



Child and youth development and income inequality: A review of selected literature

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FIRST CALL is committed to the implementation of the UN Convention on the Rights of the Child. One of the values flowing from the convention is the principle of economic justice:

- Economic justice is based upon ensuring that all families have a standard of living that provides for adequate nutrition, housing, and childcare.
- Economic justice supports healthy physical, emotional, social, and intellectual development, and assures access to health, educational, cultural, leisure, and recreational opportunities.
- Economic justice rests on the creation of an equitable economic base.

FIRST CALL provides local communities and organizations with information, tools and other supports to assist them in their advocacy on behalf of children and youth. Tools include things like election surveys, publications, poverty report cards, videos, e-mail networks, posters, and policy analysis. We are supported in our work by donations and contributions from various levels of government, private foundations, our partner organizations and individuals.

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Executive Summary

This review examines the relationship between income poverty, inequality and child outcomes in Canada, with a particular focus on studies completed since 1998. Particular emphasis is accorded areas of relatively new research, such as the relationship between income and child outcomes in the area of food insecurity, obesity and asthma, the well-being of children in care, school readiness and the educational attainment of immigrant youth.

In the past ten years, longitudinal data on child well-being have increased considerably, and new methods of analysis such as Hierarchical Linear Modeling (HLM) have permitted more fine-grained explorations of the relationships between income and child outcomes. Studies that capture the dynamics of low income, including the length of time children live in low income households, the depth of their poverty (as measured by the gap between the family income and the low income cut-off, known as the LICO) and changes in family income, suggest that income has a more significant negative effect on children's outcomes than previously revealed. Indeed, many researchers argue that income is the most important factor determining children's educational and health outcomes. Moreover, national and international statistics suggest Canada has a child poverty rate of between 15.8% and 18% (depending on the measure used), one of the highest among OECD countries. Canada was one of the few OECD countries that did not succeed in lowering its child poverty rate between 1993 and 2003. Female-led, single parent families are particularly affected. In British Columbia, the poverty rate among children living in lone parent families headed by women is 62.8% (First Call, 2006).

Income inequality has increased internationally, and in Canada. In 1993, the richest 10% of families had \$10 for every \$1 of income in the poorest families. By 2003 this gap in pre-tax income had risen to \$13 for every \$1 in the poorest families (CCSD, 2006, p. 16-17).

Children living in low-income homes are more likely to experience poor health as infants, to suffer from chronic asthma, and to be overweight or obese. These health issues result in more frequent visits to hospital emergency wards, for severe and chronic symptoms. Low-income children and their families are likely to experience chronic food insecurity. Families reduce the quantity and quality of food they purchase; they eat fewer fresh vegetables and fruit, rely upon food banks and live in unsafe and substandard housing. Mothers frequently compromise their food intake at regular monthly income cycles. This has significant effects on children's learning and on long-term child and maternal health.

Several population-based studies reveal that income is perhaps most strongly linked to education outcomes, particularly in areas related to cognition and behaviour. Education outcomes are particularly sensitive to the depth, duration and timing of poverty, although even modest increases in family income result in significant learning gains, particularly in families of very young children.

Low income has also emerged as a firm pathway into government care. For the most part, data on the rates and progress of children in care are inconsistent or inadequate, but a few new studies in this field suggest that children in care experience more health problems, are more likely to be injured or die as children, and have poor educational outcomes compared to their peers not in care. Aboriginal children are much more likely to be taken into government care

and comprise 49% of children in care in British Columbia, reflecting broader processes of social exclusion that exacerbate low income.

Of note in this review are studies that suggest that even modest increases in family income through increased earnings or cash transfers have strong and positive effects on children's development. International studies suggest that one possible reason for the persistent and deepening levels of poverty among Canadian children is that social policy has not sufficiently kept pace with social change. Canadian policy makers have left it up to families to negotiate the impact of the changing economy on their child raising work. Additionally, international and local policy analysts claim that the absence of a clear and officially accepted poverty measure in Canada may have the effect of clouding government commitment to measuring and reducing child poverty and its long-term negative effects. The findings of this review suggest the consequences of these social policy shortcomings for Canadian children and for society as a whole.

Child and youth development and income inequality: A review of selected literature

Introduction

The spirit of the UN Convention on the Rights of Children is that children should have 'first call' on societies' concerns and capacities in order to protect their vital, vulnerable years of growth from the mistakes, misfortunes and vicissitudes of the adult world. Their right to grow up with a level of material resources sufficient to protect their physical and mental development, and to allow their participation in the life of the society into which they are born is a right to be protected in good times and in bad. Guaranteeing that right should not depend on whether economies are in growth or recession, or on whether interest rates are rising or falling, or on whether a particular government is in power or a particular policy in fashion. This is what is meant by the principle of 'first call'. Reducing poverty rates is perhaps the single most meaningful and measurable test of how well the governments of the developed world are living up to that ideal. —UNICEF, 2005, p. 31

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In the spirit of the widely acclaimed ideal of 'First Call', and with the understanding that it is the responsibility of government to protect the most vulnerable of its citizens and to prepare for the future, this literature review examines the relationship between income poverty, inequality and child outcomes in Canada. The review builds upon themes and findings of *The Well-Being of British Columbia's Children and Youth: A Framework for Understanding and Action* written by Hay and Wachtel and published by First Call in 1998. Based on insights from population-health research, Hay and Wachtel (1998) concluded that:

Children and youth who live in poverty are at greater risk in terms of healthy child development having to cope with a dangerous or unhealthy physical environment, not achieving high educational status, and then as adults, suffering from job insecurity, underemployment, poor working conditions and so on. (p. 25)

The present review also draws primarily upon Canadian population-based research and comes to similar conclusions. However, it concentrates on research since 1998 in the domains of health, education and children in care. Particular emphasis is accorded areas of relatively new research, such as food insecurity, obesity and asthma, the well-being of children in care, school readiness and the educational attainment of immigrant youth.

In the past ten years, longitudinal data on child well-being have increased considerably, and new methods of analysis such as Hierarchical Linear Modeling (HLM) have permitted more fine-grained explorations of the relationships between income and child outcomes. Although scholarly debate continues surrounding the nature of this relationship, the findings of this review suggest that just as income poverty and income inequality increased in Canada in the past decade, they were found to have a more significant negative effect on child development outcomes than previously believed.

While the findings reveal the complexity and diversity of experiences among low-income children and youth and their families, there was nonetheless strong consensus in the literature that prolonged low-income status, and more specifically, income inequality, has significant and long-term negative consequences for children's healthy development.

Scope of the review, selection criteria and limitations

Research literature provides a range of strategies for reducing poverty among children and families, and mitigating its effects on children's development. While these strategies are important, the present review is concerned with studies that document the impact of low income and income inequality on child development.

This review emphasizes emerging trends in research on income and child development outcomes, in areas of infant health, childhood asthma, food insecurity, child overweight and obesity. The implications of low income and inequality for children's education outcomes are considered in the context of school readiness, literacy and school completion, all of which are widely recognized as inter-related and important indicators of academic success. The link between income poverty and children in care in Canada is an issue of growing concern among social policy analysts, advocates and researchers. This review considers the small but growing literature in this field.

