

VULNERABILITY ON THE EDI



WHAT DO WE MEAN BY VULNERABILITY?

At the Human Early Learning Partnership (HELP), our research focuses on the developmental health of children across British Columbia. One way that we investigate developmental health is by determining the percentage of children in the population that are deemed to be “vulnerable.” Vulnerable children are those who, without additional support and care, are more likely to experience challenges in their school years and beyond.

Using data gathered from the Early Development Instrument (EDI), we can measure population-based vulnerability rates for each of the five domains of development - physical, social, emotional, language and cognitive, and communication skills. The data illustrate trends in vulnerability over time. Through data analysis and mapping, it also becomes possible to examine regional differences in child vulnerability at multiple geographical levels from a broad provincial snapshot, to community and neighbourhood analyses.

A child is deemed to be vulnerable on a particular domain if his or her scores fall below the “vulnerability cut-off” for that domain. In order to avoid the temptation to use individual children’s scores for diagnostic or placement purposes, we only report vulnerability for groups of children; i.e., as the percentage of children who are vulnerable across a whole neighbourhood, school district or province. Vulnerability rates are calculated for each of the five developmental domains, or as overall vulnerability, which we define as the percent of a group of children who are vulnerable on one or more of the five EDI scales.



FIG 1: THE VULNERABILITY CUT-OFF

WHAT IS A VULNERABILITY CUT-OFF?

Dr. Magdalena Janus and Dr. Dan Offord at McMaster University constructed the EDI in the late 1990’s with the assistance of expert advisors, such as pediatricians and developmental psychologists. Their goal was to design an instrument in which: a) each of the items was developmentally appropriate for kindergarten-age children, and b) the chosen items were predictive of future success in school, as established by Canadian research on early child development available at the time. The 10th percentile as the vulnerability cut-off was chosen for each domain after the first large data set was collected. In British Columbia, our own set of vulnerability cut-off scores were set using this same 10th percentile criterion, based on the results of the first wave of EDI data collection. Using this criterion, the corresponding overall vulnerability rate (i.e., the percentage of children vulnerable on one or more of the five domains) in BC was 26%.

Now that the EDI has been completed everywhere in Canada [except Nunavut], there is a pan-Canadian normative sample from which national cut-off scores are calculated for each domain. Research both in BC and elsewhere in Canada has demonstrated that children identified as vulnerable in Kindergarten are more likely to perform more poorly on standardized tests of literacy and numeracy in later grades.

To be vulnerable means that a child is at increased risk of encountering difficulties in the school years and beyond.



WHY ARE DIFFERING VULNERABILITY RATES SOMETIMES REPORTED?

Under two special circumstances, the reported BC vulnerability rate for a particular wave will be different from that reported in HELP publications. The first such circumstance is when non-BC cut-off scores are used, such as for pan-Canadian EDI studies that use the country-wide cut-off scores. The second circumstance has to do with exclusion criteria. In BC, children with special needs are included in the baseline sample, but in other provinces (and nationally) they are not. Since children with special needs, as a group, are more likely to be vulnerable, excluding them reduces the vulnerability rate from what it would be otherwise.

WHAT DO WE MEAN WHEN WE SAY THAT SOME VULNERABILITY IS AVOIDABLE?

Between birth and school age, approximately 3% to 5% of children have congenital or diagnosable conditions that limit their development. For example, children with autism, or other developmental delays, are vulnerable at school entry due to their medical condition. This vulnerability cannot be eliminated solely through support in their early years. In practice, over the years that EDI data have been collected in over 2,000 neighbourhoods across Canada, we have seen a number of neighbourhoods that have achieved an overall vulnerability rate of less than 10%. By creating environments in which children thrive – establishing family friendly policies, planning to address children’s needs, investing wisely, and collaborating for children’s benefit – we can ensure that the vast majority of children develop optimally and that we keep vulnerability levels to a minimum. And so, we consider overall vulnerability rates that are greater than 10% avoidable.

EDI SCALES TREND PROFILES



Physical Health & Well-Being

Children with vulnerability on the Physical Health and Well-being scale experience a number of challenges that affect their ability to physically cope during the day. This may include being dressed inappropriately, frequently late, hungry or tired. Children may have fading energy levels. These children may also experience challenges in tasks that require developed fine and gross motor skills.



Social Competence

Children who are identified as vulnerable on the Social Competence scale are more likely to have problems getting along with other children on a regular basis and have difficulty following rules and class routines.



Emotional Maturity

Children who are emotionally vulnerable experience a number of challenges related to emotion regulation. They are likely to have problems managing aggressive behavior and might be prone to disobedience, or be inattentive and impulsive. Often these children will not naturally help their peers or adults.

Language & Cognitive



Children who are vulnerable on this scale experience a number of challenges in reading, writing and with numbers. They may be unable to read or write simple words, they may be uninterested in trying, and are often unable to attach sounds to letters. These children may also have difficulty remembering things, counting to 20, and recognizing and comparing numbers.



Communication Skills & General Knowledge

Vulnerable children will have poor communication skills and articulation. They may have limited command of English (the language of instruction), have difficulties making themselves understood to others and/or in understanding what others say.

WHERE IS INFORMATION ABOUT VULNERABILITY AVAILABLE ON-LINE

More information about child vulnerability can be found in local and regional maps and summaries on the HELP website: earlylearning.ubc.ca/maps/edi.

Additionally, information about the national data set and vulnerability reporting can be found at edi.offordcentre.com.

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