Parental loss from drugs and firearms

A cause-specific, two sex, and time-varying matrix kinship model

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Contents

Exploratory data analysis

Mortality

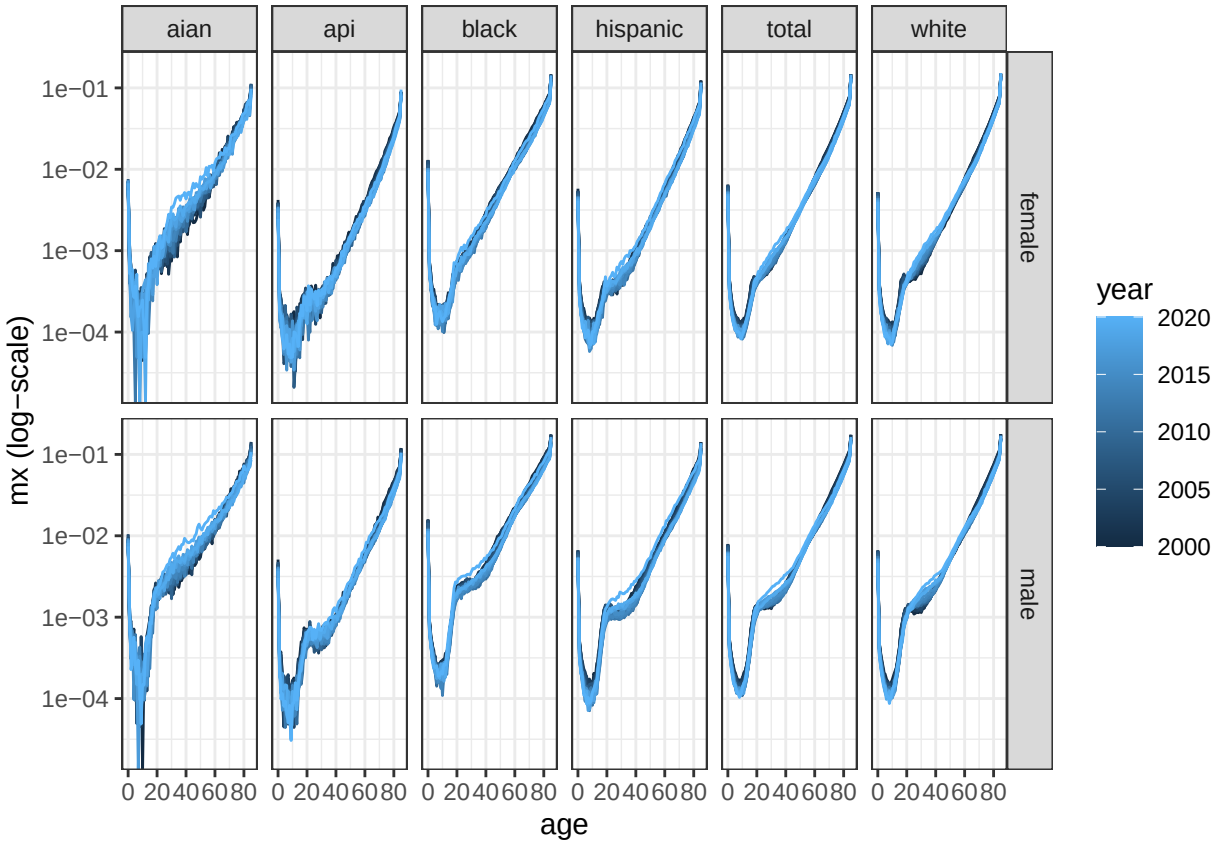

Figure 1: Mortality rates all causes

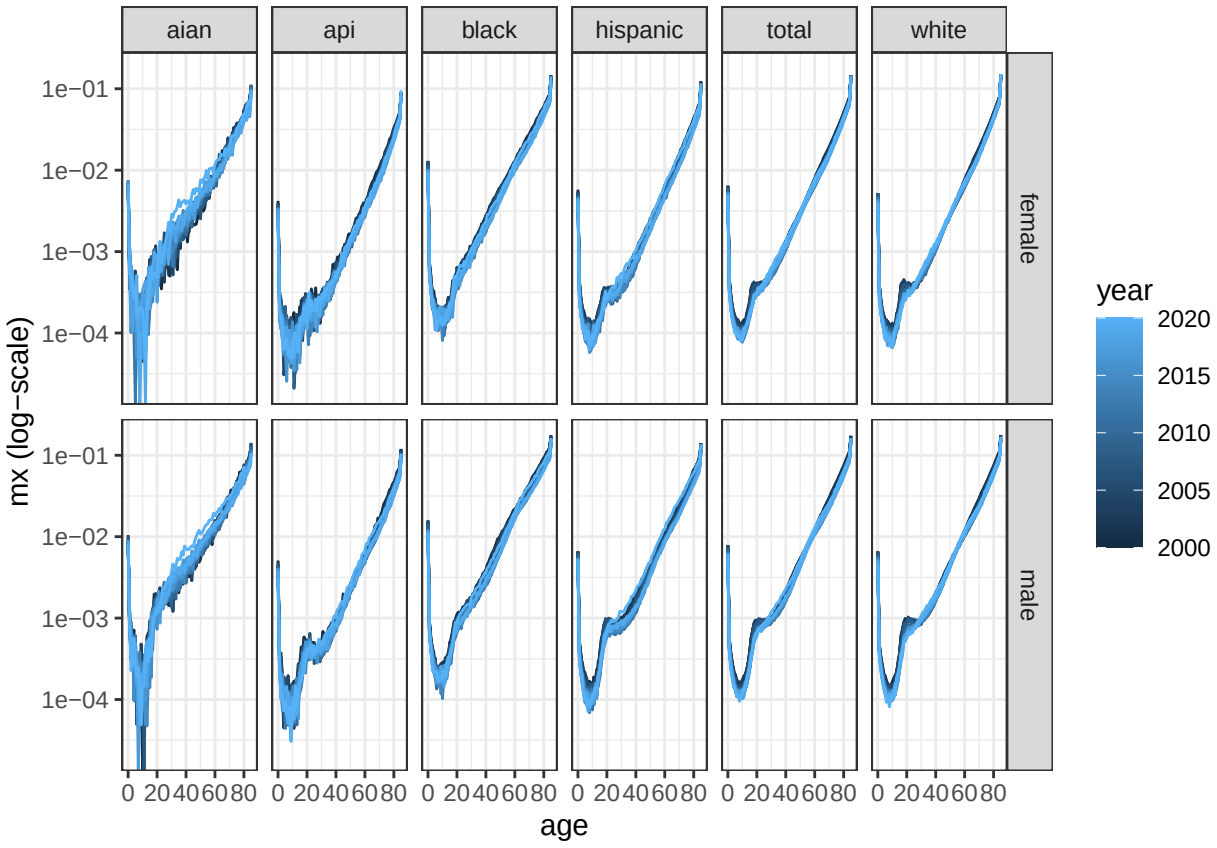

Figure 2: Mortality rates all causes except drugs and firearms

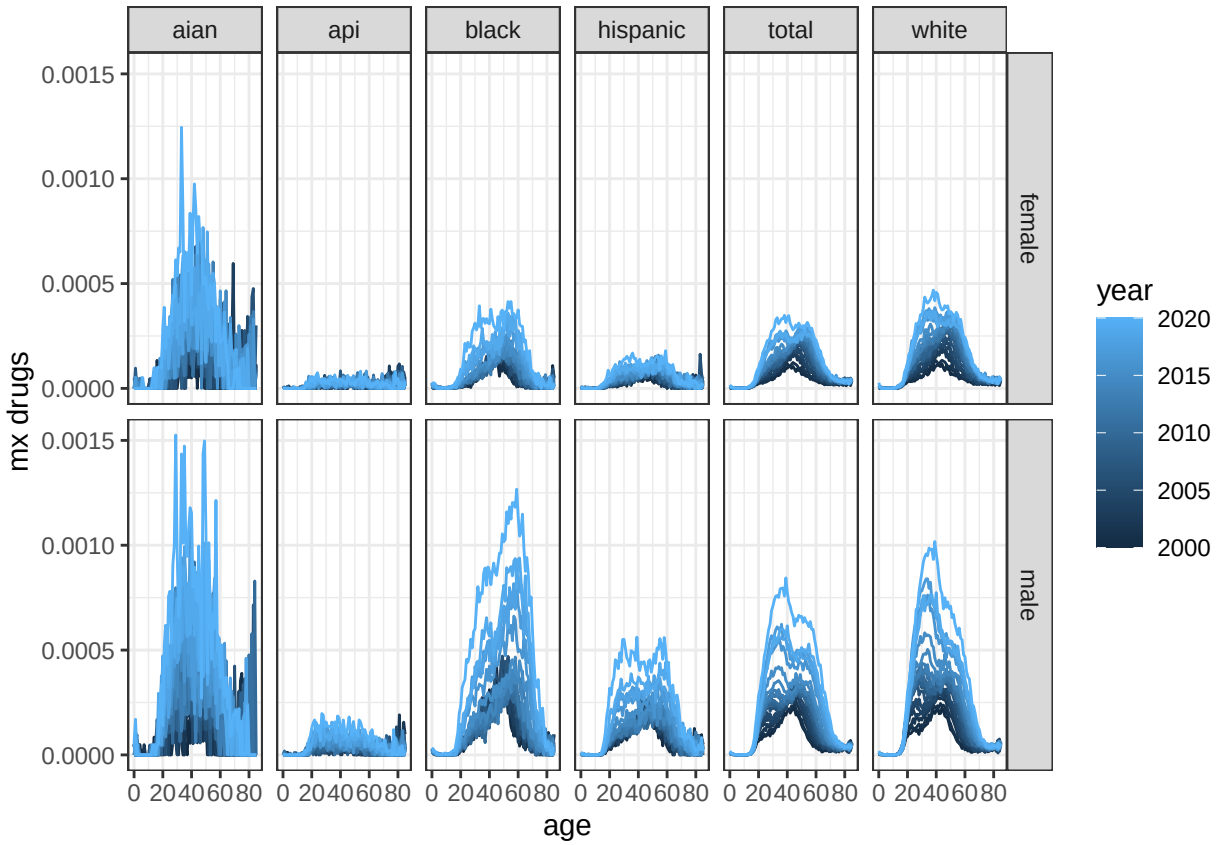