Relevant literature was selected according to several criteria. First, searches were limited to peer-reviewed studies published in scholarly and academic journals. Exceptions were made for relevant international, national and provincial research studies published by government and non-government agencies,

where these introduced new data and perspectives on the themes under review. Search engines included PsychINFO, Academic Search Premier, JSTOR, Web of Science, ERIC CSA and Google Scholar. Second, the review focused on studies from 1998 to 2006, either carried out in Canada, or involving Canadian data on children and youth. Where there was insufficient Canadian literature on a topic, studies based in the United States were also included. Studies were selected that contained the appropriate combination of the following terms, either in their title or abstract: "child/ren" "youth" and "poor/poverty", "income inequality" and "schooling" "school readiness", "literacy", "health", "nutrition", "injury" and "children in care".

Interestingly, the concept of "developmental outcomes" was embedded in many study methods and findings. For example, studies investigating low-income children's diet and obesity rates inferred that obesity posed a risk to children's healthy development, even if this was not explicitly stated in research abstracts. Put another way, the concept of "developmental outcomes" is conceived of broadly in the literature and refers, implicitly and explicitly to the cognitive, emotional, physical and mental health consequences of children's social environments.

While most of the studies included in the review are based on longitudinal data sets and/or adopt population-based research perspectives, qualitative peer reviewed studies are also included. The diverse range of methods and analytic lenses represented in the selected literature lends theoretical and analytical depth to this complex topic, and offers a range of perspectives from which the reader may interpret findings and draw conclusions.

The findings of this review do not represent an exhaustive search of the relevant literature but rather a representative sample of a broad range of studies concerned with selected developmental outcomes of low-income children and youth. While the findings reveal the complexity and diversity of experiences among low-income children and youth and their families, there was nonetheless strong consensus in the literature that prolonged low-income status, and more specifically, income inequality, has significant and long-term negative consequences for children's healthy development.

Defining and measuring poverty and income inequality

With some exceptions, this review has focused on studies that define child poverty in relation to the Canadian Low Income Cut-Off (LICO) measure, (Statistics Canada, 2006) the United States' poverty thresholds (United States Census Bureau, 2005) or the LIM (Low Income Measure) used by international organizations (Statistics Canada, 2006a; UNICEF, 2005). LICOs are set according to the proportion of family income spent on basic necessities such as housing, food and clothing. These cut-offs vary according to family size, the size of the community in which they live and its location. As Statistics Canada has stressed, the LICO is not a measure of poverty, but rather a measure of how well off some Canadians are in relation to others (Statistics Canada, 2006a). Because there is wide debate in Canada about what constitutes "poverty", since the 1990s Statistics Canada has published both before and after-tax LICOs and the LIM (Giles, 2004, p. 6). The LIM is most commonly used in international studies to compare low-income rates across countries and regions. It is "a fixed measure of 50% of the adjusted median family income" (Giles, 2004, p. 8), where "adjustments" are made for family size. The before and after-tax income measures have proven useful in determining the success of tax credits, allowable deductions and transfers as levers of income re-distribution.

In addition to the LICO and LIM, in 2003 the Ministry of Human Resources and Development Canada (HRDC) introduced the Market Basket Measure (MBM) (HRDC, 2003). This is an income measure based on the cost of a specific basket of goods including food, clothing, shelter, transport, and other household necessities. As UNICEF (2005) describes: "The specific choices involved in what is included in the 'basket' were meant to represent "community standards" of expenditure, and the new poverty line was drawn at the level of income required to purchase this basket of goods" (p. 19).

The application of the MBM measure in 2003 was expected to reveal that the poverty rate in Canada was lower than the LICO figures suggested. Instead, the opposite occurred. According to the National Council of Welfare, "The MBM shows a higher child poverty rate (16.9 percent) than either the pre-tax LICO (16.6 percent) or the post-tax LICO (12.6 percent)" (National Council of Welfare, 2003, p. 1). According to HRDC (2003), "Children under age 18 comprised a higher share (29.5% vs. 26.6%) of the low-income population in 2000 using the MBM compared to the LICOs—Income After Tax. Moreover, a higher share of low-income children lived in two-parent families using the MBM (61.8%) compared to the LICOs—Income After Tax (56.3%)" (p. 11).¹

¹ For more detailed statistical information on child poverty in Canada and in British Columbia, see First Call: Child and Youth Advocacy Coalition. (2006) *BC Campaign 2000: 2006 Poverty Fact Sheets*. <http://www.firstcallbc.org/>

Parental income is positively correlated with virtually every dimension of child well-being that social scientists measure, and this is true in every country for which we have data.
(Mayer, 2002)

In an addendum to the 2004 Income Statistics Division report on low income measurement, Ivan Fellegi noted that while many groups accept de facto Statistics Canada's low-income measures as useful for research and policy making, these are not "poverty measures." He states: "Poverty is intrinsically a question of social consensus, at a given point in time and in the context of a given country...once governments establish a definition, Statistics Canada will endeavour to estimate the number of people who are poor according to that definition" (Statistics Canada, 2004, p. 37). UNICEF (2005) has argued that amidst debate about the relative accuracy of each low-income measure, there is enough similarity in their results to suggest that child poverty and income inequality is increasing in Canada. The report hypothesizes that the absence of a clear and officially accepted poverty measure in Canada may have the effect of clouding government commitment to measuring and reducing child poverty (p. 19).

An important theme in contemporary population-based research is the limitations of static measures of income variables for interpreting the relationship between income and child development outcomes. Static measures of income take the income reported by a family at a given moment in time. However, some researchers argue that the length of time children live in low-income households, the depth of their poverty (as measured by the gap between the family income and the LICO) and changes in family income are more reliable indicators for determining the effect of income on child outcomes, since these have a bearing on the resources families are able to draw upon over time (Mayer, 2002; Phipps and Lethbridge, 2006; UNICEF, 2005). Mayer (2002), in her systematic review of literature on parent incomes and child outcomes found that,

Parental income is positively correlated with virtually every dimension of child well-being that social scientists measure, and this is true in every country for which we have data. The children of rich parents are healthier, better behaved, happier and better educated during their childhood and wealthier when they have grown up than are children from poor families (Mayer, 2002, p. 30, cited in Mickelwright, 2003, p. 7).

Mayer also noted that the size of the income effect is greatest with respect to cognitive test scores and educational attainment and that the effect of income is larger when income is measured over a longer period, suggesting "income gains have the potential to make a significant cumulative difference in the lives of children" (ibid., p. 6). Phipps and Lethbridge (2006) also found that a more reliable measure of low income is an average of household income taken over "as many years as are available in the data" (p. 4). Along with Mayer (2002) and Dearing, McCartney & Taylor (2001), Phipps and Lethbridge (2006) found in their re-analysis of three cycles of NLSCY data, not only a strong association between family income and child outcomes in Canada, but also the importance of increases in income, especially for young children. They concluded that,

[R]egardless of age or how income is measured, higher family income is almost always associated with better child well-being. Among children in lower income families, incremental increases in household income were found to be associated with better child development outcomes. Increases in income continued to remain associated with better well-being, even once children are out of low income. In fact, the study did not find a point above which high income ceases to benefit children's development. In particular, children's cognitive and behavioural development measures appeared to have the strongest associations with levels of family income. (Phipps and Lethbridge, 2006, p. 4)

[S]ocieties with steep levels of social inequality are societies in which all children fare worse, though low-income children fare worse than others.

