Online Resource 9. Additional descriptive figures

Article: Age–period–cohort effects on suicide mortality in Andalusia, Spain (2000–2024): demographic masking and sustained pandemic excess

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This Online Resource collects supplementary figures that provide additional descriptive context for the analyses presented in the main text. These include visualisations of the absolute burden of suicide mortality, population structure changes underlying the demographic masking phenomenon, sex-stratified crude rate trends, the divergence between crude and age-standardised rates, age-specific mortality patterns by quinquennium and sex, and a Lexis surface representation of suicide rates across age and period.

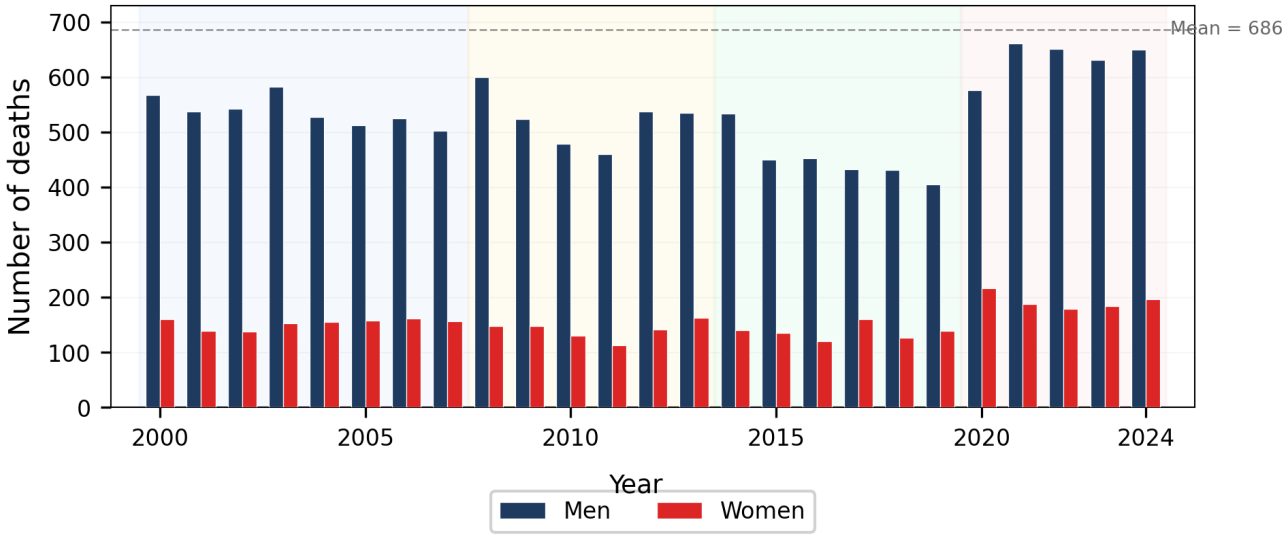

Figure S20. Annual number of suicide deaths by sex, Andalusia, 2000–2024. Grouped bar chart showing men (dark blue) and women (red) separately. Horizontal dashed line: overall annual mean (686 deaths). Background bands indicate the four historical periods (blue: pre-crisis 2000–2007; yellow: economic recession 2008–2013; green: recovery 2014–2019; red: pandemic/post-pandemic 2020–2024). A total of 18,350 deaths were recorded over the 25-year period (14,206 men, 77.4%; 4,144 women, 22.6%). The annual count ranged from 640 (2019) to 849 (2021). The male predominance is evident throughout the series. The pandemic period shows the highest absolute burden, driven by both male and female increases.

