Live Births Fell in Brazil after the Link between the Zika Virus and Microcephaly Was Widely Publicized

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INTRODUCTION

The Zika virus was first reported in Brazil in 2014. In late 2015, Brazil's Ministry of Health announced the association between the Zika virus and microcephaly, the most common manifestation of congenital Zika syndrome. Intense national and international media coverage followed the announcement. Brazilian government officials subsequently released statements recommending that women postpone pregnancy.

Fears about giving birth to child with congenital malformations caused by Zika may have led some women to delay childbearing or to terminate pregnancies despite highly restrictive abortion laws. This brief reports on a recently published study[1] that explored the potential impact of the Zika virus on live births and fertility patterns in Brazil between 2014 and 2016.

While fertility levels overall in Brazil are low (less than two children per woman), poor women, on average, have more children on average than wealthier women and low-educated women have more children than more-educated women. Higher-educated women, who tend to have better access to contraception and safe abortion, are also better at achieving the number of children they want, with far fewer of them having unintended pregnancies compared to low-educated women. These differences imply that, if the threat of microcephaly caused by the Zika virus had an impact on Brazilian women's reproductive experiences, then they might different across poor vs. wealthy and low-educated vs. more-educated women.

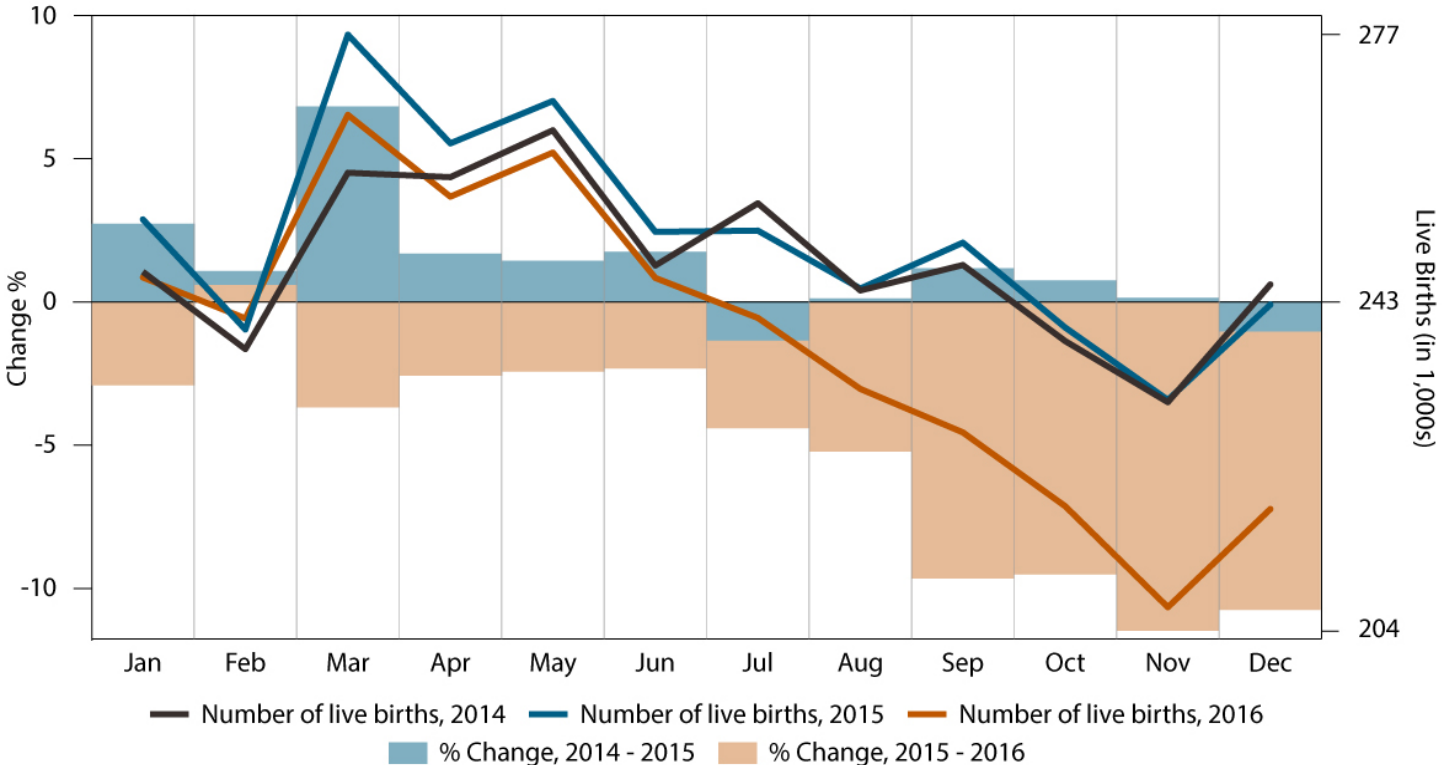
Moreover, the Zika epidemic hit people in northeastern Brazilian states earlier and more severely compared to states in the south of the country. This study compares two hard-hit states in the northeast – Pernambuco and Rio Grande do Norte – with two southern states that were less affected by the epidemic, Santa Catarina and Paraná.