These authors point out that the effects of low income remain strong, although mediated somewhat, through the effects of “maternal mental health, family functioning and positive parenting behaviour” (Phipps and Lethbridge, 2006, p. 10). Arguing that theirs is the first study to do so, Dearing, McCartney & Taylor (2001) applied growth curve analyses to model change over time in family income and child outcomes (ibid., p. 1781). They hypothesized that measuring the dynamic of change in family income-to-needs allows for “a more accurate account of the association between economic well-being and child outcomes than static or categorical approaches have provided” (p. 1781). They found:

[A]n interaction between non-poverty status and change in income-to-needs. Change in income-to-needs was of little importance [in outcomes] to children of non-poor families, but of great importance for children from poor families. In other words, change in family income-to-needs mattered more for children with less. (Dearing, McCartney & Taylor, 2001, p. 1787)

Their findings led the authors to conclude that there exists a causal relationship between income and child development outcomes, particularly in the areas of cognition and behaviour (Dearing, McCartney & Taylor, 2001, p. 1789). The specific findings of this study with respect to education outcomes are discussed in part three of this review. Similarly, Duncan and Brooks-Gunn (2000) found that family poverty has selective effects on child development, and in particular, “deep or persistent poverty early in childhood affects adversely the ability and achievement of children” (p. 188).

The social gradient

An important concept in understanding the relationship between income and child development outcomes is the social gradient. Willms (2003) defines the social gradient as “the relationship between social outcomes and socioeconomic status for individuals in a specific community” (p. 3) Social outcomes can be related to health, education, behaviour, social skills or any measurable trait. A steep social gradient signals a society in which there are higher levels of inequality in outcomes related to socioeconomic status. As Keating & Hertzman (1999, p. 6) describe,

[T]he steepness of the gradient gives important clues as to whether a society is supporting or undermining the development of its population. Most significant is the

Of importance here is the idea of inequality as a social process. One limitation of the social gradient concept as defined by Willms (2003) is that the concern for measuring individual traits against socioeconomic status can mask the processes of exclusion at work in Canada's social institutions.

finding that for all areas of developmental health, steep gradients are associated with overall poor outcomes in comparisons with countries or regions.

In other words, societies with steep levels of social inequality are societies in which all children fare worse, though low-income children fare worse than others.

Income inequality and social exclusion

It is important to attend to the relationship between income and other “protective” variables related to positive child development. For example, Phipps and Lethbridge (2006) found that variables such as time available for family, stable income, resources to invest in children’s programmes and activities, and secure and stable housing “represent additional channels through which economic resources can influence child outcomes” (p. 9). Willms (2002), found that the quality of children’s learning environments in community settings, schools and homes had important influences on child development outcomes, as did social support networks for parents. Thus, poverty is also understood as a measure of resources families can draw upon to

promote their children’s well-being, since, “[E]ven when children from families with limited resources have the necessities of life, they suffer by being excluded from normal childhood activities” (Nichols, 2000, p. 1).

This notion of “exclusion” refers to an understanding of child poverty as a function of structural inequalities in Canadian society. According to Health Canada (2002):

Social exclusion describes the structures and dynamic processes of inequality among groups in society. In the Canadian context, social exclusion refers to the inability of certain groups or individuals to participate fully in Canadian life due to structural inequalities in access to social, economic, political and cultural resources. These inequalities arise out of oppression related to race, class, gender, disability, sexual orientation, immigrant status and religion. (p. 5)

Richmond & Saloojee (2005) propose a concept of social inclusion that includes not only the provision of basic needs but also equality of opportunity. They argue that “inclusion” in North America is often limited to the inclusion of individuals in the labour force. However, participation in the low-wage job sector, without adequate, affordable child care or opportunity for further education or advancement can lead to further exclusion. They suggest instead a process of social inclusion through which social institutions address patterns of discrimination that produce and reproduce exclusion in the first place.

Of importance here is the idea of inequality as a social process. One limitation of the social gradient concept as defined by Willms (2003) is that the concern for measuring individual traits against socioeconomic status can mask the processes of exclusion at work in Canada’s

social institutions. These social processes can shape which traits or indicators become risks to children's development. For example, single parent status or membership in a visible minority community need not be a risk to children's development in a society that does not practice race and gender discrimination. Referring to the poverty that is located in female-led single parent families in Canada, Luxton (2005) highlights the significant negative implications for children's outcomes that result from Canadian governments' "inability to decide whether to support women as mothers, workers or both" (p. 10). This indecision can be traced to ideals of the "traditional" family and gender divisions of labour that do not sufficiently take into account women's involvement in the paid labour market. Thus, emerging perspectives on social inclusion bring insights into the processes underlying the relationship between income and children's outcomes in ways that complement population-based studies.

Part One provides a broad overview of child and youth poverty and income inequality in Canada. This provides a backdrop for a closer examination of the implications of poverty and income inequality on selected child outcomes in the areas of health, education and children in care.

Part One

Child Poverty and Income Inequality in Canada: Background and International Perspectives

In the past twenty years in Canada, children living in lone-parent, female-led families have replaced seniors as the group most likely to live in poverty (Fellegi, 2004).

Child poverty in Canada

In 1990, an all-party resolution committed the government of Canada to “seek to eliminate child poverty by the year 2000” (UNICEF, 2005, p. 19; Campaign 2000). This commitment was not met. National and international government and non-government agencies have concluded the incidence of low-income among children in Canada increased steadily beyond the year 2000. The Canadian Council on Social Development’s 2006 report, the *Progress of Canadian Children* showed that between 2000 and 2003, child poverty rates rose from 17% to 18% (CCSD, 2006, p. 16). This is explained in part by the inadequacy of social assistance to young families: across Canada, social assistance rates are between 47% and 72% of the LICO (Tarasuk, 2003).

Income inequality in Canada

Another phenomenon reported by the CCSD (2006) was the increase in income inequality in Canada. Between 1993 and 2003 the pre-tax income of the wealthiest families rose by 35%, while the pre-tax income of the poorest families only rose by 7% (p. 17). This means that in 1993, the richest 10% of families had \$10 for every \$1 of income in the poorest families (p. 16-17). By 2003 this gap in pre-tax income had risen to \$13 for every \$1 in the poorest families. The distribution of low-income children in society provides a window into patterns of social exclusion in Canada. The poorest families are those most likely to experience discrimination and receive the fewest services: “Many families in the lowest income group are recent immigrants, visible minorities, Aboriginal people, lone-parent families headed by women and people with disabilities” (CCSD, 2006, p. 17). Indeed, in British Columbia, the poverty rate among children living in lone parent families headed by women is 62.8% (First Call, 2006). In the past twenty years in Canada, children living in lone-parent, female-led families have replaced seniors as the group most likely to live in poverty (Fellegi, 2004).

In its sixth report card on poverty in Organization of Economic Cooperation and Development (OECD) countries, UNICEF’s Innocenti Research Centre (2005) noted the consistently high child poverty rates and the trend toward economic inequality in Canada and other rich nations. This report card showed that the proportion of children living in poverty since the 1990s had risen in 17 out of 24 of the most affluent countries. Canada’s child poverty rate, unchanged in the period under review, ranked 19 out of 24 OECD countries with 14.9% of children living in households with income below 50% of the national median income. A national child poverty rate over 15% is considered “exceptionally high” according to UN measures (UNICEF, 2005). Of note, child poverty rates in the UK and the USA declined significantly in the 1990s, though they still remain high.

