



Prevalence, outcomes, and factors associated with testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection among people living with HIV across Europe in the multinational EuroSIDA cohort.

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No conflict of interest

Background

- People living with HIV (PLWH) have a high prevalence of conditions such as advanced immune deficiency/AIDS and non-AIDS defining comorbidities, that increase the risk of severe coronavirus disease (COVID-19).
- Increasing age of the population living with HIV also increases their vulnerability to the symptomatic COVID-19 and severe outcomes.
- While timely diagnosis improves the prognosis, testing capacities and COVID policies varied across regions during the first year of the pandemic.

Study objectives

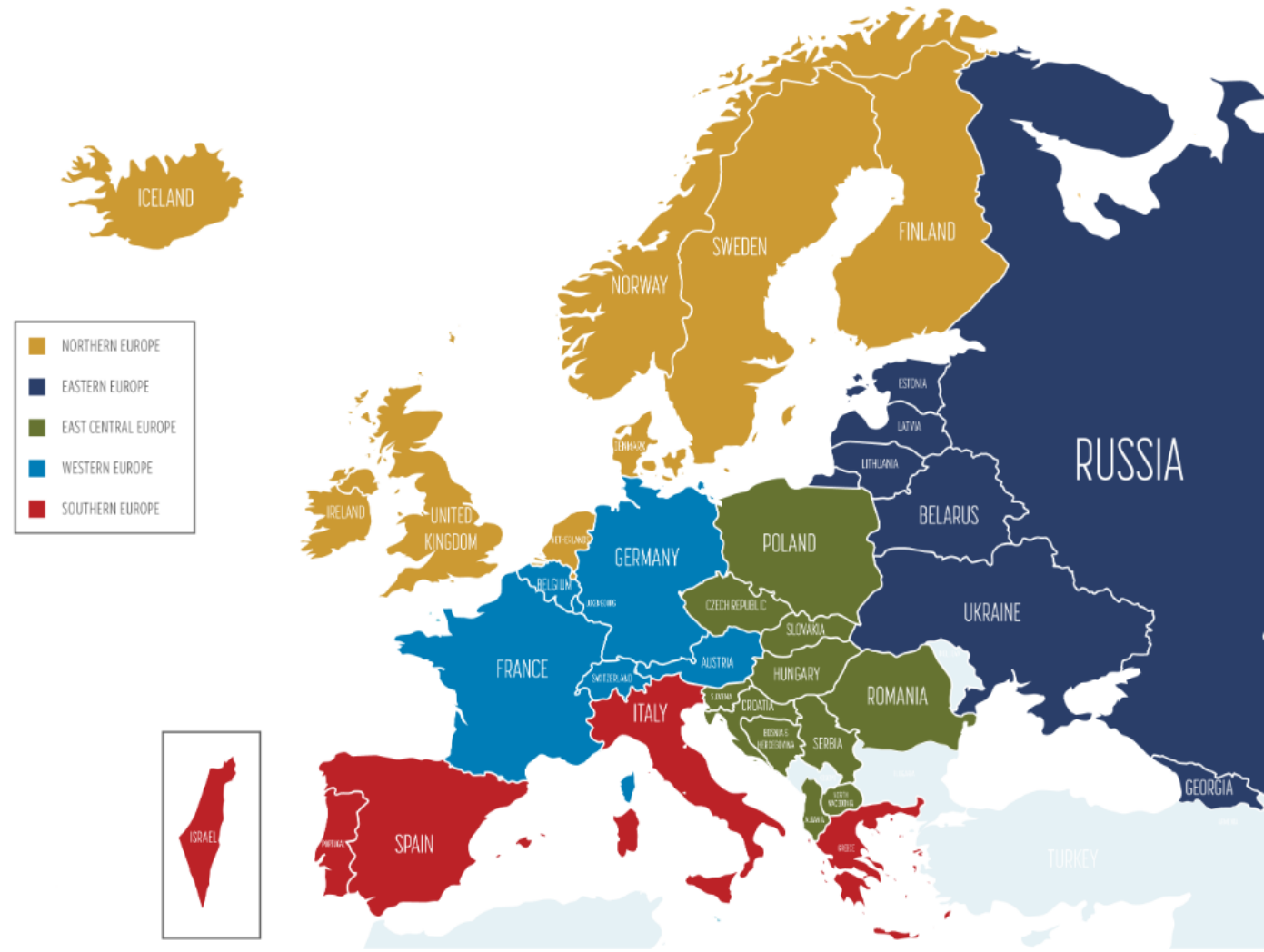
- To describe SARS-CoV-2 testing in a large European cohort of PLWH during 2020
- To investigate factors associated with PCR testing as well as with positive test results.

