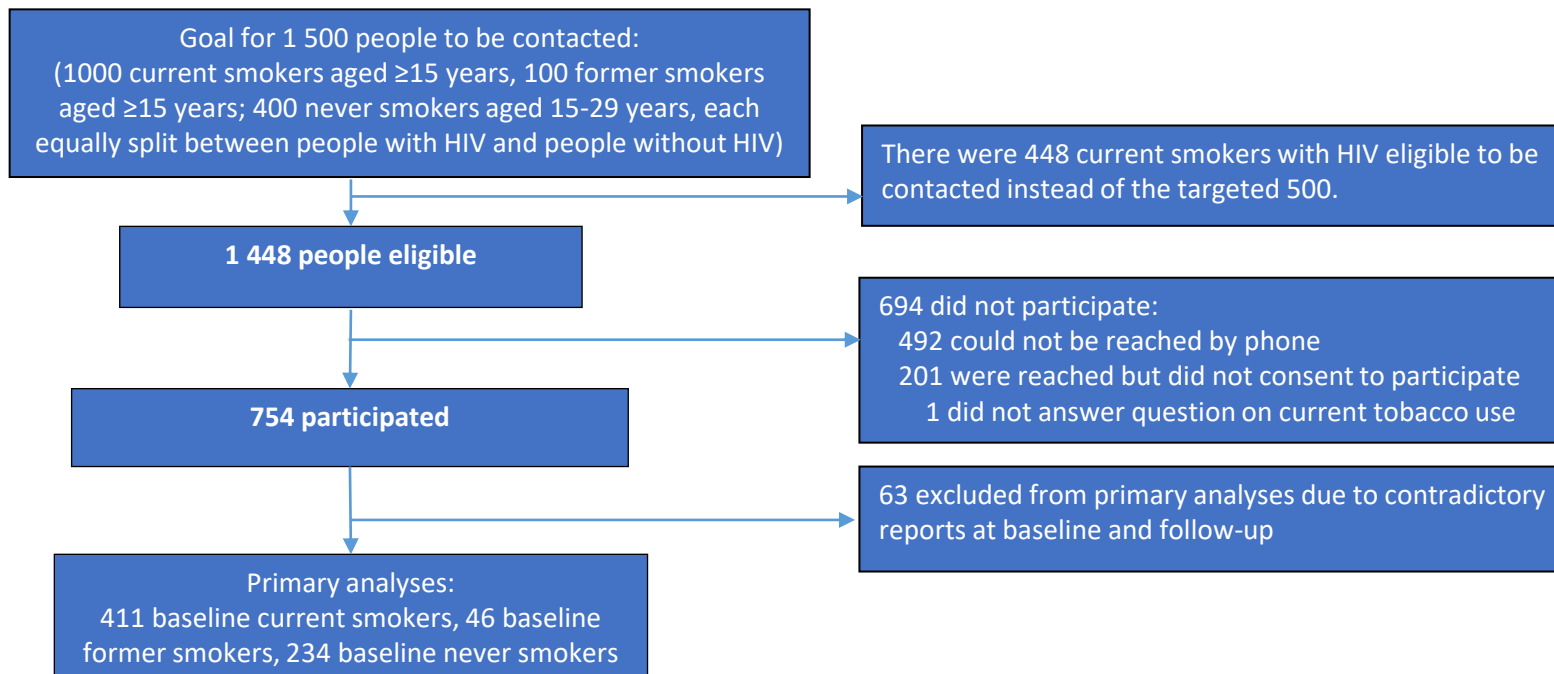
- Covariate selection was based on literature on factors associated with changes in smoking status and the available data per smoking outcome.
- Logistic regression models were used to determine the factors associated with each outcome.
- Variables with a p-value of <0.25 in univariate logistic regression models were included in the multivariable regression models.