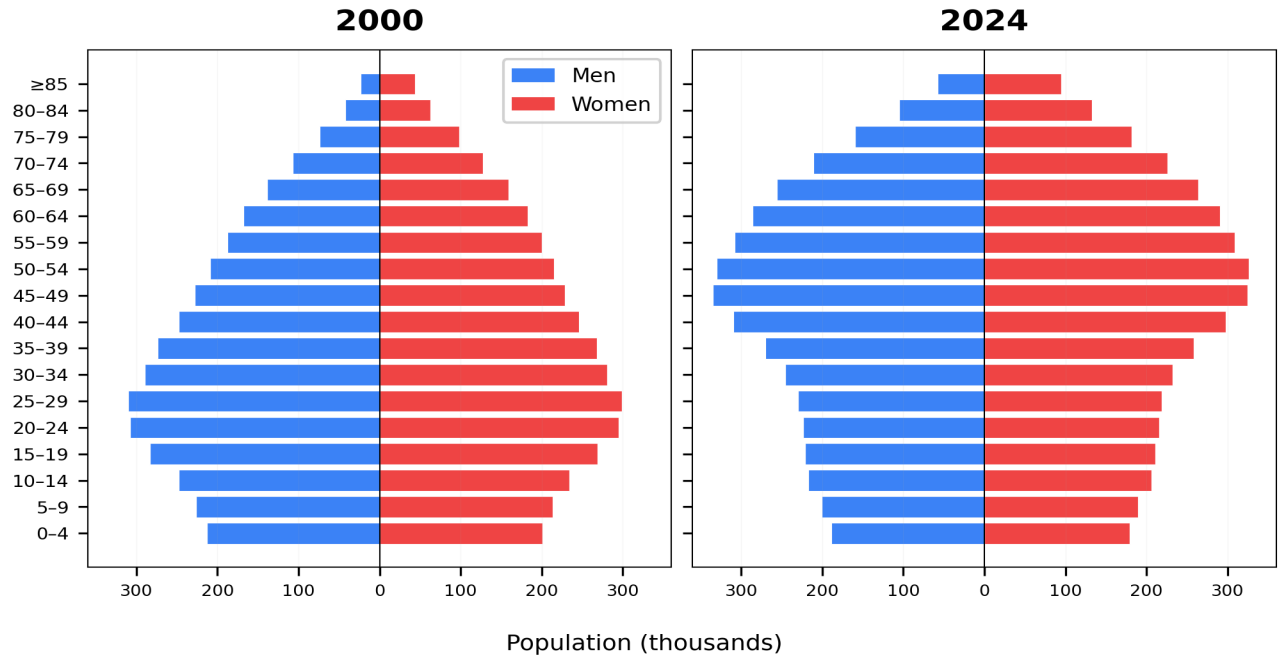

Figure S21. Population pyramids of Andalusia: 2000 versus 2024. Horizontal bars represent the population (in thousands) by five-year age group, with men (blue, left) and women (red, right). The 2000 pyramid displays a younger age structure with a broad base (large cohorts aged 15–34), whereas the 2024 pyramid shows the effects of demographic ageing: a narrower base, expansion of the 40–64 bulge (baby boom cohorts), and growth of the 65+ population. This structural shift is the mechanism underlying the demographic masking effect described in the main text: as the population ages, the weight of high-risk older groups in the crude rate increases, offsetting the genuine decline in age-adjusted risk and producing apparently stable crude rates despite falling age-standardised rates.