Social policy that reduces child poverty

As inadequate as social assistance rates are, the CCSD points out that without government transfers in the form of the Child Tax Benefit, Employment Insurance and the GST benefit, the child poverty rate in Canada in 2003 would have been 27% rather than 18% (CCSD, 2006, p. 17), illustrating not only the close proximity of many Canadian family incomes to the LICO, but also the sensitivity of poverty rates to social policy, and in particular cash transfers to young families.²

The report's analysis of the factors that contributed to the success of the US and the UK in reducing poverty, is instructive for Canadian policy makers. According to UNICEF (2005), in the period 1992 to 2001 there was a 3.1% decline in child poverty in the UK. Chen and Corak (2005) state that "[t]he major factor determining the fall in child poverty rates were changes in government transfers" (p. 25). According to UNICEF's child poverty report card (2005) the 7.1% decline in child poverty in the United States in the 1990s is attributed to a six-fold increase in government support of working families and the rather dramatic increase in earnings among mothers (p. 19-20), which indicates that adequate family income is increasingly reliant upon two wage earners. Those on social assistance in the US, however, experience deeper levels of poverty over long periods of time (P. 23-24).

UNICEF (2005) argues that common to countries in which child poverty declined was the development of achievable targets against which to measure progress. The report recommended that countries define and measure poverty according to current median incomes and, echoing Fellegi (2004), build a social consensus surrounding the importance of setting and meeting clear targets for poverty reduction. In the case of the UK, "these measures appear transparent, credible and not so complex that the monitoring of progress becomes either impossible or ensnared in too much detail" (UNICEF, 2005, p. 5).

The CCSD (2006, p. 17 - 18) notes that countries that spend more than 10% of their GDP on social programs have a child poverty rate of less than 10%. These include most of the countries in Continental Europe with the exception of Italy. While some have shown improvement, the OECD countries that persistently experience the highest levels of child poverty are all outside of Continental Europe. Australia, Canada (which spends just over 5% of its GDP on social programs), Ireland, New Zealand, Japan, Mexico, the UK and the USA are in the bottom third in terms of the percent of children living below national poverty lines (CCSD, 2006; Mickelwright, 2003; UNICEF, 2005). Mexico had the highest rate of poverty at 27.7 per cent, followed by the United States at 21.9 per cent. Mickelwright (2003) explored the prevalence of child poverty in English-speaking

[T]he average rate of child poverty in Continental Europe in 2001 was 9%, whereas for English-speaking countries, the average rate was almost twice that, at 16%:

² For more detailed discussion on social assistance rates, income transfers and other policies affecting low income children in BC and Canada see, Kerstetter, S. (2006) *Child Poverty & Income Inequality in British Columbia - A Status Report*. Vancouver: First Call: BC Child and Youth Advocacy Coalition. See also, Klein, S. & Long, A. (June, 2003). *A Bad Time to be Poor: An analysis of British Columbia's new welfare policies*. Vancouver: The Canadian Centre for Policy Alternatives and the Social Planning and Research Council of BC.

countries in a comparative analysis. He noted that the average rate of child poverty in Continental Europe in 2001 was 9%, whereas for English-speaking countries, the average rate was almost twice that, at 16%: “In terms of the scale of the problem measured in this simple way [by income], there is ample justification for the English-speaking countries to take child poverty especially seriously” (Mickelwright, 2003, p. 23).

Debates about the causes of child poverty

Mickelwright (2003) illustrates how high levels of child poverty and steep social gradients are manifested in North American and Southeast Asian countries through outcomes such as higher teenage pregnancy rates than are found in Europe, higher secondary school drop out rates, lower long-term earnings and poorer overall health. He points out that there remains debate in many English speaking countries about whether, in the words of Dearing, McCartney & Taylor (2001) “poverty leads to poor outcomes or whether a third unmeasured variable causes both” (p. 1779). Evidence of this debate in Canada largely stems from interpretations of the first two to three cycles of NLSCY (National Longitudinal Study of Childhood and Youth) data Statistics Canada, 2006b) which suggested the magnitude of the effect of parent income on child development outcomes was quite small (see, for example, Blau, 1999), leading some to the conclusion that this did not merit social policy intervention (Phipps and Lethbridge, 2006, p. 7).

According to Mickelwright (2003), a common approach to poverty reduction among English speaking countries is that of the “hand up, rather than a hand out” (p. 14). He observed that the cash benefits Canada pays to families are relatively generous, but are offset by recent policies that encourage or force families off of social assistance as well as related education upgrading opportunities, and into the low-wage labour force. This practice can exacerbate poverty, particularly in the context of the growth of a low-wage economy (p. 22).³ Echoing the findings of Duncan and Brooks-Gunn (2000), Richmond and Saloojie (2005) and Williamson and Salkie (2005), Mickelwright signals the “limitations to work-based solutions to family-income poverty, underlying the role that benefits for those not employed should continue to play” (p. 23). More research is needed to determine if and how the shared political and cultural history among English-speaking countries is a factor in their high rates of child poverty and income inequality.

Why the concern in the national and international literature with the rise in child poverty rates and income inequality more generally? Why have so many OECD countries committed themselves to reducing child poverty? The answer may be found not only in the moral imperative to care for society’s most vulnerable citizens. It is also found in data that suggests that income poverty and inequality is associated with a range of negative outcomes not only for children, but for society as a whole. The next section reviews this research, with a particular emphasis on health concerns among children that have surfaced in the past decade.

³ See also, Wasserman, D. (May, 2006) *The impact of North American economic integration on children*. Ottawa: Canadian Society for Social Development, for a detailed examination of how North American economic integration has contributed to increasing economic inequality and the growth of the low wage economy.

Part Two

Poverty, Income Inequality and Child Health Outcomes

Social determinants of health: A lens for analyzing income and child health outcomes

As suggested above, there is little debate that growing up in conditions of poverty has negative effects on health, physical growth and development (Brooks-Gunn, Duncan & Rebello-Britto, 1999; Dearing, McCartney & Taylor, 2001. p. 1179). What is contested, is the combination of factors that explain this relationship. For example, many population-based studies have focused on the effects of maternal education, maternal stress, parenting styles and income on child health. For example, Willms (2002) defined SES as a combination of family income, maternal education and father's occupation. To, Guttman, Dick, Rosenfield, Parkin & Tassoudji, et al., (2004) examined NLSCY data to discern the social and environmental determinants of poor developmental attainment among pre-school children. They found that factors associated with poor development included male sex, maternal depression, maternal immigration status, and household income inadequacy (p. 648). They recommend that these indicators be used as "targets for screening and interventions" (p. 649).

*Health Canada, 2002:
"Health inequalities are
produced by the clustering
of disadvantage—in
opportunity, material
circumstance, and
behaviours related to health
across people's lives"*

However, the social determinants of health (SDOH) framework, pioneered by Canadian scholars (see for example, Raphael, 2004), suggests that low income, and more specifically, income inequality, is a key social determinant of health that is difficult to tease apart from other social determinants such as maternal education, occupation or maternal stress because, as stated by Health Canada, 2002: "Health inequalities are produced by the clustering of disadvantage—in opportunity, material circumstance, and behaviours related to health across people's lives" (p. 5).

The report of the 2002 conference *Social Determinants of Health Across the Life-Span*, which brought together 400 lead researchers in population health research in Canada, articulated this relationship in terms of the social gradient, and the extent to which income disparity harms not only those living on low incomes, but the well-being of the whole of society:

In terms of the health of populations, it is well known that disparities—the size of the gap or inequality in social and economic status between groups within a given population—greatly affect the health status of the whole. The larger the gap, the lower the health status of the overall population (Wilkinson, 1996; Wilkinson and Marmot, 1998 in Health Canada, 2002).