Methods

PLWH from the EuroSIDA cohort under prospective follow-up on 1 January 2020 were included from the 55 sites in 26 countries that provided any testing data.

Proportions of PCR testing, positive test results, and hospitalisations reported up to 1 January 2021 were compared across five European regions.

Multivariable logistic regression was used to determine factors from a pre-specified set of potential predictors* associated ($p < 0.05$) with being tested for SARS-CoV-2 (vs untested) and with at least one positive test result (vs negative).



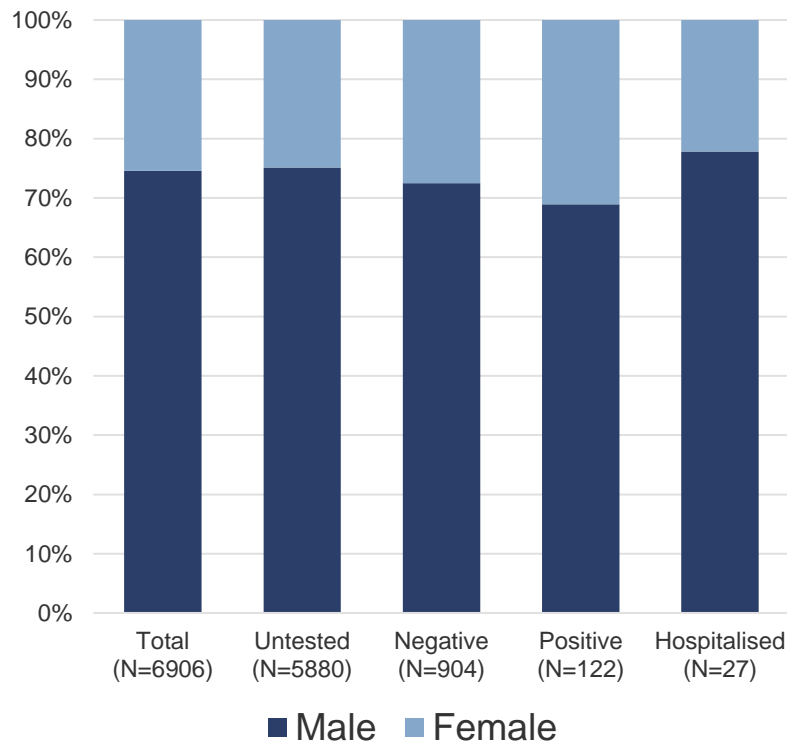
* region, gender, age group, HIV transmission risk group, BMI category, currently receiving a TDF-containing regimen, prior cardiovascular disease (CVD), prior malignancy, prior diabetes mellitus