Figure 3: Mortality rates from drugs

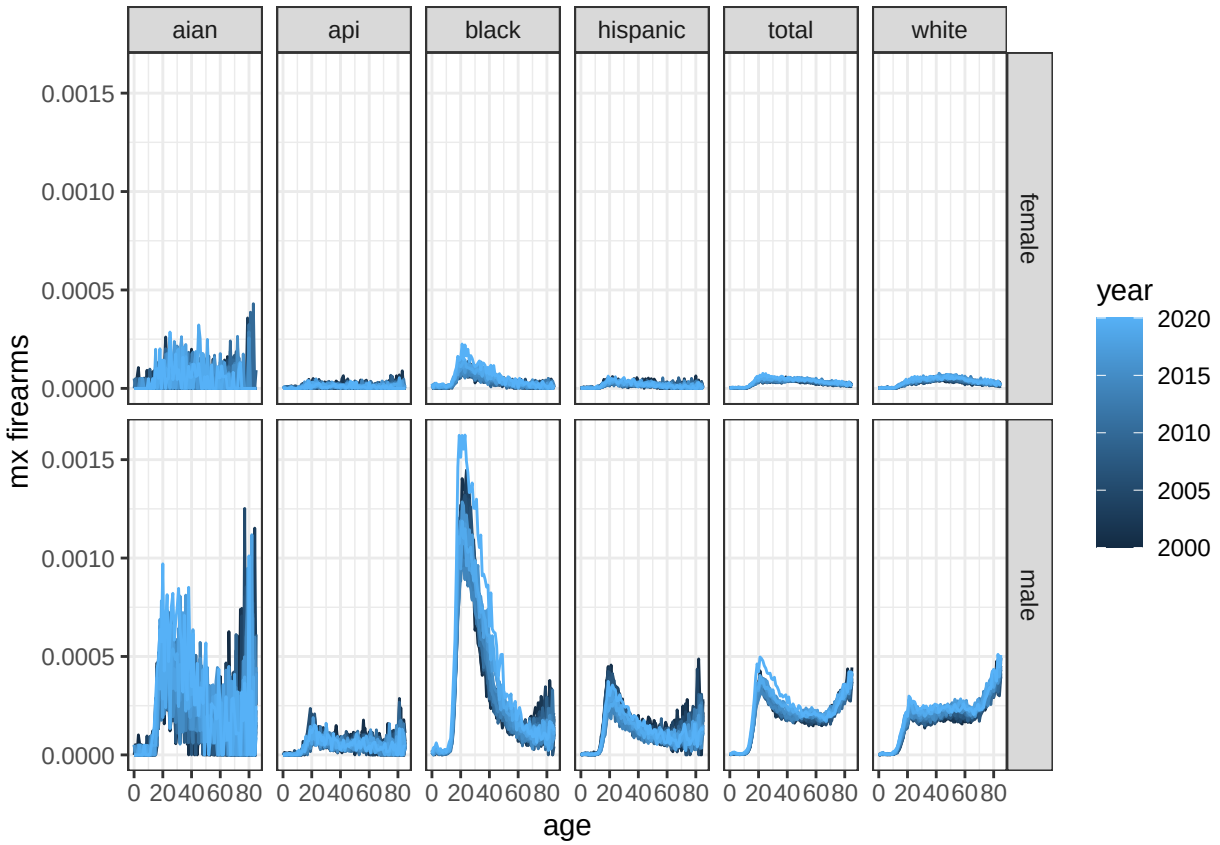

Figure 4: Mortality rates from firearms

- Stochasticity in m_x for Aian suggests to drop this ethnic group from the analysis.

