



Magdalena Janus, PhD

Research Work

The healthy development of children before and at the age of school entry is at the heart of most of my research. This particular age period – 4 to 6 years of age – marks one of the most important developmental transitions and is commonly recognized across many cultures around the world as the transition to the age of independence. In the work carried out by my team and my collaborators, we focus on individual, family, and community-level determinants of health and successful adjustment; in communities in Canada, and in countries outside Canada, especially developing ones. I want to know what combination of individual, family, and community factors makes children develop optimally, and which of these factors can be modified to ensure that more – or all children – start school with optimal developmental health, that is with adequate skills in a wide range of developmental outcomes, such as physical, mental, behavioural, and cognitive. It is important to answer this question for all children, but in particular for children with health challenges.

The majority of my work centers on the implementation, reporting, and research using the EDI (Early Development Instrument). I developed the EDI with Dr. Dan Offord in 1999 with the goal of creating a feasible, acceptable, and psychometrically sound measurement instrument to assess developmental health of children prior to entry to Grade 1. The EDI measures developmental health in the areas of physical health and well-being, social, emotional, language and cognitive development, and communication skills and general knowledge. Data on the status of children's developmental health at school entry are collected at population level – for all children attending kindergarten – using the EDI in provinces and territories across Canada. Over time, data have indicated that close to 30% of Canada's children face challenges in some aspect of their development. At least two thirds of the vulnerabilities in children's development could be eliminated if we provide better environments, nurturance, support, stimulation, and opportunities to participate for young children. This will not only result in improved health for all Canadians, but also in saved tax dollars in lower unemployment, decreased mental and physical health care, and increased tax contribution.

With the support of two recent CIHR grants, together with a team of colleagues from other provinces, we created a database of EDI data collected since 2004 and complemented it with sociodemographic area-level variables from Canadian Census and Taxfiler data. We are not only exploring whether socioeconomic factors have similar association with all aspects of child development, but also whether the patterns of associations are the same or not in different parts of Canada. The database for children with health disorders offers some particular advantages as well as challenges (Janus et al. 2018). Due to population-level data collection, there are enough children with even low-frequency disorders to investigate hypotheses about prevalence and development. On the other hand, with very few children with specific health disorders per neighbourhood, we are challenged to find adequate statistical methodologies.

The growing volume of research using the EDI showing how many aspects of early life influence outcomes at school entry led to my growing interest in the even earlier development. Since 2013, I have worked on the IYCD (Infant and Young Child Development) project with WHO, in which we investigated whether the existing

data on development of children under 3 years of age in the emerging economies reveal an underlying, universal, and measurable indicator (Lancaster et al. 2018). Last year, our group was among the founders of an international consortium that works on the Global Scales of Early Development (GSED) Project - it is a global partnership formed with the ambition to create a set of new tools to assess the development of children under the age of three globally at population and programmatic levels. It brings together the recent work, expertise, and advances already made in this area by three teams to develop harmonized, and maximally culture-neutral instruments, and establish rigorously-tested evidence for their validity. The GSED Project is currently funded for 2 years by the Bill and Melinda Gates Foundation. We expect to start field work in the summer of 2019.

Recent Publications

Janus, M., Brownell, M., Reid-Westoby, C., Bennett, T., Birken, C., Coplan, R., ... & Santos, R. (2018). Establishing a protocol for building a pan-Canadian population-based monitoring system for early childhood development for children with health disorders: Canadian Children's Health in Context Study (CCHICS). *BMJ Open*, 1-10. doi:[10.1136/bmjopen-2018-023688](https://doi.org/10.1136/bmjopen-2018-023688)

Lancaster, G. A., McCray, G., Kariger, P., Dua, T., Titman, A., Chandna, J., ... & **Janus, M.** (2018). Creation of the WHO Indicators of Infant and Young Child Development (IYCD): Metadata synthesis across 10 countries. *BMJ Global Health*, 3, 1-15. doi:[10.1136/bmjgh-2018-000747](https://doi.org/10.1136/bmjgh-2018-000747)

To Learn More :

You are invited to attend the *Offord Centre Lunch and Learn* on **Wednesday March 13th** from **12:00 to 1:00pm** which will be focused on the EDI and relevant work by our team.