Results: SARS-CoV-2 testing coverage and hospitalisations

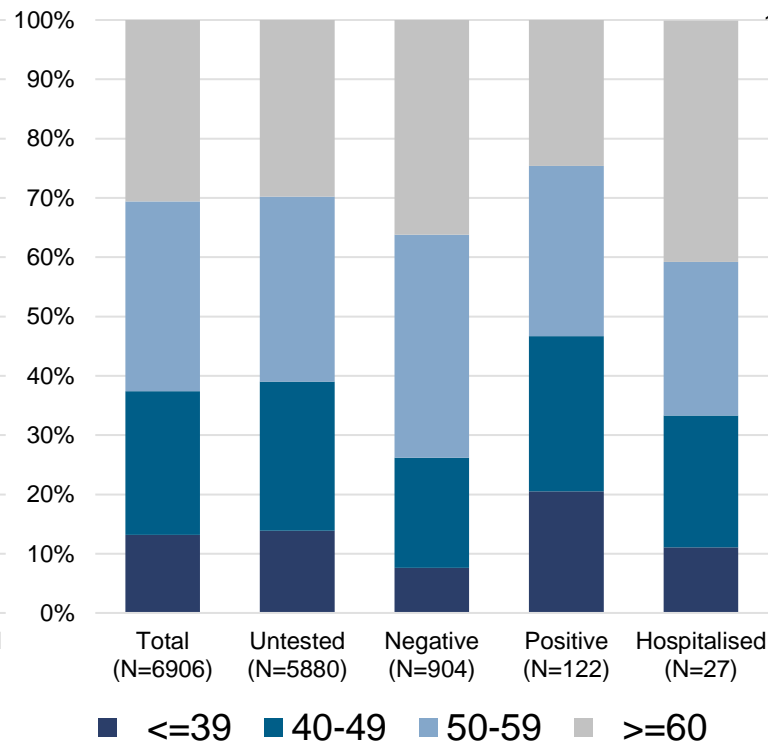
- Of 6,906 participants, 1026 (14.9%, 95%CI 14.0–15.7) had at least one SARS-CoV-2 PCR test performed during 2020.
- The proportion ranged from 32.3% in Northern Europe to 5.6% in Central-Eastern and 7.1% in Eastern Europe.
- Overall, 122 PLWH (1.8%, 95%CI 1.5–2.1) tested positive, ranging from 0.9% in Northern Europe to 2.3% in Southern Europe.
- Twenty-seven persons were hospitalised due to COVID-19 (0.4% of the study population, 95%CI 0.3–0.6), ranging from 0.3–0.6% across regions. Of these, five received life support, and six died.

SARS-CoV-2 testing, positivity and hospitalisations – Demographic characteristics