To explore the potential impact of the Zika virus on births in Brazil, the authors use monthly data on live births combined with population projections and data from a nationally representative household survey for the number of reproductive-age women by level of education. Given that the average pregnancy lasts approximately nine months, any change in live birth rates owing specifically to pregnancy delays would have become observable no earlier than August 2016. Changes due to pregnancy termination and miscarriage could have taken place sooner.

KEY FINDINGS

- The number of live births fell in 2016, approximately 9 months after Brazil's Ministry of Health widely publicized the link between the Zika virus and microcephaly. *See Figure, next page*.
- These declines were observed across all educational groups and all but the oldest age groups.
  - Declines in another measure (age-specific birth rates) were larger among women with high educational levels than for any other group. This is perhaps because high-educated women acted quickly on their better access to contraceptives and safe abortion, compared to lower-educated women who had less access to these means of preventing births.
- Declines were observed in the two northeastern states that were hard-hit by the Zika epidemic, as well as in the two southern states that experienced lower rates of the Zika epidemic; the declines were larger and emerged sooner in the northeastern states compared to the southern states.

The number of live births fell in Brazil after the onset of the Zika epidemic



This figure[1] shows that live births fell in Brazil in 2016 (dark orange line), starting approximately nine months after the link between the Zika virus and microcephaly was widely publicized in the media and via public pronouncements asking women to delay childbearing. The 2015–2016 annual percentage change for each month (light orange bars) shows a clear decline in live births in 2016 compared to 2015. The 2016 decline started in July 2016 and accelerated in September 2016.

POLICY IMPLICATIONS

According to the World Health Organization, any country with a history of Zika virus transmission "has the potential for re-emergence or re-introduction." Indeed, there are indications that the Zika virus continues to put Brazilian women and children at risk of poor health outcomes, as does other arboviruses such as dengue.

These findings can be extended to the current coronavirus pandemic. While the coronavirus pandemic is different from the Zika epidemic in terms of scope and transmission, there are key similarities. Both are viruses that have resulted in new illnesses, placing those with less access to health information and prevention in disadvantageous positions. These disadvantages threaten to deepen reproductive health inequalities in a country that is already highly unequal. In addition, coronavirus infections may have deleterious consequences for a pregnant woman's health, such as increasing the chances of developing more severe reactions. Coronavirus may also compromise the quality of prenatal and obstetric care, resulting in higher maternal mortality and other negative health outcomes for the woman.

Importantly, early on in the Zika crisis there was a lot of uncertainty about whether the Zika virus was transmitted from a pregnant woman to her fetus, and whether the Zika virus was harmful to babies. When the consequences of the Zika virus to fetuses and babies became apparent, reproductive health behaviors changed. Therefore, during public health crises such as a Zika epidemic and the novel coronavirus pandemic, it is imperative that government entities and the media disseminate key health information supported by scientific evidence. Moreover, the government must provide improved access to health information and services to disdvantaged women during these public health crises.

REFERENCE

[1]Marteleto, L.M., Guedes, G., Coutinho, R.Z. & Weitzman, A. (2020). Live births and fertility amid the Zika epidemic in Brazil. *Demography*. Published online ahead of print. https://doi.org/10.1007/s13524-020-00871-x.

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