## RESULTS – PARTICIPATION RATE





## RESULTS: CHANGES IN SMOKING STATUS BETWEEN BASELINE AND FOLLOW-UP

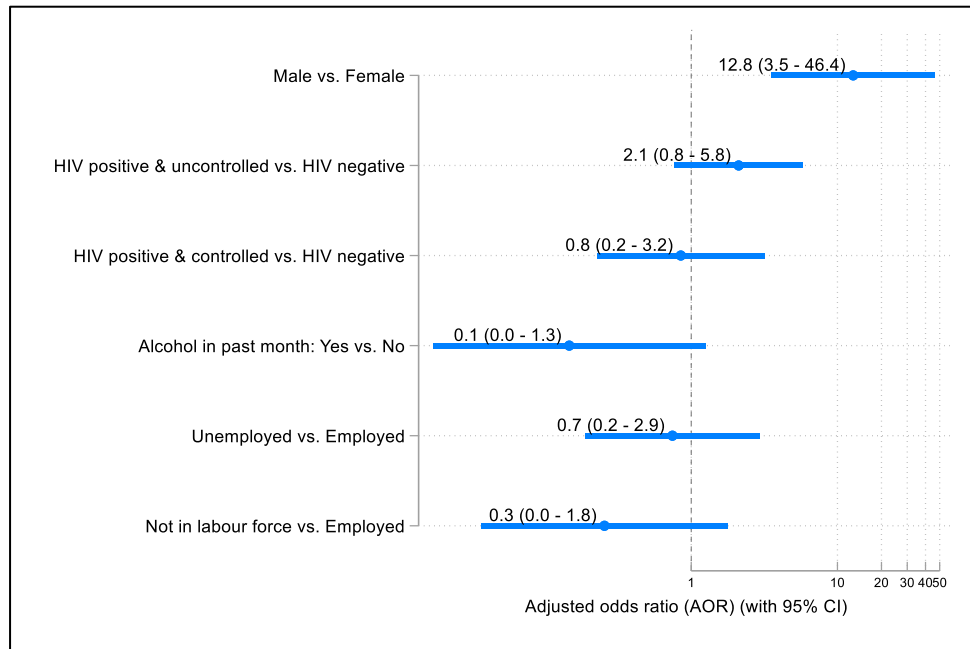
- Over 87% of participants retained their smoking status between baseline and follow-up.
- Nearly tenfold higher smoking initiation among males than females aged 15-29 years.

	Smoking initiation (among baseline NS) <sup>1</sup>		Smoking cessation (among baseline CS) <sup>2</sup>		Smoking relapse (among baseline FS) <sup>2</sup>	
	%	95% CI	%	95% CI	%	95% CI
<b>Total</b>	<b>12.0</b>	<b>8.4-16.8</b>	<b>12.9</b>	<b>10.0-16.5</b>	<b>10.9</b>	<b>4.4-24.2</b>
Males	22.5*	15.7-31.3	12.3	9.4-16.0	12.2	5.0-26.9
Females	2.4	0.8-7.3	28.6	11.1-56.2	0.0	-

NS: people who reported never-smoking at baseline, CS: people who reported current smoking at baseline, FS: people who reported former smoking at baseline

1. Among participants 15-29 years old, 2. Among participants  $\geq$ 15 years old. \*  $p < 0.01$

## RESULTS – LOGISTIC REGRESSION FOR SMOKING INITIATION



Among participants aged 15-29 who reported never smoking at baseline:

- Males had significantly higher odds of initiating smoking than females (AOR 12.8, 95% CI:3.5-46.4).

HIV positive & uncontrolled: Either undiagnosed, diagnosed and not in care, or in care and viral load [VL]≥400 copies/ml. HIV positive & controlled: HIV positive and diagnosed, in care and VL<400 copies/ml.

## RESULTS – LOGISTIC REGRESSION FOR SMOKING CESSATION



Among participants who reported current smoking at baseline:

- Moderate to heavy smoking (compared to light smoking) was associated with lower odds of quitting smoking (AOR 0.27, 95% CI:0.08-0.93).
- Middle SES (compared to low SES) was associated with lower odds of quitting smoking (AOR 0.37, 95% CI:0.15-0.89).

\* Moderate-heavy smokers: >10 products per day.



## CONCLUSIONS

- Nearly 1 in 4 males who did not smoke at baseline subsequently initiated smoking over a 3-year period in rural South Africa, demonstrating the need for smoking prevention interventions.
- Higher smoking intensity and middle SES (relative to low SES) were associated with lower smoking cessation.
  - Intensive cessation treatment programs could help moderate to heavy smokers to quit.
  - Tailored interventions are needed to help middle SES smokers to quit, as they may be less responsive to tobacco taxation policies.
- In settings such as this with high HIV burden, HIV care infrastructure could be leveraged to provide tobacco cessation counseling and other interventions.

Thank you!

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