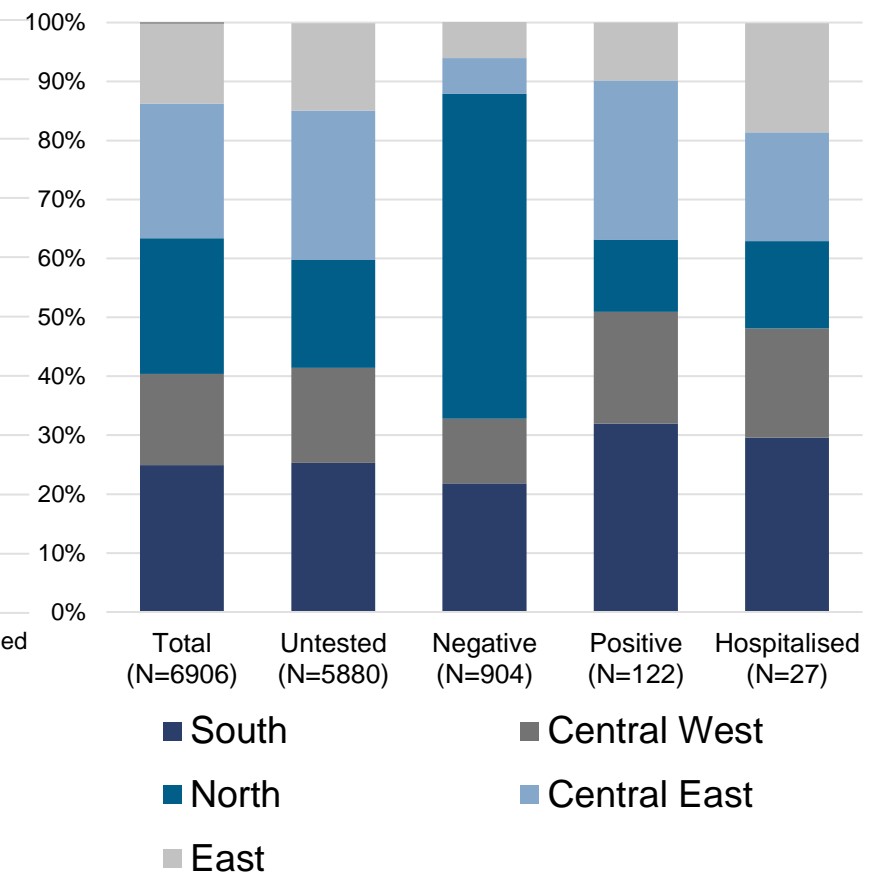
Gender distribution



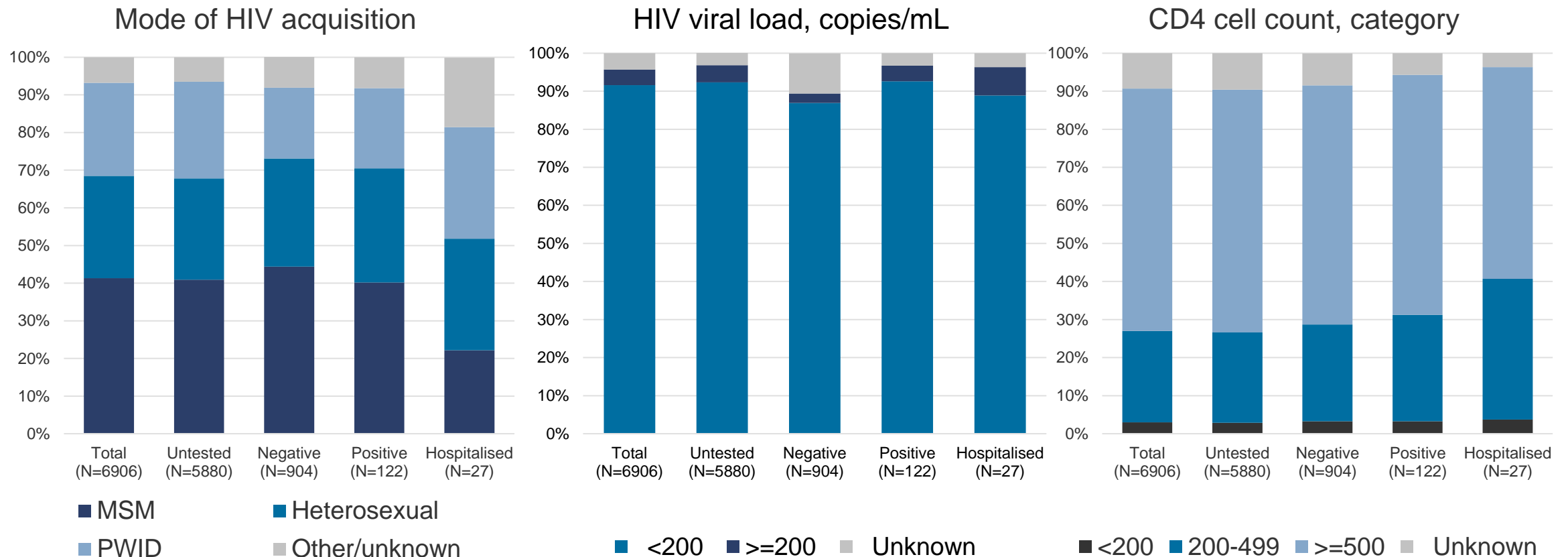
Distribution by age category



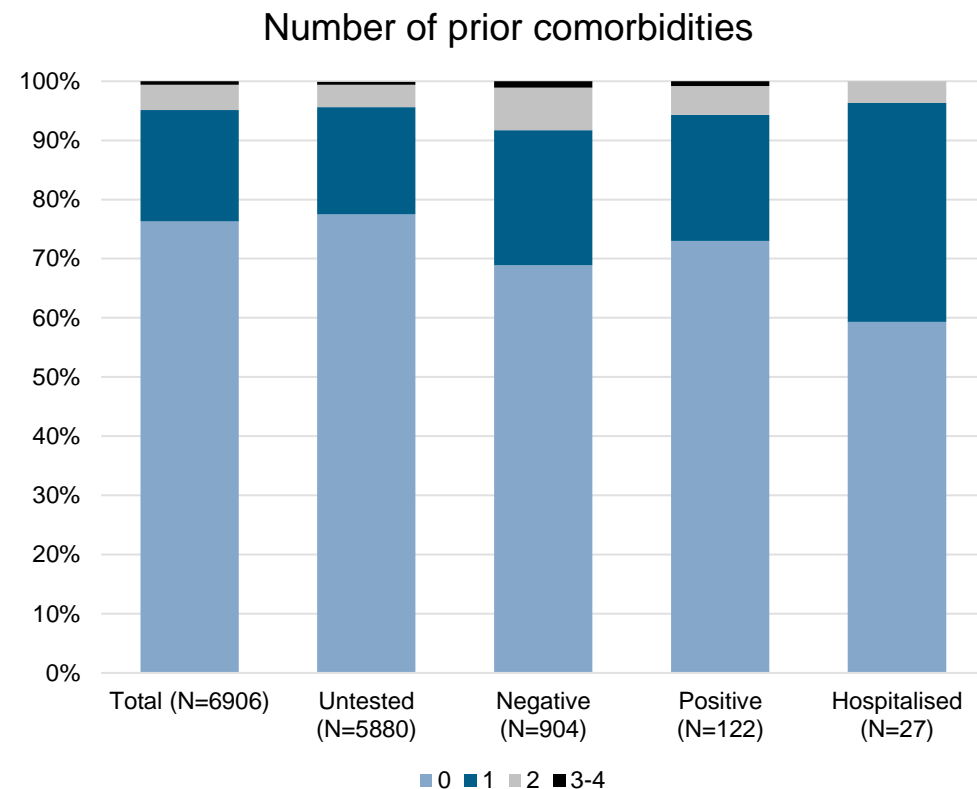
