The Effects of Brazilian Cash Transfers on Maternal Mortality using the 100 Million Brazilian Cohort: A population-based linkage study

P3-P3

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> The Bolsa Família Programme (BFP) was associated with an 18% reduction in maternal mortality, with greater effects over time, suggesting a long-term effect of CCTs. The most vulnerable groups experienced the greatest impact, highlighting its role in reducing inequities.

BACKGROUND

Conditional cash transfers (CCTs) have been consistently associated with improvements to the determinants of maternal health[1,2,3],but there have been insufficient investigations regarding their effects on maternal mortality.

OBJECTIVE

To evaluate the association between being a Bolsa Família program (BFP) beneficiary and maternal mortality and to examine how this association differs by duration of BFP receipt,maternal race, living in rural or urban areas, the Municipal Human Development Index (MHDI), and municipal primary health care coverage.

METHODS

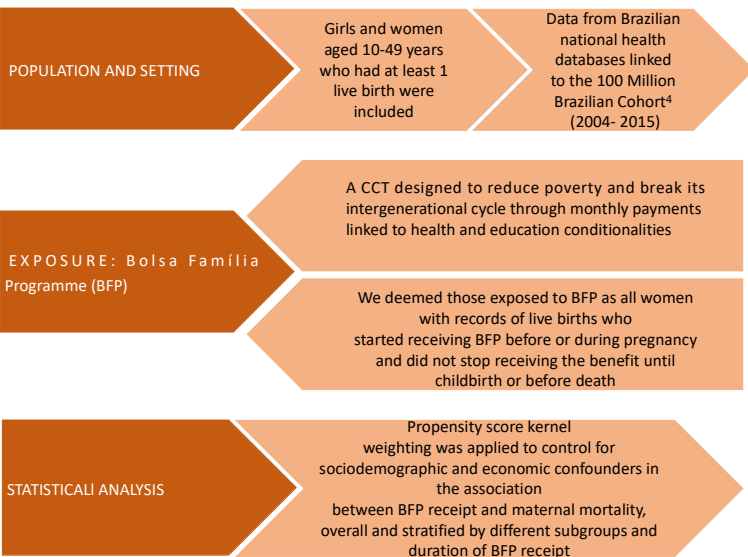Cross-sectional analysis nested within the 100 Million Brazilian Cohort

POPULATION AND SETTING

Girls and women aged 10-49 years who had at least 1 live birth were included

Data from Brazilian national health databases linked to the 100 Million Brazilian Cohort[4] (2004- 2015)

EXPOSURE: Bolsa Família Programme (BFP)

A CCT designed to reduce poverty and break its intergenerational cycle through monthly payments linked to health and education conditionalities

We deemed those exposed to BFP as all women with records of live births who started receiving BFP before or during pregnancy and did not stop receiving the benefit until childbirth or before death

STATISTICAl ANALYSIS

Propensity score kernel weighting was applied to control for sociodemographic and economic confounders in the association between BFP receipt and maternal mortality, overall and stratified by different subgroups and duration of BFP receipt

Figure 1:Mechanisms linking the Bolsa Familia Programme to reduction of maternal mortality
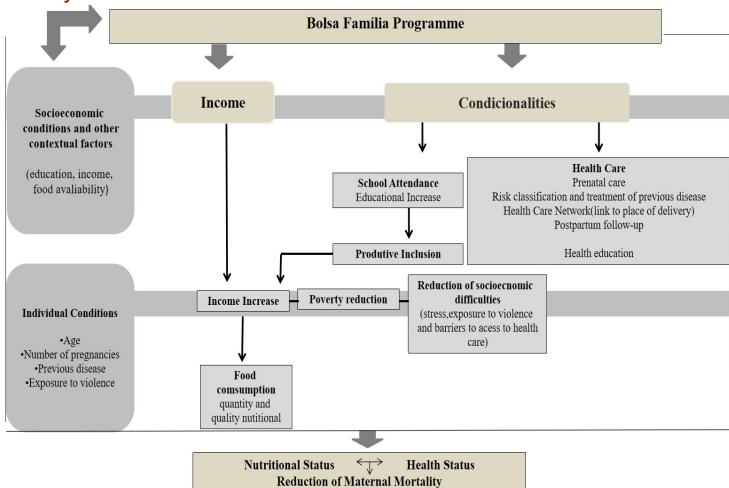
RESULTS

