

Geographical and socioeconomic disparities in adolescent fertility rates: insights from Brazilian municipalities

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Adolescent fertility rates vary widely across the 5493 municipalities studied and across country regions. The highest rates are found in the North (Amazon area), where Indigenous women concentrate, and access to services is more difficult due to distance and geography. Municipal vulnerability can explain a large part of the observed differences



BACKGROUND

Adolescent fertility remains a critical issue across municipalities in Brazil, with significant implications for the socio-economic landscape. **Early pregnancy often interrupts educational trajectories**, as young mothers are compelled to prioritize childcare over schooling. This disruption curtails educational attainment and **narrows opportunities** for skill development essential for the modern workforce, ultimately constraining career prospects and earning potential. The cycle of early pregnancy thereby **perpetuates economic and gender inequality** and **limits empowerment** of young women, reinforcing the urgency of targeted interventions to support adolescent girls in their pursuit of education and professional advancement.

METHODS

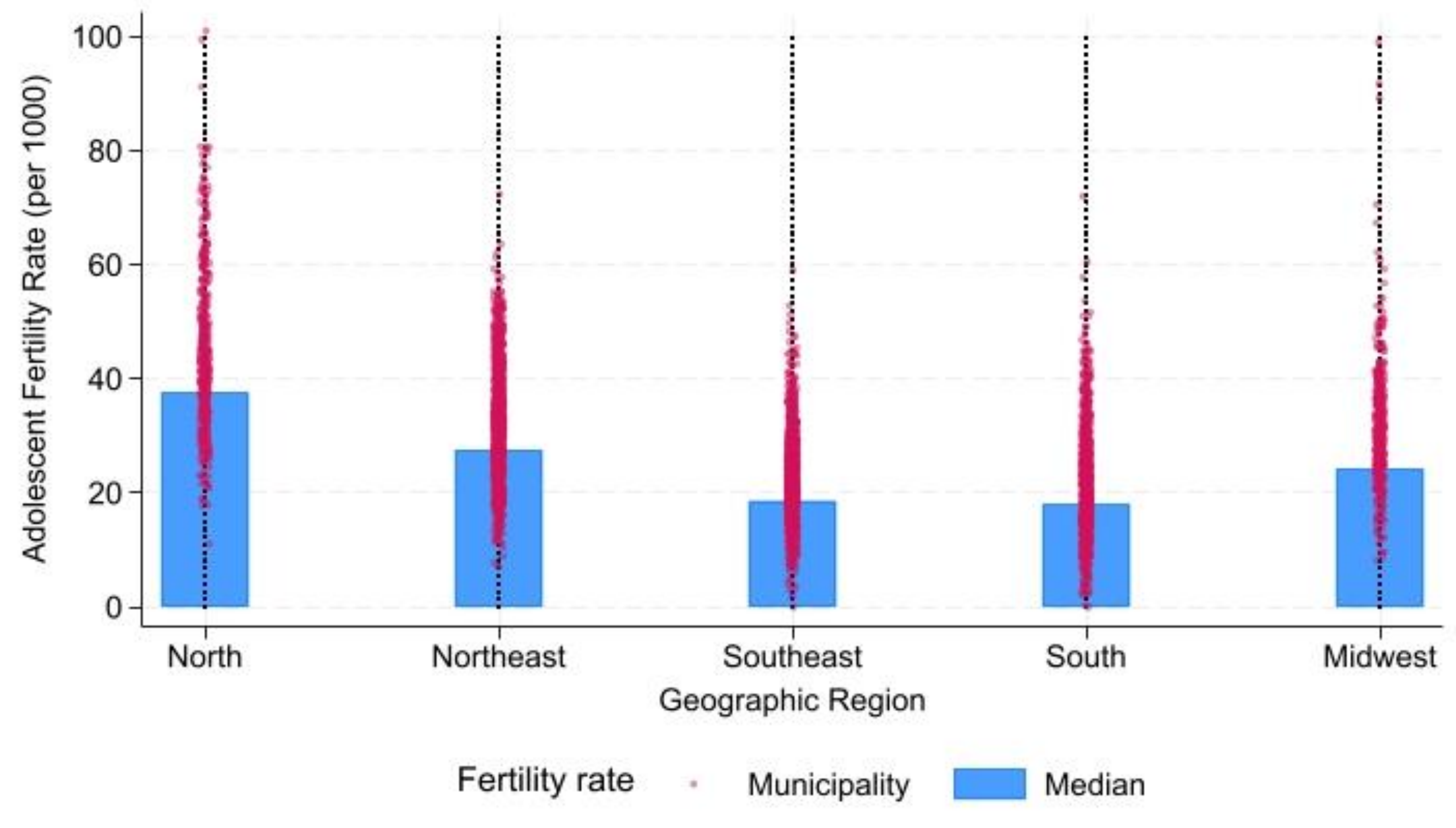
The Brazilian livebirth registration system (SINASC) covers 95% of all births. In conjunction with the latest 2022 National Census, it was used to estimate adolescent fertility rates for all the municipalities with more than 50 births to adolescents (10-19 years) in 2020-2022.

$$AFR = \frac{\text{births to adolescents (2020-2022)}}{\text{adolescent population (2022)} \times 3} \times 1000$$