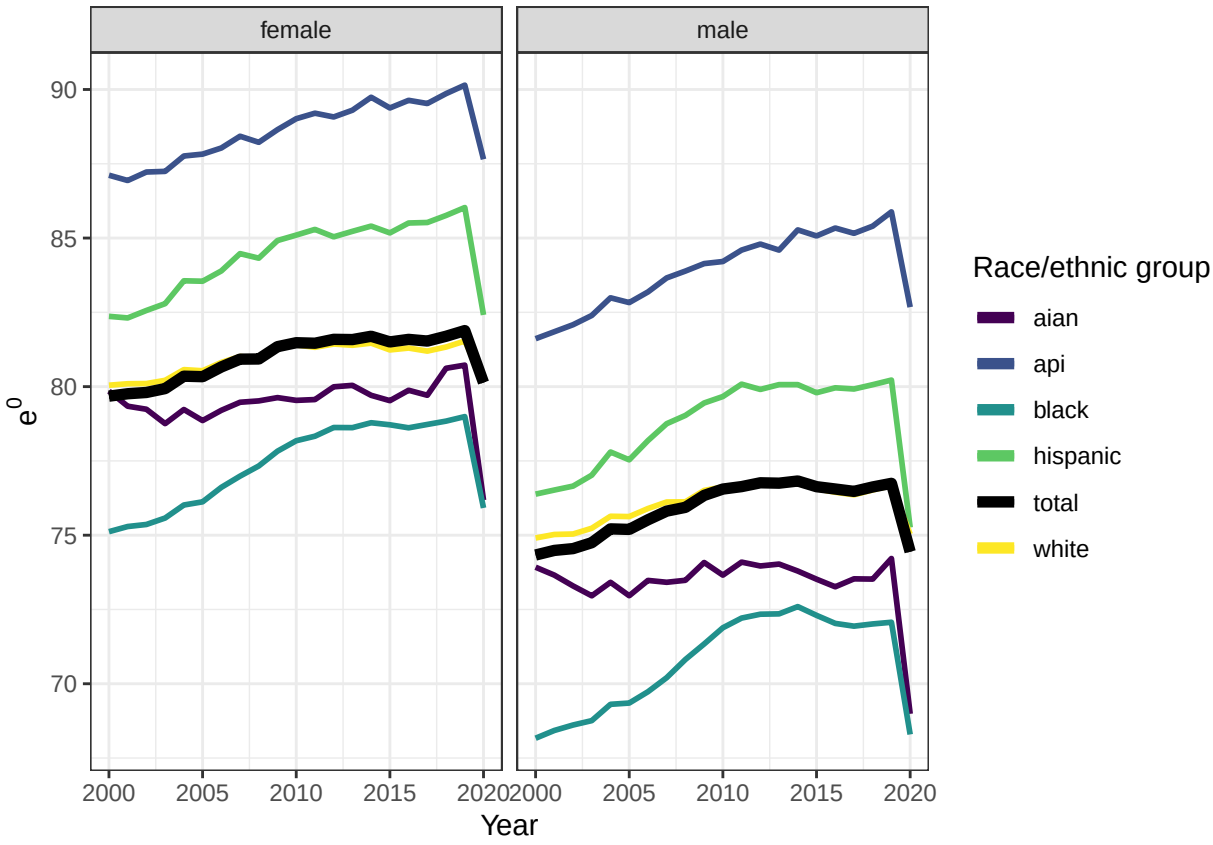

Figure 5: Life expectancy at birth

Fertility

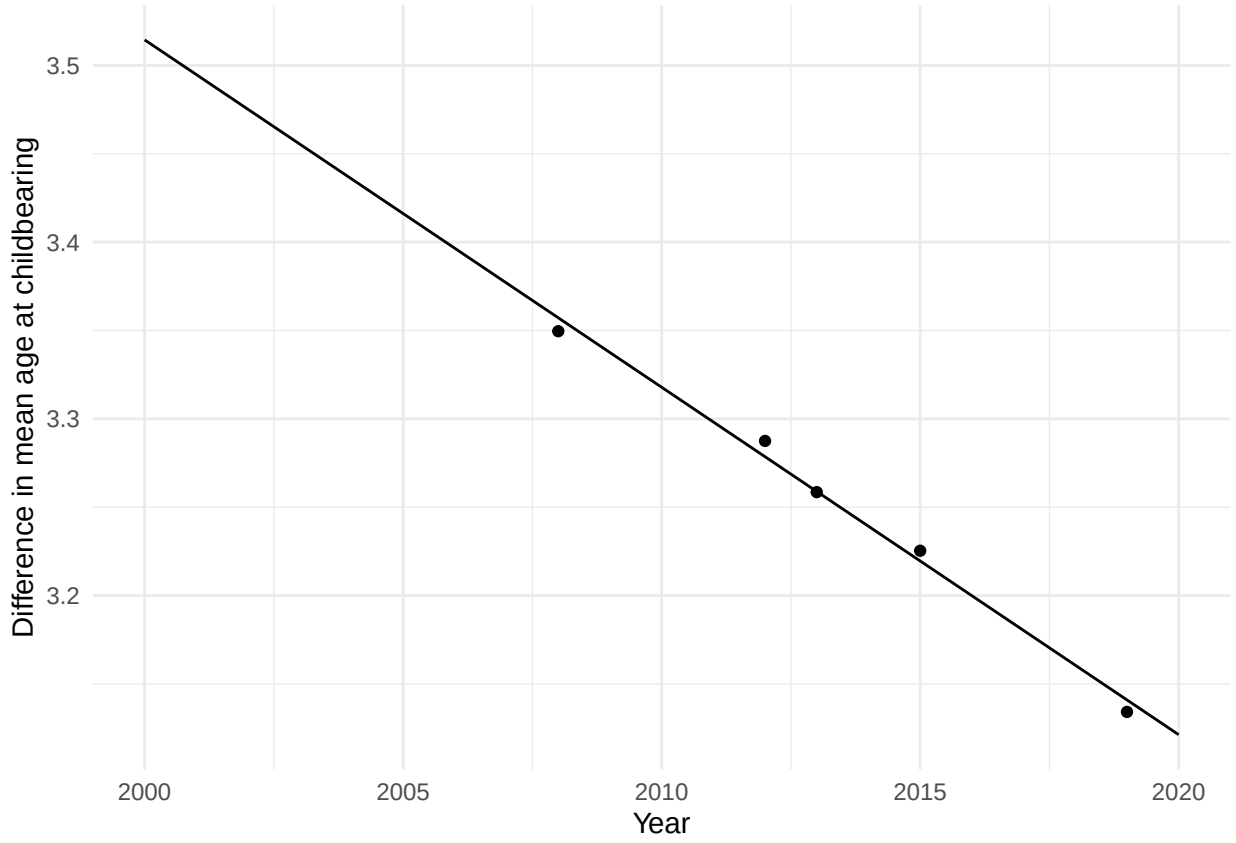

Figure 6: Modeled vs observed difference in mean age at childbearing

- Male f_x are obtained by shifting female f_x for each ethnic group. Currently, the shift equals the difference in mean age at childbearing (MAC) at the national level and is allowed to vary over the years. Only five years were available from the UN Demographic Yearbooks. The pattern was pretty linear so I got a shift for all years by fitting a linear model (plotted line) on the available years (plotted points). The decrease in the difference in MAC is in line with Schoumaker (2019).

Results

- Results focus on Black, White, and Hispanic.
  - High stochasticity in m_x by cause for Aian
  - No fertility rates in the year 2020 for Api and important stochasticity in m_x by cause

