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Gaps in Health and Wealth: The relationship between trends in income inequality and breastfeeding inequalities

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Objectives

The objective of this study was to identify whether breastfeeding inequalities have increased between 1984 and 2014 and to examine whether trends in income inequality are related to breastfeeding inequalities.

Methods

We used linkable administrative data from the Population Health Research Data Repository. Our sample included all infants born in Manitoba, 1984 to 2014. We used area-level income - derived from the Canadian Census - to stratify infants into income quintiles. Canadian Census income data were also used to quantify provincial level income inequality for each fiscal year in our study period. Data from the hospital discharge abstract database were used to classify infants according to whether or not they had initiated breastfeeding. We linked infant data to maternal data using the Manitoba health insurance registry to capture maternal characteristics - including the mother's postal code of residence and her age at first birth. We used generalized linear models to calculate income quintile-specific breastfeeding rates for each fiscal year in our observation period for all of Manitoba. We also calculated age-adjusted breastfeeding rates to account for the changing age distribution in Manitoba mothers, over time. We measured breastfeeding inequities using the concentration index as well as the rate ratio and rate difference (comparing the breastfeeding rate between the highest and lowest income quintiles). We quantified income inequality using the Gini coefficient on income. Trend analyses and two-sided Z-tests tested for changes, over time. Time by income-quintile interactions tested whether breastfeeding rates were statistically significantly different, across socioeconomic groups.

Results

Breastfeeding rates increased from 1985 to 2014, from 72% to 81% ($p < 0.01$). The Gini coefficient increased from 0.16 to 0.21; a linear trend test of the Gini coefficient showed income inequality increased over the study period ($p < 0.05$). Rate differences, rate ratios, and the Concentration index showed that significant breastfeeding inequalities existed throughout the study period. Trend tests revealed that breastfeeding inequalities did not increase, over time.

Conclusion

Aggregate analyses may suggest overall improvement when inequality persists. Although there was improvement in breastfeeding initiation rates, children from lower socioeconomic status continue to lag behind their counterparts. Policy-focused health equity research needs to measure outcomes, overall, and inequity across time.

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