INRICH: 3rd Annual Workshop – List of poster titles & abstracts

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Instituto de Medicina Integral Professor Fernando Figueira (IMIP), Recife, Brazil

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Philippa Bird	The University of York	Inequality and social gradients in childhood health and well being	pkb503@york.ac.uk
Esther Hafkamp	Univ. Medical Center, Rotterdam	A household income gradient in preschool children with asthma symptoms: The Generation R study	e.hafkamp@erasmusmc.nl
Marie Hasselberg	Karolinska Institutet	The mechanisms of social inequality in safety – examples from the traffic safety arena	marie.hasselberg@ki.se
Béatrice Nikiema	Université de Montréal	Trajectories of poverty and health among eight years old children in the Quebec birth cohort	b.nikiema@umontreal.ca
Louise Séguin	Université de Montréal	Poverty during the early years: What have we learned from the Quebec birth cohort?	louise.seguin@umontreal.ca
Mai Thanh Tu	Université de Montréal	Profile of cortisol, a stress biomarker, in mothers and their child during back to school period	mai.thanh.tu@umontreal.ca

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Inequality and social gradients in childhood health and wellbeing

Authors: Bird, PK; Pickett, KE
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Abstract

Background: Comparisons of health at the same socioeconomic position in more and less equal societies suggest that the benefits of greater equality are very widespread. Studies suggest that health is better in more equal societies and that even the most well-educated and better-off do better. Although the evidence is suggestive, it is not conclusive and there are counter examples.
This poster presents a proposed PhD research project to strengthen the evidence base on whether the impact of inequality applies to all social strata and whether levels of income inequality affect health and wellbeing across the lifecourse, through a direct impact in childhood.

Aim: To examine the independent and interactive effects of relative socioeconomic position and income inequality on childhood indicators of wellbeing, which are predictors of later health and wellbeing.

Proposed methods: The research will involve international comparisons of at least three important childhood predictors of later health, longevity and social mobility: preliminary plans are to examine height, IQ and mental health. Data from comparable international surveys and cohort studies of childhood health in developed countries will be used. In addition, register data from the Scandinavian countries may also be used. Analyses will include both between-country ecological analyses of the impact of child poverty and income inequality on the prevalence of poor growth in height, IQ scores and clinically-significant anxiety disorder, as well as within and between-country comparisons of these outcomes by family socioeconomic status.

A household income gradient in preschool children with asthma symptoms: The Generation R study

Authors: E. Hafkamp-de Groen, H. Raat and the Generation R group
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Abstract

Objective: In-depth reports on household income inequalities in asthma symptoms in preschool children are scarce and results are conflicting. We assessed whether household income is associated with childhood asthma symptoms, and if so, to what extent known risk factors for asthma symptoms mediate the effect of household income
Study Design: This was studied in 3136 Dutch children and their mothers participating in The Generation R Study, a population-based cohort study. Odds ratios (ORs) of asthma symptoms (wheezing, breathlessness and persistent phlegm) for low and middle income level compared to high income level were calculated after adjustment of potential confounders and additionally adjusted for potential mediators at the first, second and third year of life.

Results: At the first 2 years of life no significant household income gradient in asthma symptoms was found after adjustment of potential confounders. At the third year of life children from low income families had a higher risk on wheezing, breathlessness and persistent phlegm compared to children from high income famillies (aOR=1.75, 95% CI: 1.26-2.44; aOR=1.81 95% CI: 1.29-2.54; aOR=2.12 95% CI: 1.12-4.00 respectively). Indicators of prenatal stress explained, at most (up to 40%), only some of these variation in asthma symptoms.

Conclusions: A household income gradient in asthma symptoms is already present at the third year of life. The elevated risk in children from low income families is explained multifactorial, largely by a higher rate of prenatal stress. Results of this study imply that income inequalities in developing childhood asthma have their origin early in life and come to expression at the third year of life.

The mechanisms of social inequality in safety – examples from the traffic safety arena

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Abstract

Background: Apart from being the primary cause of death during childhood and adolescence, scientific evidence points in the direction that road traffic injuries make a major contribution to social inequalities in health during this period of life.

A number of studies provide evidence that, at younger ages, there are noticeable differences in the socioeconomic distribution of RTIs, as measured in terms of either mortality or morbidity.

Method: Four mechanisms have been proposed as being of key importance in generating inequality in health – social stratification, differential exposure, differential vulnerability, and differential consequences. These mechanisms can help in explaining the occurrence of social differences in injury risks, using traffic-related injuries as an example.

Results: Regardless of which measure of socioeconomic position is adopted, the scientific evidence in Sweden shows that lower socioeconomic position is associated with a greater risk on the part of children and young people being injured in traffic. Morbidity differences between groups are observed in all categories of road users, but most prominently among motorized-vehicle drivers.

By contrast with countries like the UK, Canada and Australia, where the steepest socioeconomic gradient is found for pedestrian injuries, Sweden shows only small socioeconomic differences with regard to injuries of this kind. Further, in relation to other high-income countries, the incidence of injuries as pedestrians is low among children. One explanation for this may be that in Sweden there is a strong tradition of maintaining separation between children and motor vehicles. As early as in the 1960s, Swedish research showed that children's locomotive and mental capacities were not sufficiently developed to be able to handle the traffic environment. This finding had an impact on traffic safety work, in that greater attention was paid to the environment than to children's behaviours – not only by changing the traffic environment, but also by creating more attractive places for children to be in (playgrounds, sports facilities, parks, and so on). This implies that children need to spend less time in the traffic environment, and are thereby less exposed both in terms of time and to traffic hazards. That a large proportion of Swedish children now attend pre-school also means that they spend less time playing outdoors in the immediate vicinity of their homes. These lines of reasoning support the likelihood of differential exposures between social groups (as opposed to differential susceptibility).