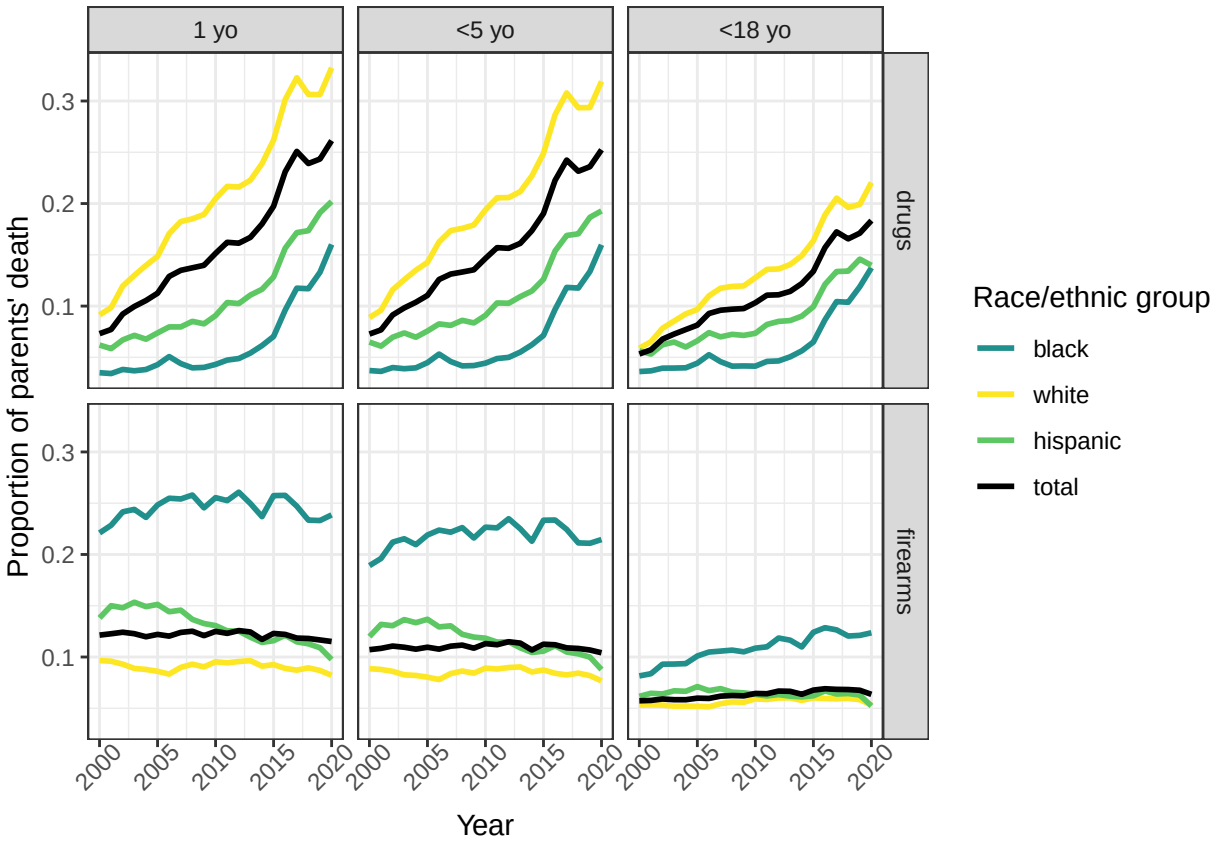

Figure 7: Proportion of parents' death

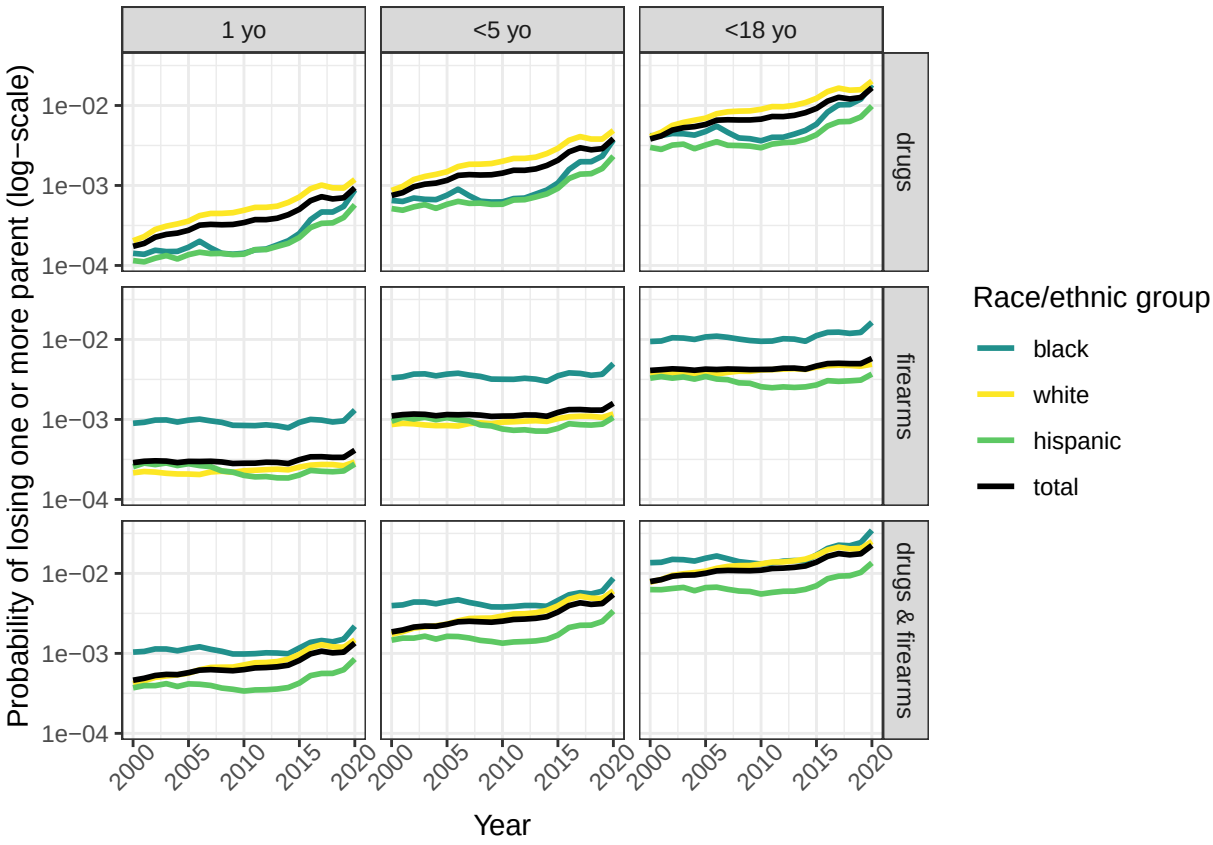

Figure 8: Probability of losing one or more parent (log-scale)