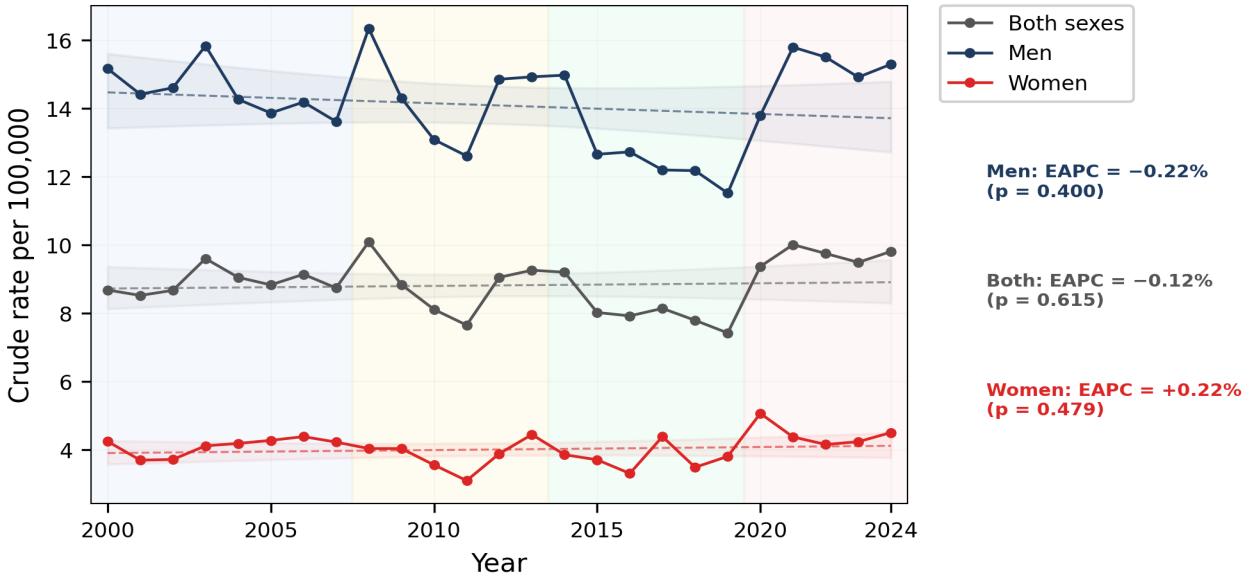

Figure S22. Crude suicide mortality rates by sex with Prais–Winsten trend lines, Andalusia, 2000–2024. Markers with solid lines: observed annual crude rates per 100,000 for both sexes (grey), men (dark blue), and women (red). Dashed lines: fitted log-linear trend from Prais–Winsten regression correcting for AR(1) autocorrelation. Shaded bands: 95% confidence intervals for the trend. None of the crude rate trends was statistically significant (both sexes: EAPC = –0.12%, p = 0.615; men: EAPC = –0.22%, p = 0.400; women: EAPC = +0.22%, p = 0.479), illustrating the apparent stationarity of crude rates that masks the underlying decline in age-standardised risk.

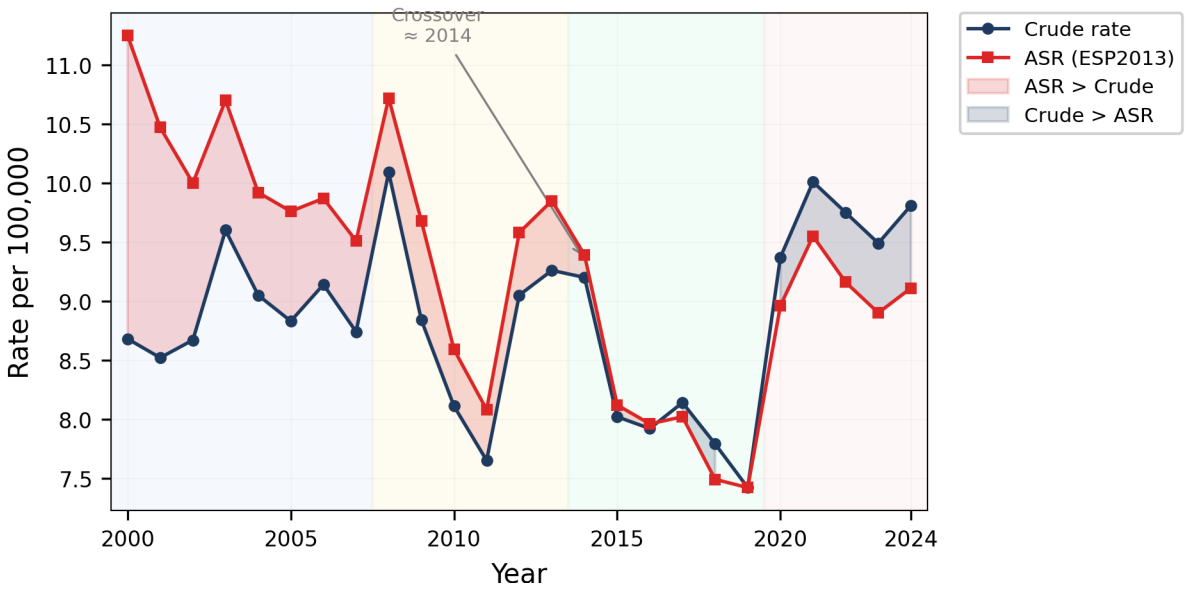

Figure S23. Divergence between crude and age-standardised suicide mortality rates, both sexes, Andalusia, 2000–2024. Dark blue circles: crude rate; red squares: age-standardised rate (ASR, ESP2013). The shaded area between the two curves illustrates the magnitude and direction of the demographic masking effect. Red shading (ASR > crude): the younger-than-standard population structure in 2000 meant that crude rates underestimated the standardised risk. Blue-grey shading (crude > ASR): progressive population ageing reversed this relationship by approximately 2014, after which the crude rate overestimates the standardised risk. The crossover point (≈ 2014) marks the inflection at which the Andalusian age structure became older than the ESP2013 reference. This divergence is the visual expression of the demographic masking phenomenon: crude rates appear flat (–0.12%/year) while ASRs decline significantly (–0.98%/year).