In addition to inequality, other social determinants of health include the quality of education and early care, housing and food security and social exclusion, including gender and race discrimination, the effects of which, in Canada, are most noticeable in the high rate of poverty among lone-parent, women-led families, new immigrant families, Aboriginal people and visible minorities (Health Canada, 2002, p. 3).

The remainder of this section reviews a selection of studies representing emerging themes in the social determinants of health research, including the relationships between income and infant health, childhood asthma and hospitalization rates, food insecurity and rates of injury among low-income children. These studies were published since 1998, and most were conducted in Canadian settings, or using Canadian data.

Income and infant health

In general, studies in the US and Canada have found that there is a much higher incidence of visits to the hospital among poor children than their more well-off peers. Seguin, Xu, Zunzunegui & Frohlich (2003) conducted one of the first studies on infant morbidity and mortality in the Canadian context. They found that infants living in households with inadequate to moderately inadequate income were more likely to be described by their mothers as in poor health, and more likely to be admitted to hospital, with the exception of infants from “very inadequate” income homes, who while reported to have health problems, were less likely to go hospital (Seguin et al., 2003, p. 7). The authors argue that family income affects infant health beyond other indicators such as maternal education, family structure, breastfeeding, maternal smoking and neo-natal health problems, with the result that “lack of material resources, although not the only factor at play, appears to be an important element in this detrimental situation for infants from poor families” (p. 5).

Maternal education levels consistently correlate with childhood health outcomes. Some have argued that this relationship surfaces because education is strongly associated with income (Phipps and Lethbridge, 2006). Mothers with higher education levels tend to earn more and are also better able to afford healthy food and safe housing for their children, as well as access necessary health information and services (Desai & Alva, 1998). Researchers and educators at times attribute the higher incidence of illness among children of low-income parents to deficits in parent’s knowledge of health issues, literacy skills, problem-solving skills, and poor health habits—factors that are often associated with low maternal education. However, in ten focus groups with 64 parents who attended parent groups in Edmonton, Alberta, Williamson and Drummond (2000) found that parents identified quite a different set of barriers to enhancing their children’s health. These were low income, inadequate health care insurance and lack of transportation (p. 126). Parents’ most frequently expressed concerns about the effect of low income was that it prevented their children from participating in sport and recreational activities and programs, an issue that links to both social exclusion, and to negative physical health outcomes, as suggested in the Active Healthy Kids Canada’s *Report Card on Physical Activity* (2006, p. 7).

Childhood asthma

Health professionals have noted that childhood asthma is on the increase in the general population. Some wonder whether higher poverty rates may be a contributing factor. Sin, Svenson, Cowie & Man found that Edmonton, Alberta children from very poor families were 23% more likely to visit hospital with asthma-related illnesses than were children from poor and non-poor families. Their longitudinal, population-based study found that in a setting of universal access to health care,

Children of poor and non-poor families had similar rates of asthma emergency visits; the very poor children, however, continued to experience an excess risk. These findings suggest that a universal health-care system can reduce, but not fully eliminate, the disparities in emergency utilization for asthma across income categories (p. 51).

Increased visits to hospital among very poor asthmatic children may indicate the critical symptoms posed by severe or persistent asthma, and the difference in resources available to very poor, vs. poor and non-poor families with respect to preventing asthma attacks. Lethbridge and Phipps (2005) used data from the NLSCY to show that while the incidence of childhood asthma is statistically higher in the Maritimes region of Canada, “children in chronic poverty show rates that are over 30% higher than the Canadian averages” (p. 21). They theorize that the association between higher poverty rates and asthma may be attributed to known pathways for asthma that correlate to poverty such as low birth-weight, and a lesser likelihood of being breastfed (see for example, Dell and To, 2001). Dales, Choi, Chen & Tang (2002) also found that low-income children had increased asthma morbidity, with the possible link being exposure to second hand smoke.

In the United States, Miller (2000) used “an average lifetime income” rather than a single income observation to study the links between income, race/ethnicity and asthma prevalence in US children. She found “higher rates of asthma among poor than non-poor preschool-aged children, even when socio-demographic and health factors were taken into account” (p. 429) and also found that poverty and Black race were overwhelmingly the most important determinants of emergency use for asthma” (p. 430). Here, the lack of a universal health care system seems to influence these figures, as poor and Black children in the US may be more reliant upon the emergency wards if they have no medical insurance and hence have limited access to prescribed medications to reduce the severity of asthma, and to education on methods of prevention (Miller, 2000, p. 429). In contrast, Aligne, Auinger, Byrd & Weitzman (2000) found that the higher prevalence of asthma among black children in the US is not due to race or to low income per se and that all children living in an urban setting are at increased risk for asthma (p. 837). However, the findings of Miller above suggest that access to health care may reduce the severity and prevalence of asthma symptoms among urban habitants.

Food insecurity

Food banks have become a fixture in the lives of Canadians since the early 1980s (Tarasuk, 2003). The increased reliance upon charity food drives to meet the nutritional needs of families and children has come to be known as “food insecurity”. Food insecurity is distinct from hunger, in that it involves “the limited, inadequate or insecure access of individuals and households to sufficient, safe, nutritious, personally acceptable food to meet their dietary requirements for a healthy and productive life” (Tarasuk, 2003, p. 709). According to the *National Population Health Survey*, households that reported their main source of income to be social assistance were three times more likely than other households to report food insecurity (Statistics Canada, 2000; Tarasuk, 2003, p. 709). The Dietitians of Canada 2006 report, *The Cost of Eating in BC* shows that “a family on social assistance or on minimum wage cannot afford both housing and food” (Dietitians of Canada, 2006, p. 5.) According to the report, in 2004, “the monthly cost of feeding a family of four, two parents and two children, is roughly \$630. For a low-income family (living on \$25,000 a year or less in BC), this means 29% of their income would need to be

[N]ot only hunger, but also food insecurity, with its attendant stresses and fluctuating access to vital micro and macro-nutrients, is associated with poor health among infants and toddlers, including illness severe enough to require hospitalization.

spent on food. For families on social assistance, 42% of their income would need to be spent on food” (p. 5). The report concludes that in order to feed themselves, families need to reduce the quantity and quality of food they purchase; they eat fewer fresh vegetables and fruit, rely upon food banks and live in unsafe and substandard housing (2006, p. 5).

What are the implications of food insecurity for children’s development outcomes? This is a relatively new topic of inquiry. While knowledge of the consequences of nutritional deficiencies for children’s growth and development has expanded, much less is known about the impact of food insecurity, and its related stresses, upon child health and development. The majority of relevant studies have been conducted in the United States, particularly since the development of the Food Insecurity Measure in 1999. This measure has produced several studies in the US that explore the association between child development and food insecurity from a variety of perspectives.

