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Evaluating area-based socioeconomic status predictors of pediatric health outcomes in Manitoba

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Introduction

Socioeconomic gradients in health exist in Canada. Although multiple Canadian area-based socioeconomic measures (ABSM) have been developed, none have been specifically validated against relevant pediatric outcomes. Our objective was to use key pediatric health outcomes and compare the strength of association with a number of ABSM, including income quintile.

Objectives and Approach

This is a retrospective cross-sectional assessment of the association between socioeconomic status (SES) measured by ABSM and key pediatric health outcomes at the population level. Data from the Manitoba Population Research Data Repository was used for residents aged 0-19y. The time-frame was 2010-2015. Outcomes included preterm births, birth weight, mortality, vaccination rates and teen pregnancy. Regressions used each outcome against various ABSM (e.g. CAN-Marg, SEFI2, INSPQ) or income quintile. Best model for each outcome was assessed by goodness of fit measure (AIC). Measures of inequality included SII (Slope Index of Inequality) and RII (Relative Index of Inequality, both RII_{mean} and RII_{ratio}).

Results

In our regression models, the 4 Can-Marg subcomponents consistently had about 15% lower AICs (best fit) across all 16 key pediatric outcomes compared to INSPQ (Raymond-Pampalon), income quintile or SEFI2 (Socioeconomic Factor Index - Version 2). Sex differences were small and inconsequential. Whether ABSMs were treated as continuous or categorical predictors was of little statistical consequence. Of note, 15 of the 16 outcomes had socioeconomic gradients identified by SII or RII on at least one of the ABSMs. Income quintile detected 12 of 15, CAN-Marg material deprivation detected 9; the combination of CAN-Marg material deprivation and ethnicity detected 13 of 15. SEFI2 detected only 3 and the National INSPQ detected 6.

Conclusion/Implications

There are significant health inequalities in pediatric outcomes in Manitoba (15 of 16 studied). Combining CAN-Marg measures of poverty (material deprivation) and ethnic concentration identified 13/15 cases of documented inequality and was the best ABSM for capturing pediatric health gradients; it was similar to income quintile alone.