Conclusion: How the traffic environment is planned and organized is of decisive importance for both injury incidence in itself and for how the difference in incidence between socioeconomic groups can be reduced. The consequences that various types of interventions may have with regard to the distribution of risk between socioeconomic groups ought to be considered in the planning, implementation and evaluation of preventive actions.

Trajectories of poverty and health among eight years old children in the Quebec birth cohort

Authors: Béatrice Nikiéma, Louise Séguin, Lise Gauvin.
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Abstract

Background: Being born and raised in poverty affects child health and compromises future adult health independently of adult socioeconomic status. Some longitudinal studies suggest that the effect of poverty on child health can vary, depending on timing and duration of exposure. However, there are controversies over the impact of poverty on the incidence or prevalence of childhood asthma in developed countries.

Objectives: to disentangle the health effects of transient poverty from those of chronic poverty regarding trajectories of asthma attacks from birth to 8 years old.

Method: Data from 1177 children of the Quebec Longitudinal Study of Child Development were analysed. Asthma attacks during the previous year were reported annually by mothers. Low income was defined following Statistic Canada cut-offs. Latent class analyses allowed us to examine trajectories according to the household income and to the child experience of asthma attacks from birth up to 8 years old.

Results: Four poverty trajectories are identified: Stable non- poor, entering into poverty, exiting poverty, and stable poor. Two latent classes of asthma attack are identified, one with low-probability of asthma attacks up to 8-years old (91%), the other with high probability of asthma attacks (9%). An adjusted model shows that children from stable-poor family have more probability of being member of the high-risk group for asthma (OR=2.32; 95%CI [1.1 – 4.92]) compared to those from stable-non poor families. Boys (OR=1.93; 95% CI [1.23 – 3.05]) and children with parental history of asthma (OR= 1.94; 95% CI [1.11 – 3.4]) are also more at risk.

Conclusions: Chronic poverty across the first 8-years of life is a stronger predictor than transient poverty, for the risk of sustaining poor health conditions during this period, as indicated by trajectories of asthma attack. Further longitudinal investigations with other health indicators are required to disentangle critical periods from cumulative effects of childhood poverty on children's health.

Poverty during the early years and child health: some results from Quebec birth cohort.

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Abstract

Background: Experiencing deprivation during childhood matters for health but it is not well understood how does it affect child health in industrialised countries. This poster presents some results from our analyses of the Quebec Longitudinal Study of Child Development (QLSCD) on the links between child poverty and child health from birth to 8 years old

Method: We used data from the first nine waves of the Quebec Longitudinal Study of Child Development (QLSCD). The QLSCD is the only ongoing birth cohort study in Canada that has been followed without interruption since 1998. A representative sample of 2120 singleton infants was recruited at the age of 5 months and followed-up annually to assess their development and health in relation to their upbringing conditions at the household and community levels.

Poverty was operationalized as having a household income during the previous 12 months below the Canadian low-income cut-off (LICO) which accounts for household size and size of community of residence. Trajectories of poverty were established by applying discrete mixture models with the PROC TRAJ procedure. This method enables estimating group membership based on clusters of data points using finite mixture modelling.

From mother reports, we established the occurrence of asthma attacks, acute infections, or obesity at different ages: 3.5, 4.5 or 6 years. Regression analyses and multilevel analysis were carried out to assess main effects of exposure variables and interactions between poverty and both psychosocial and biological vulnerability respectively controlling for potential confounding variables.

Results: The poverty trajectory analysis shows that 7.8% of participating children lived in chronic poverty while 15.6% experienced transitory episodes of poverty during their first 8 years of life.

Other results demonstrate that timing & duration of poverty matter for child health: there is usually a lag between exposure to poverty and its impact on health; an accumulated (chronic) exposure has more effect on child health than a transitory one. There was no association with concurrent poverty, therefore we can observe different results from a longitudinal analysis than from a cross-sectional ones; interactions were observed between mothers' characteristics and duration of poverty regarding child obesity. Finally, between 5 and 7 years old, chronic poverty is associated with the likelihood of asthma attacks.

Conclusion: Many Canadian children experience poverty during their first years of life. The relationship between child poverty and child health is not always linear.

Profile of cortisol, a stress biomarker, in mothers and their child during back to school period

Author: Mai Than Tu
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Abstract

Background: Cortisol, a hormone reflecting the biological response to stress, can be measured through repeated saliva samples during the day. Studies have reported greater cortisol levels in winter compared to summer in adults suggesting seasonal variations in cortisol secretion. While cortisol levels are known to be affected by socioeconomic factors such as low household income in both adults and children, studies did not consider the period surrounding back to school, in the fall, when anticipation, preparation, and unplanned or excessive expenses may be stressful especially for low income families.

Objectives: To examine cortisol awakening response (CAR) in 10-11 years old children from the Quebec Longitudinal Study on Child Development (QLSCD) and in their mothers, while taking into account the period surrounding back to school in the fall.

Methods: Over a period of 14 months, salivary cortisol was collected in 468 mothers and 511 children, at waking up and 30 minutes later, on two weekdays.

Results: Preliminary findings suggest that cortisol awakening response in mothers is generally greater than in children. Seasonal variations show that during summer mothers' CARs are lower, bringing them to comparable amplitude to children's CAR. When comparing the influence of back to school period, children's CARs are higher during back to school period (reaching the amplitude seen in mothers), while mothers' CARs remained similar from one period to the other.

Conclusions: These findings suggest a greater reactivity to stress in children when they go back to school after summer vacations, regardless of household income level. Further analyses are currently ongoing. Findings, their methodological implications and associations with other health outcomes will be presented.