High Mortality in SUT Patients, particularly among women, and regional variations in mortality risks

Mortality following substance use disorder treatment: population-based record-linkage retrospective cohort design

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Background

- Chile has one of the highest alcohol consumption in the continent[1]
- In 2016, led in high school cocaine, coca paste, and marijuana use[2]
- Over 170% growth in drug-related mortality, 2000 vs 2019[3]
- In 2020, 6% of Chileans (12-64) had a problematic substance (alcohol & drug) use [4]
- In Chile, the government funds substance use treatments (SUT) for all with public health insurance (~81% of the population)[5]
- There is limited information regarding short-term, medium-term, and long-term mortality risks
- Analyzing mortality among administrative regions may reveal disparities in post-treatment outcomes
- Regional data can inform policy and resource allocation

Objectives

To describe the standardized mortality ratios (SMRs) for all adult patients in publicly funded SUT within 2010-2022, along with regional specificities

Methods

Design: a population-based retrospective cohort of adults enrolled in Chilean SUT programs (18-65) with national mortality data (2010-2020).

Analysis plan. We calculated SMRs by comparing the observed deaths vs. the expected within regions, age groups (18-29, 30-44, 45-59 & 60-65), periods (annually), and across sexes. Stratum-specific population estimates were obtained from the Ministry of Health's mortality data, supplemented by population projections from the National Institute of Statistics' open data portal[6]. Regional data on cocaine, marijuana, and hazardous alcohol use were obtained from the 2020 Chile National Drug Study by the National Drug and Alcohol Prevention and Rehabilitation Service. 95% confidence intervals(CIs) were calculated using Vandenbroucke's method[7].
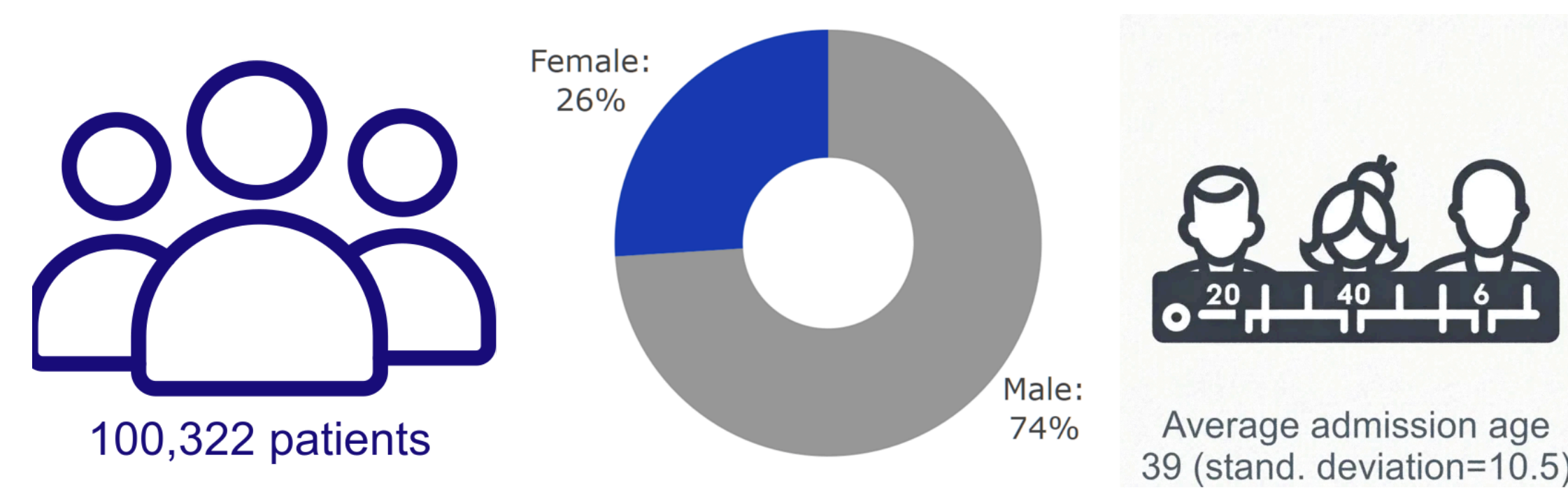
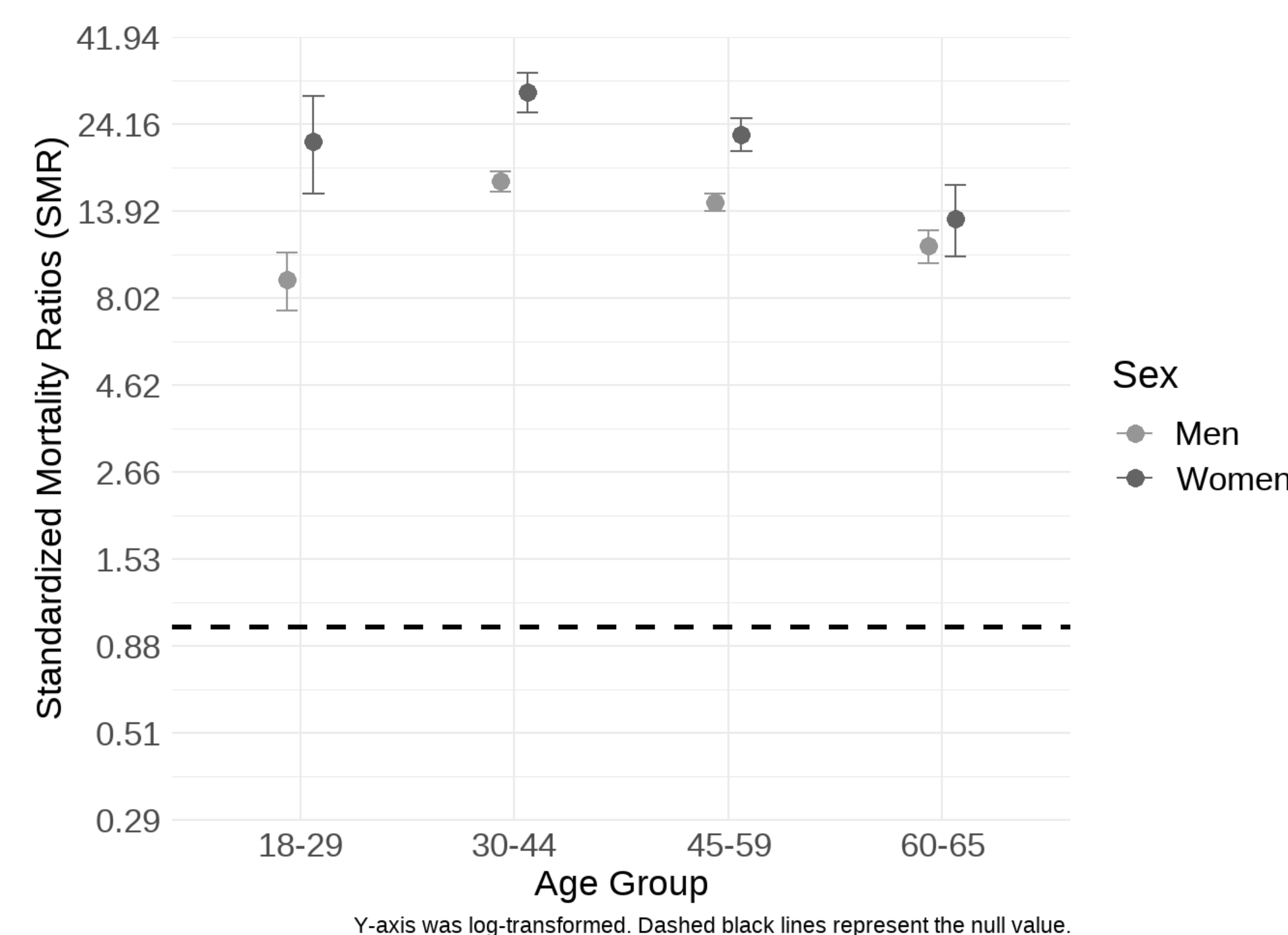## Preliminary Results