A total of 6 677 273 women aged 10 to 49 years were included in the analysis, 4056 of whom had died from pregnancy-related causes. The risk of maternal death was 18% lower in women who received BFP (weighted odds ratio [OR], 0.82 [95% CI, 0.71-0.93]). A longer duration receiving BFP was associated with an increased reduction in maternal mortality (OR for 1-4 years, 0.85 [95% CI, 0.75-0.97]; OR for 5-8 years, 0.70 [95% CI, 0.60-0.82]; OR for 9 years, 0.69 [95% CI,0.53-0.88]). The reduction was more pronounced in the most vulnerable groups, such as Black women and municipalities with the lowest MHDI.
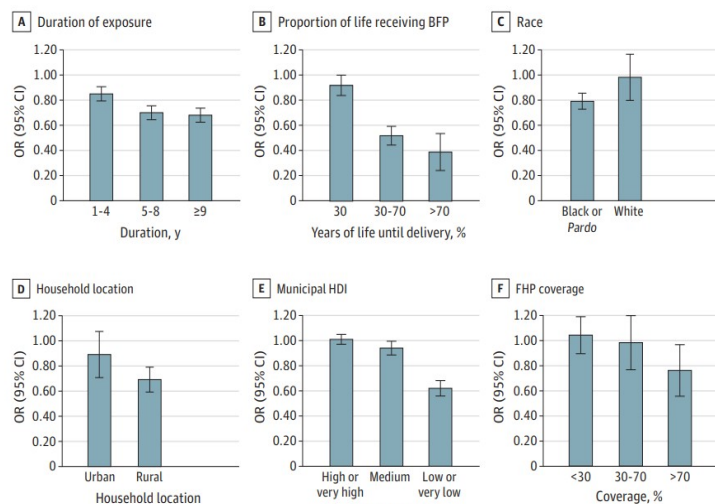
RESULTS CONTINUED

Table 1: Kernel weighted regression for association between BFP receipt and maternal death. 100 Million Brazilian Cohort, 2004-2015.

	Kernel Weighting			
	Weighted Rates		**OR(95%IC)**	
	Non-BFP[a]	**BFP[a]**	**OR**	**Adjusted OR[b]**
Rates/ OR	71.59 (62.87-81.53)	60.63 (58.46-62.89)	0.84 (0.73-0.96)	0.82 (0.71-0.93)
n	1,017,154	4,731,624	5,748,917	5,542,230

[a]Non-BFP and BFP correspond to Kernel weighted maternal rates/100,000 parturients of SINASC to non-beneficiaries and beneficiaries, respectively

[b]Adjusted by prenatal care, gestational age, type of delivery, and multiple pregnancy

Figure 2: BFP receipt, sociodemographic vulnerability markers and duration of BFP receipt. Kernel weighted logistic regression for associations between BFP receipt and maternal death by time of exposure (1-4, 5-8, and >=9 years of BFP receipt); BFP participation by years of life until delivery - years of receipt divided by years of life until delivery (30%, 30-70%, and >70%). Stratified analysis by sociodemographic vulnerability markers: race, location of household, and MHDI. All the analytical steps (PS estimation, kernel matching and weighted logistic regressions) were conducted separately for each category of this subgroup

CONCLUSIONS

The results of our cohort study show that a CCT program can substantially reduce maternal mortality in a large middle-income country such as Brazil. We have provided new evidence that continual exposure to BFP is associated with a reduction in maternal mortality, suggesting a long-term effect of CCTs.

ADDITIONAL KEY INFORMATION

References:
1. Glassman A, Duran D, Fleisher L, et al. Impact of conditional cash transfers on maternal and newborn health. J Health Popul Nutr. 2013;31(4)(suppl 2):48-66.
2. Kusuma D, Cohen J, McConnell M, Berman P. Can cash transfers improve determinants of maternal mortality? Evidence from the household and community programs in Indonesia. Soc Sci Med. 2016;163:10-20. doi:10.1016/j.socscimed.2016.06.020
3. Lim SS, Dandona L, Hoisington JA, James SL, Hogan MC, Gakidou E. India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. Lancet. 2010;375(9730):2009-2023. doi:10.1016/S0140-6736(10)60744-1
4. Barreto ML et al. Cohort Profile: The 100 Million Brazilian Cohort. Int J Epidemiol. 2022; 51(2): e27-e38.