Cook, Frank, Berkowitz, Black, Casey, et al., (2004) examined whether household food insecurity is associated with adverse health outcomes in children under three years of age. They interviewed caregivers of 11,539 children ages three and under, at hospital clinics and emergency departments in central cities in the United States. In this sample, 21.4% of households were food insecure, and 6.8% experienced persistent hunger. The study found that “food-insecure children were nearly twice as likely to be in "fair or poor" health and the odds of being hospitalized since birth were almost a third larger than food-secure children” (Cook, et al., 2004, p. 1437). They also found that food insecurity is associated with adverse health outcomes in young children “even when it does not involve reductions in the quantity of food intake sufficient to involve measurable hunger” (ibid., p. 1437). This suggests that not only hunger, but also food insecurity, with its attendant stresses and fluctuating access to vital micro and macronutrients, is associated with poor health among infants and toddlers, including illness severe enough to require hospitalization.

Studies exploring food insecurity (sometimes referred to as “food insufficiency”) for school-age children tend to focus on the impact on schooling outcomes. Alaimo, Olson & Frongillo (2001) examined the relationship between insufficient food and academic outcomes for children 6-11. They found that “after adjusting for confounding variables, 6- to 11-year-old food-insufficient children had significantly lower arithmetic scores and were more likely to have repeated a grade, have seen a psychologist, and have had difficulty getting along with other children” (Alaimo, et al, 2001, p. 45). Similar findings were obtained in other longitudinal studies on the relationship between food security and academic and social outcomes. Jyoti, Frongillo & Jones (2005), analysed data from the 21,000 children in the United States’ Early Childhood Longitudinal Study-Kindergarten Cohort, who entered Kindergarten in 1998, and were followed to Grade Three. They claim their study, “provides the strongest empirical evidence to date that food insecurity is linked to specific developmental consequences for children and that these consequences may be both nutritional and non-nutritional” (p. 2831). This suggests that food

insecurity is a risk factor that should be considered along with other known risks to positive child development, though this is as yet uncommon in most policy research.

Noting that some studies have shown only a weak relationship between poor nutrition and socio-economic status, when children are the focus of the study, McIntyre, Glanville, Raine, Dayle, Anderson & Battaglia (2003) wondered if this was because mothers modify their own food intake to ensure their children get optimal nutrition (p. 2). They explored this hypothesis in a study of 141 lone mothers and their children (n = 331) living in Atlantic Canada. The authors found that while children in the sample were consistently deficient in folate and zinc (associated with brain development), "...the dietary intake of children for each constituent nutrient was consistently and significantly better than that of the mothers at each point in time during the month" (McIntyre et al, 2003, p. 4). Energy intake was low for both mothers and children in T1 (a given time in the monthly food intake cycle), and remained low for mothers for the rest of the month. However, children's decrease in energy intake was less steep even though their consumption of essential nutrients of thiamin, riboflavin, vitamin A, phosphorous and zinc was low until T3, "corresponding to a mid-month income transfer such as the Child Tax Benefit or Goods and Services Tax Credit" (p. 5). The mid-month income transfer resulted in improved nutritional intake for riboflavin, calcium, vitamins A and C for children only.

[S]ingle women raising children on income assistance or in low-wage employment consistently reduced their own food intake to feed their children.

The authors concede that under-reporting of food consumption is a factor in self-reported dietary intake. They sought to limit the impact of this on their data by interviewing children and mothers at the same time so that assessment of food intake was the product of a family consensus, with cross-checks. They conclude that, "mothers compromise their own diets to feed their children" (p. 7). Thus, while the diets of low-income children in their sample were adequate, and mothers' desire to "feed the family" are in keeping with gender roles and expectations, the impact on maternal health of chronic food insecurity has far-reaching implications for women's reproductive and mental health and children's well being. The Vibrant Surrey Gender and Poverty Analysis Project in Surrey, BC, similarly found that single women raising children on income assistance or in low-wage employment consistently reduced their own food intake to feed their children; this entails eating more processed food and carbohydrates, coping with fatigue, stress and health problems that result from diets low in fresh fruits and vegetables and proteins (Hara, 2005, p. 13). These findings resonate with the conclusions of Cooke et al. (2004) cited above, that food insecurity leads to negative consequences to children's development even when they are not chronically "hungry".

Child overweight and obesity

Research suggests that food insecurity correlates not only to hunger and poor nutrition, but also to obesity (Dubois, Girard & Potvin Kent, 2006). This is believed to be in part an adaptation process to food shortages and the consumption of inexpensive, energy rich foods. Overweight and obesity among Canadian children has received increased attention in the public realm but there are as yet few studies of the prevalence or cause of the phenomenon in the scientific literature in Canada, and even fewer studies that explore overweight and obesity

among low-income children. O' Loughlin, Paradis, Meshfedjian & Gray-Donald (2000) note that in Montreal, overweight and obesity rates among low-income, ethnically diverse children and youth is increasing and is likely related to low energy expenditure (exercise). The authors note that overweight and obesity in early childhood tends to carry into youth and adulthood, with strong connections to high blood pressure, diabetes, morbidity and mortality.

Dubois, Girard & Potvin Kent (2006) explored the link between income, eating breakfast and overweight among preschoolers in Quebec. They found that almost one tenth of 1549 children between the ages of 44 and 56 months did not eat breakfast everyday. A greater proportion of children with immigrant mothers, with mothers with no high-school diploma and from low-income families (15% for income of \$39, 999 or less vs. 5-10% of those with better income) did not eat breakfast (p. 440). Not eating breakfast everyday doubled the odds of being overweight at age 4.5 years, when mothers' immigrant status, income and number of overweight/obese parents were accounted for. Although the authors suggest the study be replicated, they conclude that low socio-economic status increases the likelihood that young children do not eat breakfast, and this is associated with overweight and obesity.

In the United States, Casey, Simpson, Gossett, Bogle et al, (2006) explored the relationship between child obesity and food insecurity, in the US National Health and Nutrition Examination survey, which included measures drawn from the US Food Security Scale. The sample size of 6,345 children is one of the largest in studies of this kind. The study also included diverse socio-economic, ethnic and age groups, allowing for rich comparisons across diverse groups of children. The authors controlled for variables that may have confounded overweight and obesity with other variables associated with low socio-economic status and found that while no causal relationship could be found, food insecurity is independently associated with being "at risk for overweight status" (Casey et al, 2006, p. 1410), among many demographic categories.

Studies cited above introduce food insecurity as a risk factor with implications for children's academic outcomes. Food insecurity is a concern for educators who note that children who are not well nourished cannot learn. Indeed this complicates the relationship between low income and educational outcomes since the various ways that poverty impacts on learning includes, but is not limited to, inadequate nutrition and the stresses inherent in food insecurity. The relationship between low income and income inequality for children's school readiness, literacy and school completion rates is explored in Part Three.

Part Three

Poverty, income inequality and child education outcomes: School readiness, literacy and school completion

As discussed in Part One, several population-based studies reveal that income is most strongly linked to education outcomes, particularly in areas related to cognition and behaviour (Phipps and Lethbridge, 2006, Dearing, Macartney & Taylor, 2001). These two factors are connected under the broad concept of “school readiness”. This section reviews the links between income and children’s education in the emerging scholarship in areas of school readiness, literacy and school completion.