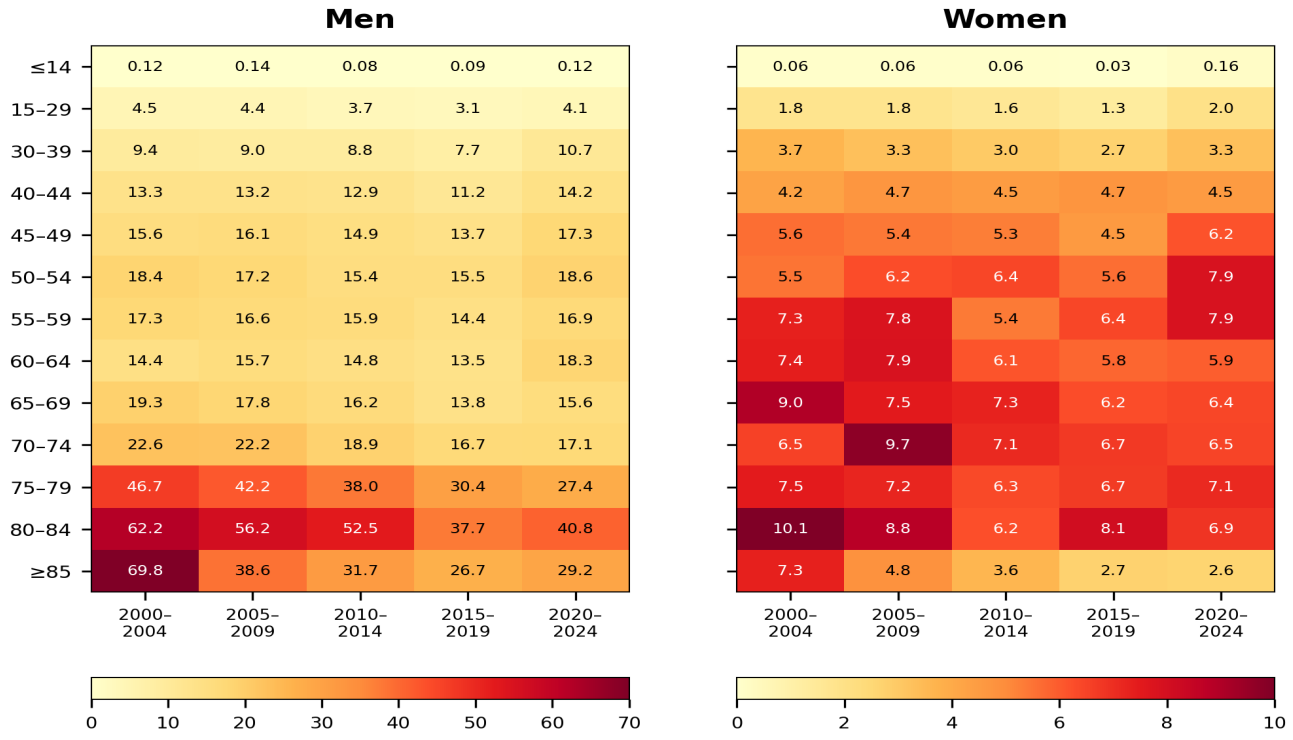

Figure S24. Age-specific suicide mortality rates (per 100,000) by quinquennium and sex, Andalusia, 2000–2024. Heatmaps display rates for men (left panel, scale 0–70) and women (right panel, scale 0–10). Rows: 13 age groups (≤14 to ≥85); columns: five quinquennia. Cell values are annotated. In men, the dominant feature is the steep age gradient, with rates increasing from 4–5 per 100,000 in the youngest groups to 62–70 per 100,000 in the 80–84 and ≥85 groups in 2000–2004, followed by a marked temporal decline in the oldest groups (e.g. ≥85: from 69.8 to 29.2). In women, the age gradient is much flatter, with rates ranging from 2–3 per 100,000 in the youngest groups to 7–10 in the 55–84 groups, and a less pronounced temporal decline. The pandemic quinquennium (2020–2024) shows increases relative to 2015–2019 in working-age groups for both sexes.