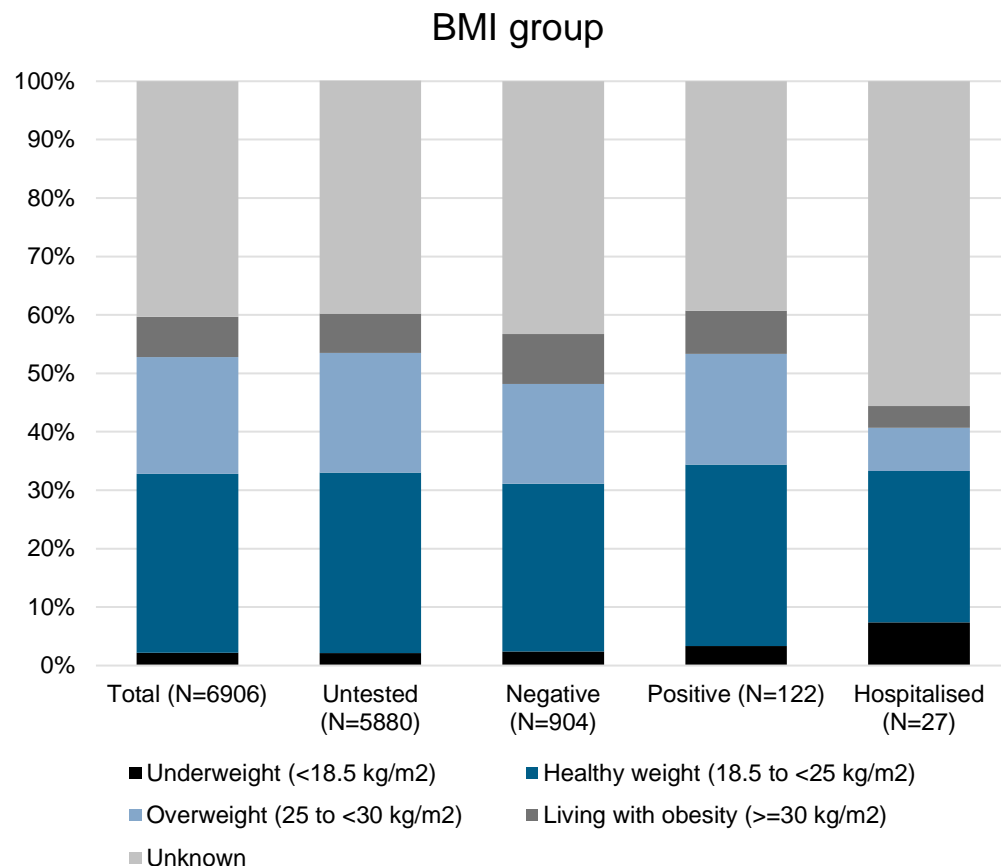
Regional distribution



SARS-CoV-2 testing, positivity and hospitalisations – HIV related characteristics