School readiness

Rouse, Brooks-Gunn & McLanahan (2005) observe that inequalities in educational attainment have largely been measured among school-aged children, but research is beginning to suggest that these inequalities exist before children start Kindergarten (see for example, the early development community mapping projects undertaken by Hertzman, McLean, Kohen, Dunn & Evans, 2002). “School readiness” is a term that generally denotes a set of cognitive, behavioural and social skills deemed necessary “to lay the foundations of scholastic achievement and adult success in all aspects of life” (Doherty, 1997, p. vi). In 1997, Human Resources Development Canada (HRDC) circulated five inter-related determinants of school readiness that are commonly used by population health and education scholars. These include physical well-being and appropriate motor development, emotional health and a positive approach to new experiences, age-appropriate social knowledge and competence, age-appropriate language skills; and age appropriate general knowledge and cognitive skills (Doherty, 1997, p. iii). Within this broad framework, the indicators most commonly associated with school readiness include maternal education level and maternal talk, home story book reading practices, family income, family structure, father’s occupation, neighbourhood characteristics and psycho-social factors such as parenting style and maternal mental health (Brooks-Gunn and Markham, 2005; Hertzman, McLean et al., 2002; Willms, 1999)

Most population-based studies on children’s school readiness use longitudinal data to determine which of these indicators are most reliably associated with school readiness outcomes. Studies that apply a longer-term dynamic measure of income consistently suggest that income, and income-related factors such as parent’s access to time and resources, are more significantly associated with school readiness, particularly in areas of cognition and behaviour, than are other common indicators of school readiness. As discussed in Part One, one possible reason for these findings is that these studies are better able to account for the important effect that the duration and depth of poverty has on children’s education outcomes. For example, Phipps and Lethbridge’s review of literature on incomes and child outcomes found that “...for success in school, it is clearly the longer term and two-period average of income that have the largest associations” (2006, p. 9). Indeed, maternal education may be associated with child development outcomes through its effects on family income (Mickelwright, 2003; Ricciuti, 1999).

Williamson and Salkie (2005) analysed cycle one (1994/1995) and cycle two (1998/1999) NLSCY data for relationships among families’ income source, pre-school children’s school readiness and family environment. Among children whose family income was

The lack of over-all improvement in pre-school children's school readiness between 1994 and 1999 can be attributed to the corresponding levels of income inadequacy among these families (Williamson and Salkie, 2005).

at or below the LICO, they compared children whose families received social assistance, with those who were working. They found that “both groups of children had PPVT-R scores below the standard score (100) for their age group” (p. 64), but children from working poor families had significantly higher scores than their peers who received social assistance. The authors point out that there was a 23 point difference in income adequacy between the two groups, concluding that it is perhaps not only the income source that positively affects pre-school children's school readiness skills, but also the depth of poverty that seems to matter for children's school readiness.

The authors propose that the lack of over-all improvement in pre-school children's school readiness between 1994 and 1999 can be attributed to the corresponding levels of income inadequacy among these families, in spite of the introduction of welfare-to-work policies in some jurisdictions. Indeed, they point out that working poor families were worse off in 1998/99 than they were in 1994/1995. The income of poor families remained at two-thirds of the low-income cut off, confirming the findings of reports cited elsewhere in this review (CCSD, 2006; UNICEF, 2005; First Call, 1998) that the depth of poverty and the level of income inequality in Canada increased in the 1990s, even if the numbers of families on social assistance decreased. These trends have significant negative affects on low-income pre-school children's readiness for school.

Studies that did not use population-based methods similarly found a strong relationship between income and school readiness outcomes. Barbarin, Bryant, McCandies, Burchinal, Early et al., (2006) surveyed the relationship between family and social environments of 501 children in pre-Kindergarten programs in the United States, and child competence in school readiness. They found that “parental education, household income, and material need predicted all domains of children's functioning” (p. 269), including oral language competence, behaviour and numeracy competence. They did not survey the impact of maternal talk on children's competence. The authors proposed that, “neighbourhood quality and income level may have their impact on child competence through their relation to dyadic quality and the health and the psychological well-being of the parents” (p. 273). Pan, Rowe, Singer and Snow (2005) found that maternal depression was more directly linked to poor vocabulary development in children than was the quantity of maternal talk (p. 777-778), introducing more complex associations between this variable and children's school readiness outcomes.

Neighbourhood characteristics seem to have a particularly important effect on children's school readiness, though this is a relatively new area of study. Neighbourhood-level studies apply ecological models of social organization (Bronfenbrenner, 1979) to the investigation of child development outcomes. This model regards individual outcomes and traits as nested within the dynamics of family, community, societal and political-state level influences and contexts, much like the construct of the social determinants of health. Kohen, Hertzman & Brooks-Gunn (1998) analysed NLSCY data to determine the effect of neighbourhood influences on toddler and pre-schoolers' readiness for school. They explored three areas of competence associated with school readiness, including toddlers' motor and social development, preschoolers' receptive verbal

abilities and for both groups, maternal reports of behaviour problems. They found that “neighbourhood affluence and cohesion are associated with competencies for children of both age groups” (p. 64) in the years before formal schooling.

Family characteristics such as maternal education and family income were also “significant predictors of children’s competencies associated with school readiness” (p. 65). Neighbourhood effects become more important for children’s competencies at the pre-school and school-age level, when presumably children spend more time in community settings. The study draws attention to the positive effects of flat education gradients, since neighbourhood affluence was found to benefit all children. In a later study, Hertzman, McLean, et al, found that socio-demographic characteristics that “should put children at risk” such as receiving social assistance or being led by a single parent (p. 17), do not have seem to have negative effects in more affluent neighbourhoods to the same extent they do in less affluent neighbourhoods. They explain: “In Vancouver, being a socio-demographically vulnerable child in a low development risk neighbourhood seems to be more advantageous than being a vulnerable child in a high risk neighbourhood” (Hertzman, McLean, et al., 2002, p. 17).

[T]he “greatest risk was associated with persisting and accumulating experiences of socio-economic disadvantage throughout childhood and adolescence. (Schoon, Bynner, et al., 2002)

In contrast, Willms (2003), while finding “a large and statistically significant differences among Canadian communities in the level of children’s vocabulary skills” (p. 30), nevertheless found that children from low SES households living in low SES communities, do not appear to score lower on vocabulary than children living in higher SES communities. Vocabulary scores “were not related to the amount of variation in SES within each community” (p. 31). Willms also asserts that aside from SES, factors related to children’s early vocabulary skills include the extent of storybook reading in the home, family cohesion, the degree of social support in a neighbourhood and the stability of the neighbourhood (Willms, 2003, p. 31). The somewhat different results reported for the impact of income on children’s educational outcomes may be attributed to differences in how socioeconomic status is defined and measured. Maternal education and prestige of occupation can operate as indicators of family income rather than as independent variables.

Attention to the impacts of low income on children’s early learning has raised questions about the timing and duration of poverty on children’s learning, and the effects of this for academic achievement later in life. Schoon, Bynner, Joshi, Parsons, Wiggins & Sacker (2002) investigated the long-term effects of social disadvantage on academic achievement and on subsequent attainments in adulthood. This study is particularly relevant to understanding the relationships between income and education inequality because it measures the significance of the duration and depth of disadvantage on children’s education outcomes over time. The authors followed the development trajectory of 30,000 individuals born 12 years apart using a “developmental-contextual systems model” (Schoon, Bynner, et al., 2002, p. 1467). They argued that risk factors associated with socio-economic disadvantage, including household income, could best be understood as a dynamic relationship between the developmental stage of the individual (such as early childhood or adolescence), the duration of disadvantage (with higher

risks for long-term low income) and the general socio-historical context that shapes life experiences at the cohort level. They found that the “greatest risk was associated with persisting and accumulating experiences of socioeconomic disadvantage throughout childhood and adolescence. Material conditions improved for the later-born cohort, yet pervasive social inequalities existed that affected outcomes during childhood and were consequently reflected in adult attainment” (Schoon, Bynner, et al., 2002, p. 1468). These inequalities were primarily located in academic outcomes, with the effect that people experiencing pervasive and long term socioeconomic disadvantage were more likely to experience negative academic outcomes and leave school early, with implications for long term income earnings.