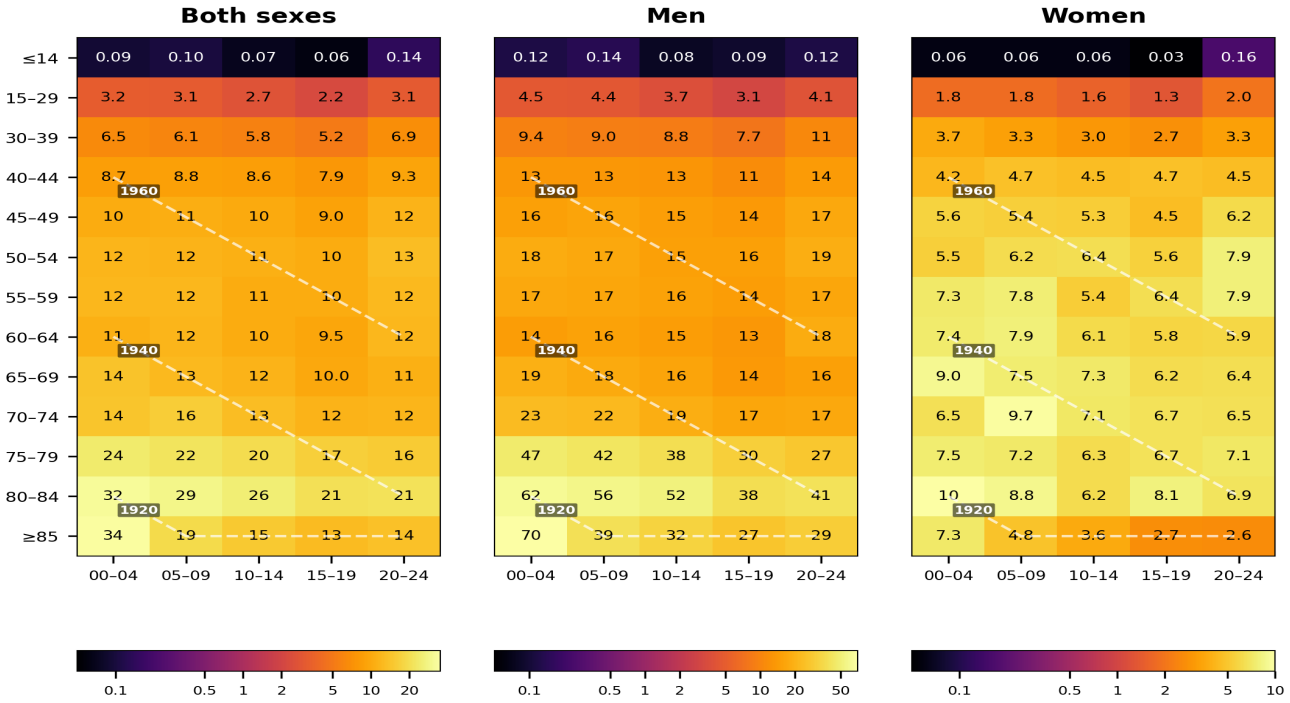

Figure S25. Lexis surface of suicide mortality rates by age group and quinquennium, Andalusia, 2000–2024. Three-panel heatmap (both sexes, men, women) displaying age-specific rates on a logarithmic colour scale (inferno palette), with cell values annotated. Faint diagonal lines indicate approximate birth cohort trajectories. In men, the pronounced vertical gradient (rates increasing sharply with age) and the temporal attenuation in the oldest groups (visible as lighter colours in 2015–2019) are consistent with the period nadir identified in the APC model. The cohort diagonals reveal that generations born circa 1920–1940 traverse the highest-intensity zones, concordant with the elevated cohort risk estimated for these birth cohorts. In women, the age gradient is less steep and the temporal variation more heterogeneous. This Lexis representation constitutes the descriptive precursor to the formal APC decomposition presented in the main text.