Figure 1: Characteristics of SUT patients

100,322 patients
Female: 26%
Male: 74%
Average admission age 39 (stand. deviation=10.5)

Figure 2: Standardized mortality ratios for people in SUT, by age group and sex

Y-axis was log-transformed. Dashed black lines represent the null value.
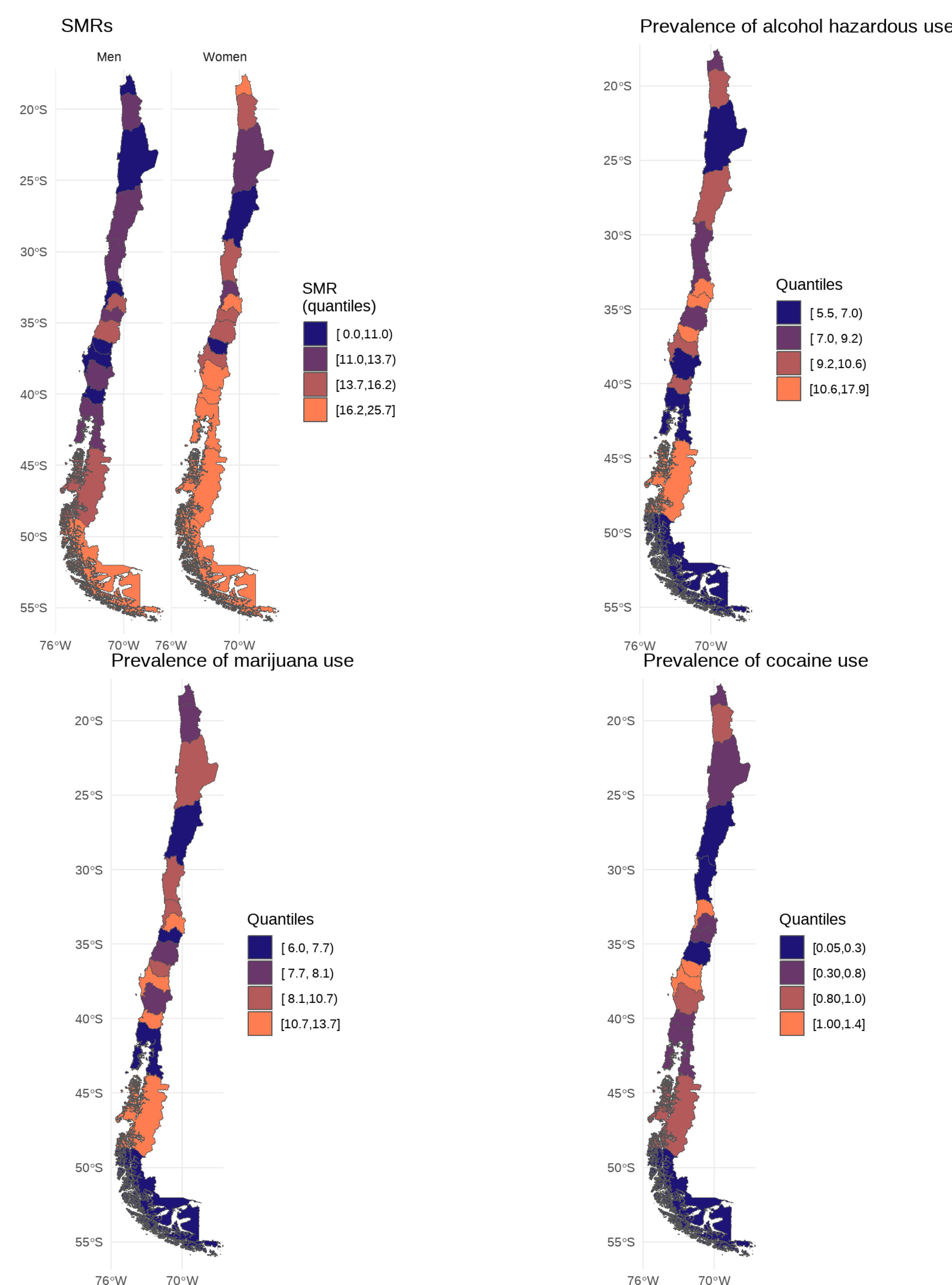