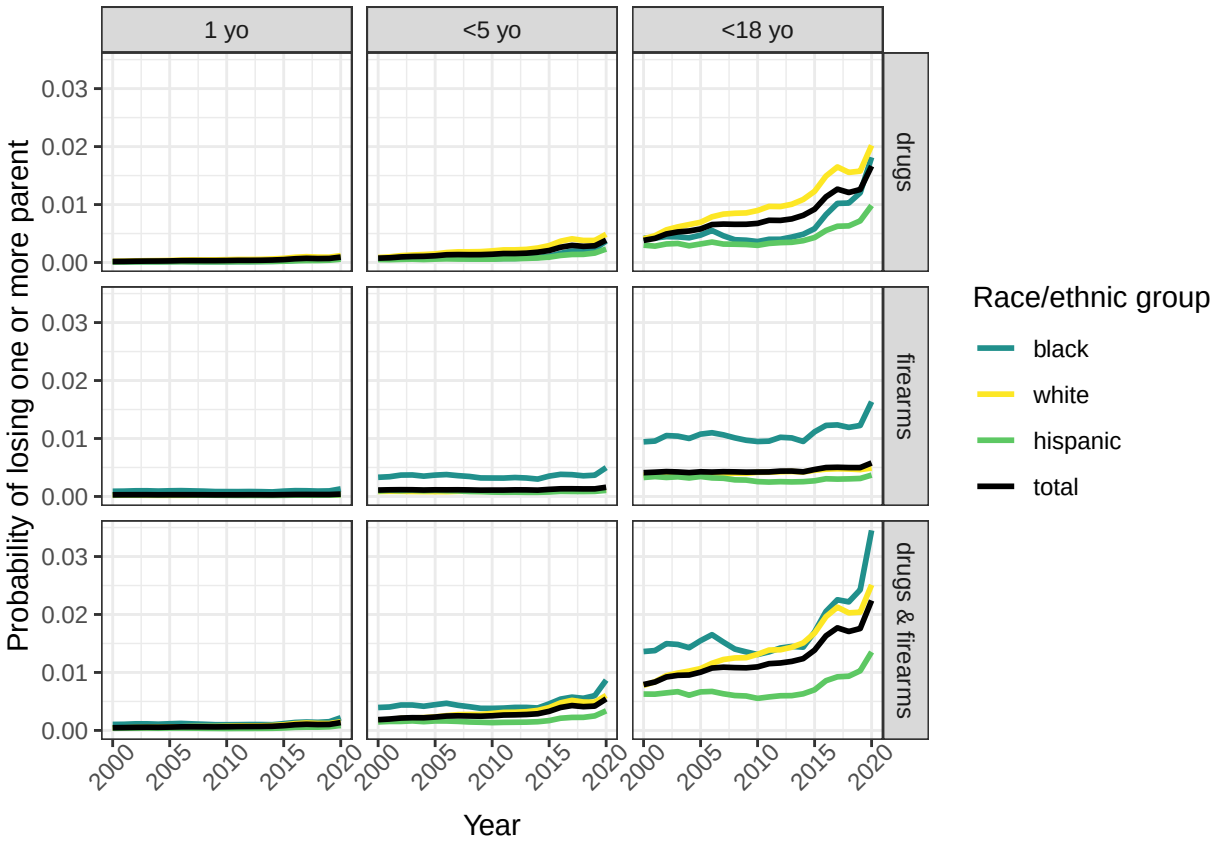

Figure 9: Probability of losing one or more parent

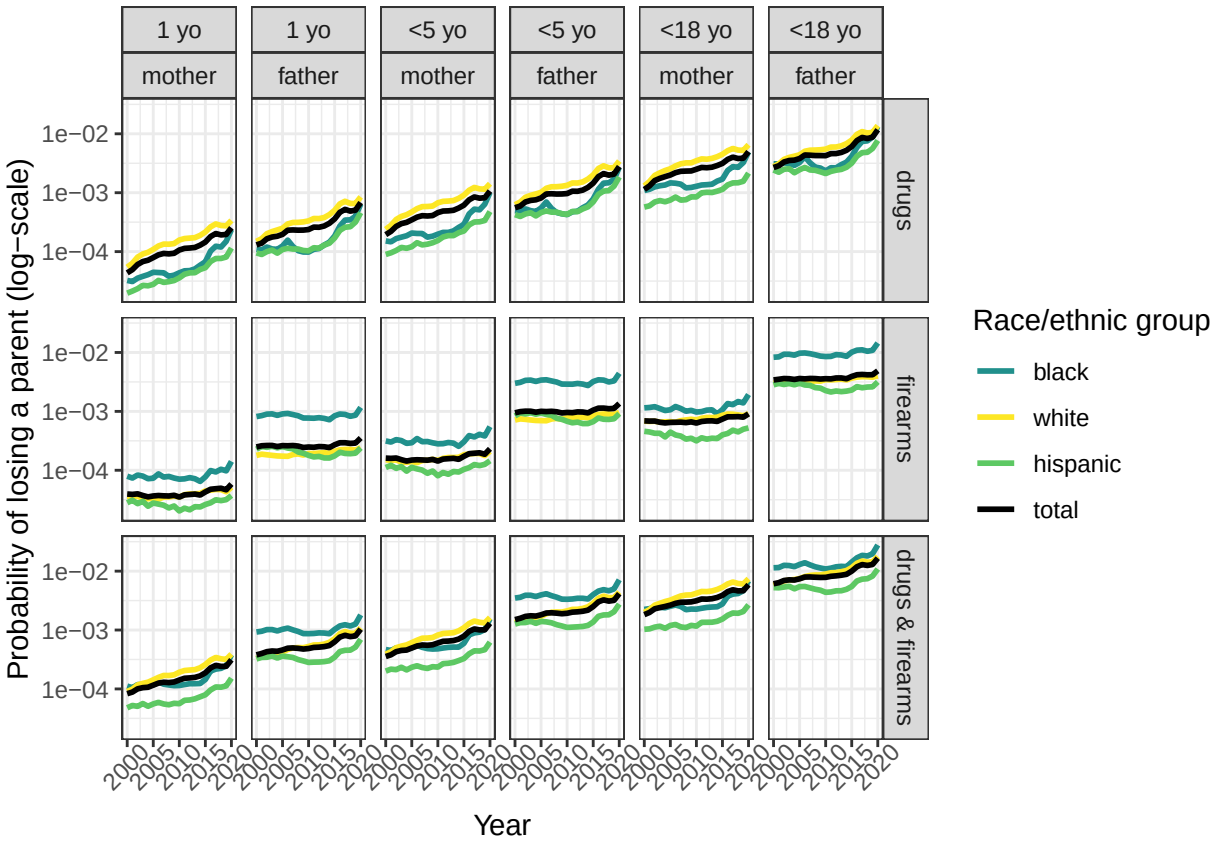

Figure 10: Probability of losing a parent (log-scale)

References

Schoumaker, Bruno. 2019. "Male Fertility Around the World and over Time: How Different Is It from Female Fertility?" *Population and Development Review* 45: 459–87. https://about.jstor.org/terms.