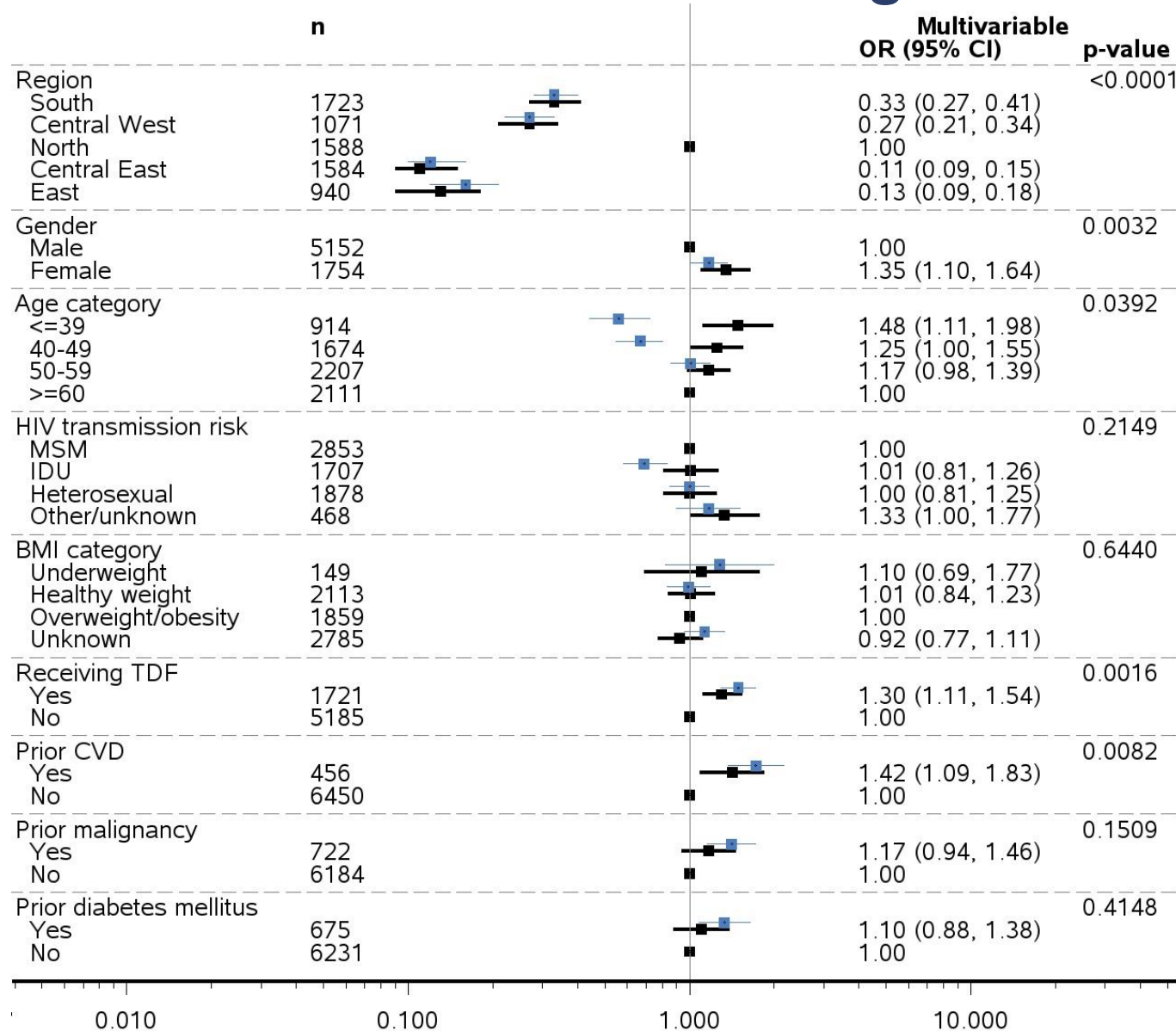


SARS-CoV-2 testing, positivity and hospitalizations – Clinical characteristics



Comorbidities include: prior cardiovascular disease, diabetes mellitus, cancer, end-stage liver disease, end-stage renal disease.

