

Session: Contemporary family formation processes and their health implications for children
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Title of the Paper: Low birth weight children growing up in contemporary families
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Abstract

Are the following two phenomena, the increasing incidence of low birth weight on the one hand, and the changing partnership and family formation behaviour in Europe on the other hand, related? ¹ The first part of this paper consists of a literature review on this subject. It first discusses the individual maternal risk factors for low birth weight and their mutual interrelations, as well as their links with phenomena such as the increased use of assisted reproductive technologies. It then examines the child health consequences of low birth weight, starting from a broad definition of health, which takes account of both the social and psychological aspects of child health. Does the socio-economic environment have the potential to affect the health consequences of low birth weight? Can a good environment, for instance, allow low birth weight children to catch up with their normal birth weight peers in terms of educational performance? The results of our literature review suggest that the answers to both questions are positive. The second part of this paper briefly presents the results of an empirical analysis based on Belgian micro-level data (184 words).

¹ Following the WHO definition, birth weight is classified into the following categories: low birth weight < 2500 g; very low birth weight < 1500 g; extreme low birth weight <1000 g.

Background

The study of the child health consequences of low birth weight is important for a number of reasons. To begin with, the proportion of low birth weight is increasing in many European countries, partially as a result of delayed childbearing. Low birth weight is also a good predictor for the future child health status, and for health problems later in life. More and more very low (VLBW) and extremely low birth weight (ELBW) children survive, partially due to improvements in the neo-natal environment, but suffer from several health problems. These issues call attention to the economic costs of keeping such children alive, combining with ethical concerns as to whether these children will be able to live healthily and independently later on in life.

Theoretical guidance

This paper touches upon three theoretical issues. The first concerns the risk factors for low birth weight. Use is made here of the analytical frameworks developed by Kramer (1987) and Kallan (1993), which distinguish between behavioural, health and socio-demographic risk factors. The second concerns the 'measurement' of the health consequences of low birth weight. Use is made here of the multi-dimensional health classification scheme by Young (1998). Young's framework distinguishes between four domains of health: opportunity, perceptions, functional status and impairment. Functional status divides further into social, psychological and physical components. The third theoretical issue concerns the optimal way to study the child health consequences of low birth weight. Ideally, use should be made of the life course approach as proposed by Giele and Elder (1998). In order to operationalize time-use information in data analysis, three life course concepts of Giele and Elder (1998) - location in time and place (history and culture/period); linked lives (social relations/cohort); and human agency (development of the individual/age) - are presented and discussed.

Data and Method

As mentioned above, this paper presents the results of both a literature review and an empirical analysis. The literature review mainly concerns English-language scientific articles focusing on European and industrialized nations in the period of 1980-2004. These were in the first place collected through electronic search engines on the basis of a consistent set of criteria, and later on complemented with articles referred to by experts in the field. The empirical analysis will be based upon Belgian micro-data (from both Flanders and Walloon) recording the maternal and child characteristics from the timing of birth to age 3. Issues such as mothers giving birth in Belgium but not registered in the data, drop-outs and non-response, will be taken into account.

Results

The literature review highlights a number of key risk factors for low birth weight: behavioural risks (smoking, alcohol and stress); health related risks (abortion, hypertension, multiple births etc); and socio-demographic risk factors (young/old age, low education and non-marital status). Low birth weight children are found to be at greater risk for health problems later in life and the risks are higher for very low birth and extremely low birth children. A number of studies have established links between low birth weight and *school performance, psychomotor development, emotional well-being, and conduct disorders in children and adolescents* (Cheung, 2002); *with problems in pulmonary function, physical growth, neurological outcome,*

psychosocial development and social disadvantages (Gissler et alii, 1999); and with *respiratory problems, cognitive, neurological and psychological deficits* (Kelly et alii, 2001). So far, the role of the socio-economic environment in shaping the health outcomes of these children has not been studied sufficiently, and if it has, contradictory results have been produced. This is probably caused by data-design constraints. However, the results based on literature review overall pose many questions on the health status of the child when a low birth weight child can enjoy better status by growing up in better socio-economic environment. The better environment is, for instance, mothers who are highly educated, have higher income and are married. In the data analysis on the basis of Belgian data, several topics will be analysed for low, very low and extremely low birth weight children in comparison with normal birth weight ones: i. trends in maternal (and partner, if available) characteristics such as age, educational status and social class; ii. trends in child survival and subsequent child health; iii. examination of the interaction effects among socio-economic variables.

Conclusion

This paper investigates the child health outcomes of low birth weight through a literature review complemented by empirical data analysis. Special attention is paid to the complex influence of the socio-economic environment that these children grow up in. Risks for health problems among low birth weight are found, and further, risks are higher for VLBW and ELBW children. Both birth and socio-economic factors determine the child health status and the health status later in life. Low(er) birth weight can/may be compensated by a better socio-economic environment, while the reverse is not true. In other words, normal birth weight living in disadvantageous socio-economic environment cannot obtain good health status. Further, it is likely that discrepancies between normal birth weight children living in a better socio-economic environment and low birth weight children living in worse socio-economic environment widen as age increases. This calls for interventions in welfare programmes.

References

- Cheung, Y. B. (2002) Early origins and adult correlates of psychosomatic distress. In: *Social Science and Medicine*. 55, 937-48.
- Giele, J.Z. and G.H. Elder (1998), Life course research: Development of a field. In: J.Z. Giele and G.H. Elder, Jr., eds, *Methods of life course research: Qualitative and quantitative approaches*. Sage Publications, Thousand Oaks, London, New Delhi, 5-27.
- Gissler, M., M.R. Jarvelin, P. Louhiala and E. Hemminki (1999) Boys have more health problems in childhood than girls: follow-up of the 1987 Finnish birth cohort. In: *Acta Paediatr* 88, 310-4
- Kallan, J. E. (1993) 'Race, intervening variables and two components of low birth weight'. In: *Demography*, 30, 3, 489-506.
- Kelly, Y. J., J. Y. Nazroo, A. McMunn, R. Boreham, M. Marmot (2001) Birthweight and behavioural problems in children: a modifiable effect? In: *International Journal of Epidemiology*. 30, 88-94.
- Kramer, M.S. (1987) Determinants of low birth weight: methodological assessment and meta-analysis. *Bulletin of the World Health Organizations*, 65, 5, 663-737.
- Young, (1998) *Population and health*, Oxford University Press, Oxford.