Figure 3: Regional data in quartiles

The SMR in the SUT population was 15.5 (95%CI 15.0, 16.1) times higher than expected based on the general population. Women aged between 30-44 had a mortality risk up to 29.6 times (95%CI 26.0, 33.5) higher than expected.

Regions with high SMRs for men also have high SMRs for women. There were also regional variations in mortality risks post-SUT, but the regional prevalence of problematic substance use does not appear to be related to SMRs.

Discussion

- High cumulative mortality risk in SUT patients vs. general population
- Higher risk particularly among women
- Largest sex gap at younger ages
- Further exploration of substance use's contribution to elevated risk
- Mortality risks were higher in areas influenced by ethnic and cultural barriers, discrimination, or geographical isolation, which hinder access to treatment

References

[1] *B. Vicente, S. Saldivia, and R. Pihán. "Prevalencias y brechas hoy: salud mental mañana". In: Acta bioethica 22 (2016), pp. 51–61. ISSN: 1726-569X. DOI: 10.4067/S1726-569X2016000100006.*

[2] *Inter-American Drug Abuse Control Commission [CICAD]. Report on Drug Use in the Americas 2019: Executive Summary. Tech. rep. Washington, DC, 2019. URL: http://www.cicad.oas.org/cicaddocs/Document.aspx?Id=4976.*

[3] *OECD and World Bank. Health at a Glance: Latin America and the Caribbean 2023. 2023. DOI: https://doi.org/10.1787/532b0e2d-en. URL: https://www.oecd-ilibrary.org/content/publication/532b0e2d-en.*

[4] *Servicio Nacional para la Prevención y Rehabilitación del Consumo de Drogas y Alcohol [SENDA]. Décimo Cuarto Estudio Nacional de Drogas en Población General de Chile, 2020. Tech. rep. Santiago, Chile: Ministerio del Interior y Seguridad Pública, 2022. URL: https://www.senda.gob.cl/wp-content/uploads/2022/01/Estudio-PG2020.pdf.*

[5] *M. Mateo-Pinones, A. González-Santa Cruz, R. Portilla Huidobro, et al. "Evidence-based policymaking: Lessons from the Chilean Substance Use Treatment Policy". In: International Journal of Drug Policy 109 (nov.. 2022), p. 103860. ISSN: 0955-3959. DOI: 10.1016/j.drugpo.2022.103860. URL: https://www.sciencedirect.com/science/article/pii/S0955395922002766.*

[6] *Instituto Nacional de Estadísticas [INE]. Tablas de Mortalidad de Chile 1992-2050: Documento Metodológico. ene.. 2023. URL: https://www.ine.gob.cl/docs/default-source/proyecciones-de-poblacion/metodologia/proyecci%C3%B3n-base-2017/tablas-de-mortalidad-de-chile-1992-2050-metodologia.pdf?sfvrsn=ff4b0f8a_5).*

[7] *M. Szklo and F. J. Nieto. Epidemiology : beyond the basics. Fourth edition. Burlington, Mass: Jones & Bartlett Learning, 2019. ISBN: 978-1-4496-0469-T.*

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