Factors* associated with testing for SARS-CoV-2

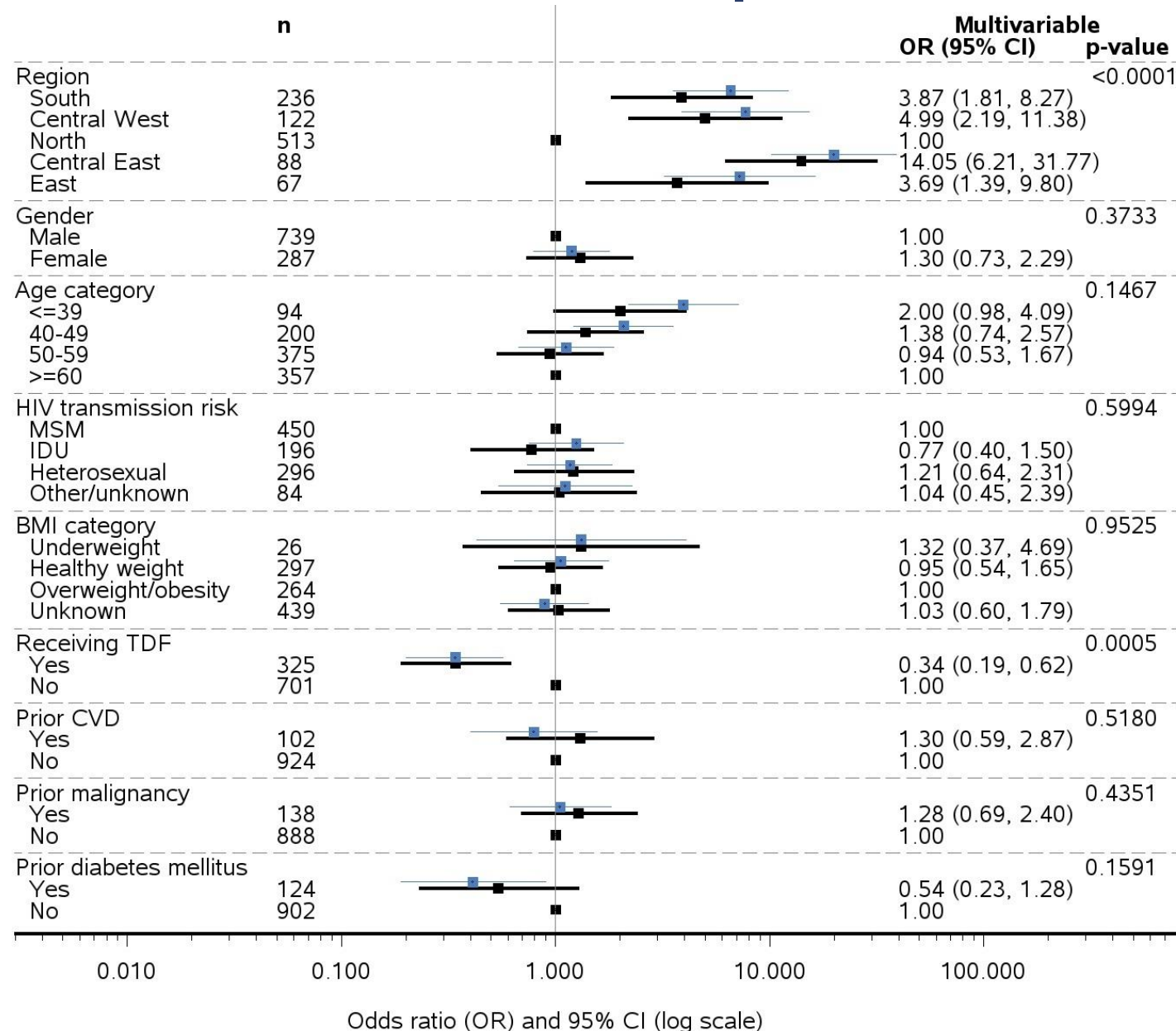


- univariable analysis
- multivariable analysis*

Age category, test for trend (adjusted): p=0.0047

*Multivariable model includes all factors presented here and additionally adjusted for CD4 cell count, HIV RNA, liver fibrosis, chronic kidney disease.

Factors* associated with a positive test result



- univariable analysis
- multivariable analysis*

Age category, test for trend (adjusted): p=0.0451

*Multivariable model includes all factors presented here and additionally adjusted for CD4 cell count, HIV RNA, liver fibrosis, chronic kidney disease.

Conclusions

- Large heterogeneity in SARS-CoV-2 testing in PLWH across EuroSIDA regions.
- The proportion of hospitalisations was consistent across regions, and the proportion of COVID-related deaths was low and consistent with the levels in general population.
- Northern region was associated with the higher likelihood of being tested and lower likelihood of a positive test. Younger age was associated with the higher likelihood of being tested as well as having a positive test.
- Female gender and prior CVD associated with higher odds of being tested.
- TDF was associated both with testing and a negative test result, requiring further investigation.

Next steps

- To update the analysis with 2021 data.
- We are also conducting a further study to investigate the impact of COVID-19 on HIV care across EuroSIDA regions.

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