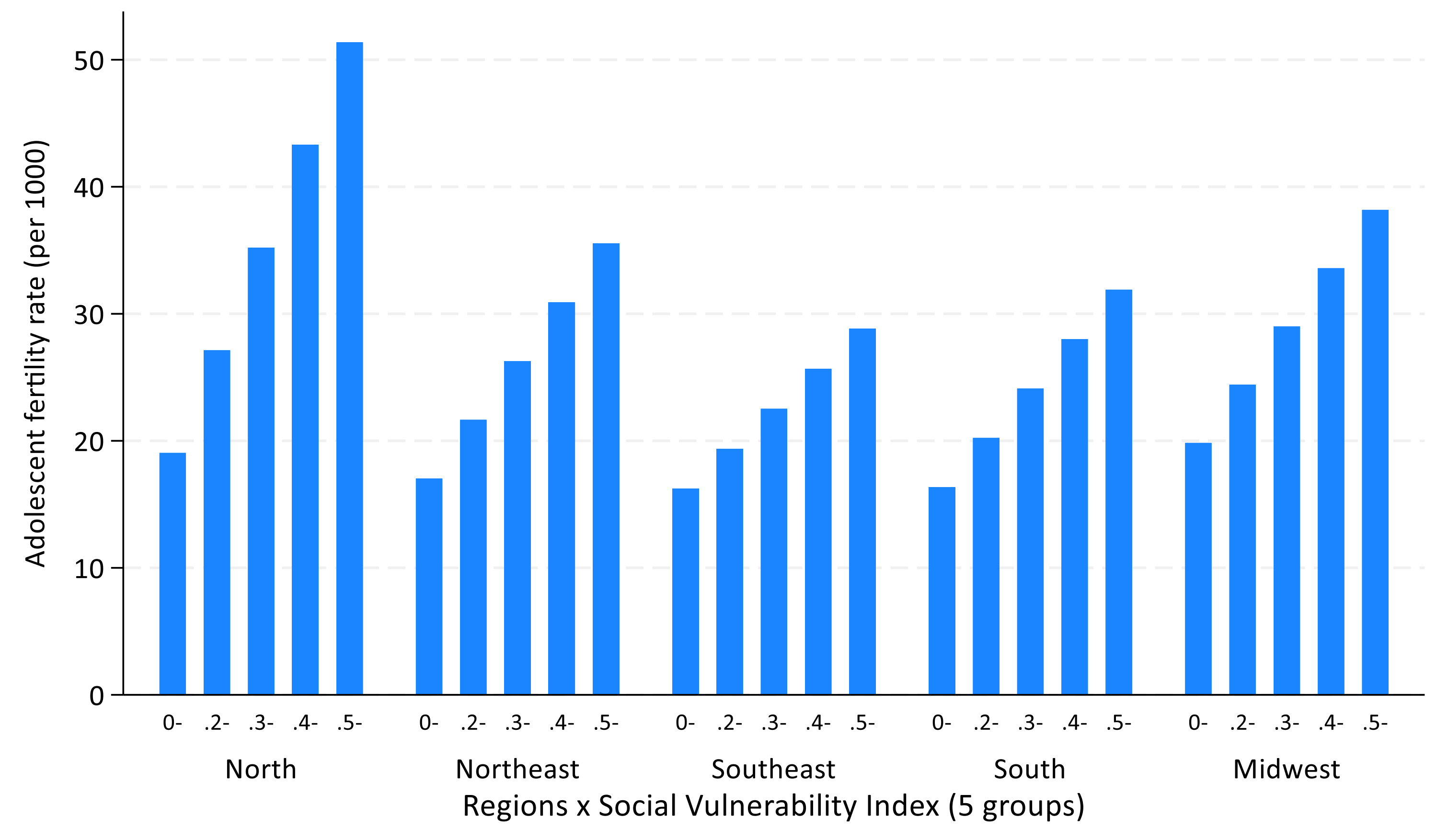
Rates are presented for municipalities and by geographic region. The Social Vulnerability Index (IVS), a multidimensional indicator, was used as a potential explanatory variable for AFR across municipalities. The IVS measures 3 dimensions of vulnerability – urban infrastructure, human capital and income and work on a scale from 0 (no) to 1 (maximum vulnerability).

RESULTS

AFR varied from zero to 101, with the largest median in the North region. The richest South and Southeast regions presented the lowest median rates. However, in each region, there was wide variability, and all regions had many high-fertility municipalities (above the lowest median of 18). The Social Vulnerability Index showing strong association with AFR at municipal level, explaining



RESULTS CONTINUED



59% of the municipal AFR variability. The association was stronger in the North region, where the highest rates in each vulnerability level were found, up to 51 in the most vulnerable group. In the other regions, despite their important differences in wealth, the association between the IVS and AFR was similar, with a linear increase. The AFR ratio between the most and least vulnerable municipalities was around 2 for the regions except the North, where the ratio was 2.7.

CONCLUSIONS

If we take the lowest regional median AFR of 18 births per 1000 adolescents-year as a reference, 4,533 municipalities present an AFR larger than that, or 81%. Social vulnerability explains much of the rates observed, implying the urgent need to improve living conditions in most Brazilian municipalities. The North region, which concentrates indigenous women, poverty, and remoteness needs the most urgent attention. While early pregnancy constrains the life perspectives of adolescent girls, the lack of such perspectives may drive young girls into pregnancy searching for having a partner, higher social status and independence, or securing financial support from the partner, family, or governmental benefits. Intersectoral policies aiming at economic growth, more employment, better education, easy access to culturally-aware health services, and youth-friendly family planning services are essential.

ADDITIONAL INFORMATION

Aluísio J D Barros, Director International Center for Equity in Health, www.equidade.org

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