Capps, Fix, Ost, Reardon-Anderson & Passel (2005) in their report on the health and well-being of immigrant children in the United States, reiterate that the high poverty rates among immigrant families negatively effect young children’s schooling outcomes for reasons similar to their native-born counterparts. In spite of the fact that more immigrant children live in two-parent households, they are often poorer than their native-born counterparts because of the relatively low participation of immigrant women in the labour market and because immigrant parents tend to earn less than their native-born parents. Capps, Fix et al., (2005) thus reported that lower education and income levels among newcomers presented risk factors for school readiness. Conversely, Beiser, Hou, Hyman & Tousignant (2002) found that although immigrant children are more likely to be poorer than their native born counterparts, they tend to be as healthy or healthier, do better in school (p. 2) and experience fewer mental health problems. Moreover, immigrant selection processes are such that parents are likely to be well educated, skilled in a profession and healthy, providing important social capital to their children even if this does not translate into higher earnings.

The authors hypothesized that since short-term poverty is part of the immigrant experience, children in their sample may be protected from the negative effects of deep and long-term poverty. Their study illustrates how poverty can be invested with different meanings according to factors associated with social exclusion, including the length and duration of low income, access to English language resources and early learning programs and the differential effects of racism. Indeed, not all immigrant children fare well in school, as Toohey and Derwing (2006) suggest (see below). The nature of the trajectory families follow from their country of origin to Canada seems to matter greatly.

Family structure is often considered an important variable in children’s school readiness studies. Ricciuti (1999), in his review and analysis of the relationship between single parenthood and school readiness, found that this variable did not have an effect independent of income: “The findings of this study indicated quite conclusively that single parenthood was essentially unrelated to school readiness and achievement in 6- and 7-year-old children, despite the lower income levels of the single-parent families” (p. 459). He also found that even though single parent families were more likely to have low incomes, their family structure did not adversely affect the child over and above the negative effects of living on a low income. He hypothesized that these findings may be attributed to the fact that most studies exploring the relationship between family structure and children’s education outcomes tend to focus on school completion and behaviour for older children and adolescents where family structure may have a larger effect. Ricciuti also notes that variables such as maternal education and parenting ability were similar in two-parent and single-parent families.

His research suggests that it is not “single parent status” in itself, but rather the interaction between single parent status and income that is most strongly associated with school readiness outcomes. With respect to immigrant children, Hertzman, McLean et al., (2002) propose that it is not immigrant status itself that is a risk factor for school readiness, but rather the interaction between immigrant status and socioeconomic status that should be highlighted (2002, p. 14). A promising area for further research is how these risk factors associated with poor school readiness outcomes may be reinterpreted through the lens of social inclusion/exclusion processes.

Literacy

International education research suggests that “[L]iteracy is a critical tool for the mastery of all other subjects and one of the best predictors of longer-term learning achievement” (Guttman, 2005, p. 51). As described above, children’s receptive oral language at Kindergarten is predictive of literacy knowledge and learning in Kindergarten and Grade One. The importance of early literacy knowledge for children’s academic outcomes was partly captured in the review of school readiness literature above. While these population-based studies provide valuable insights into the relationships between income and child literacy outcomes, they are limited to analysing relationships among variables that are possible to measure, and for which measurements were done. However, literacy practices are often described as socially situated, varying considerably from one setting to another according to the specific values and uses for print in a given family or community (Barton, Hamilton & Ivanik, 2002). These socially structured practices are difficult to capture in standardized measurements used in large data sets.

For example, inequalities in access to quality print materials for children in low-income and/or rural or small communities, is a factor that has been associated with children’s early literacy knowledge (Purcell-Gates, 1995), but this is not measured in the NLSCY in Canada or its counterpart in the United States. A print survey conducted in four United States’ communities, (2001) found “striking differences between neighbourhoods of differing income in access to print (books, signs, labels, logos, public places conducive to reading, and access to books in local preschools, school libraries, and public library branches)” (p. 8). They found that by virtue of the services, shops and recreational opportunities available in their neighbourhood, middle-income children had a large variety of resources to choose from, and were exposed to much more print before formal schooling than were low-income children, who “rely on public institutions which provide unequal resources across communities” (Neuman and Celano, 2001, p. 21).

Children become familiar with the conventions of print through access to literacy materials and opportunities to read, and to be read to, from an early age. However, access and

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opportunity are not evenly distributed among young children. While D'Anguilla, Siegel & Hertzman (2004) found that a systematic primary-school level literacy program reduced the disparity in school readiness outcomes of low-income children, the long-term impact of this intervention for school completion and income earnings is as yet unknown. Indeed, conditions outside of school may continue to impact on children's learning, such as health problems and food insecurity discussed above, or the differential access and opportunity for children to read and write outside of school. Allington and McGill-Franzen (2003) call attention to the "summer reading gap" by which low-income children are more likely to lose the skills they gained during the school year, falling behind in their reading skills during the summer months because they have more restricted access to quality summer camps and other programs, and hence fewer opportunities to engage with a wide variety of print materials.

Academic success and school completion

With regard to academic success among school aged children, Plug and Vijverberg (2005) explored whether the relationship between income and school attainment was significant among a sample of adopted children, where no genetic factors are present to account for children's academic attainment. They found that family income still has a significant and independent effect (p. 879). Canadian researchers have documented the strong correlation between income and school achievement and school completion rates, noting the role that education itself plays in minimizing or maximizing the social gradient with respect to schooling outcomes.

For example, Brownell, Roos & Fransoo (2005) argue that a more accurate understanding of the impact of income on educational outcomes requires the analysis of standardized test results at the population level, rather than at the school level. In other words, data should capture test results on the basis of where children live, rather than on the basis of where they go to school (p. 10), as is currently common in Canadian jurisdictions. In applying this principle, they found that the education gradient was much steeper in Manitoba than originally believed. For example, according to a school-level analysis, 92% of students living in high SES areas of Winnipeg passed the Grade Twelve language arts assessments, and 75% passed among children living in low SES areas. However, when applying a population-level measurement (taking into consideration who *should* have written the tests), they found that 77% of youths in high SES areas wrote and passed the test, compared to only 27% of youths living in low SES areas. Moreover, 36% of youths from low SES areas were at least one year behind, (grade 11 or lower) and almost 20% had withdrawn from school altogether (p. 11). In all, "only 33% of those living in low-SES areas passed the test on schedule, compared to 69% of those in high SES areas" (Brownell, Roos & Fransoo, 2005, p. 15).

The authors point out that these figures are more disturbing in light of their analysis that high and low SES children did not differ significantly at birth in relation to their birth-weight and Apgar scores. This study suggests that children and youth from low SES areas of Manitoba are clearly at higher risk for poor educational outcomes than their more wealthy counterparts. As the authors suggest, this raises questions about the social gradient in education in other jurisdictions, and the role of schools and broader social policies in directing resources to interrupt this cycle of disadvantage.

As indicated elsewhere in this review, how SES and SES-related variables are defined and measured shapes our interpretation of poverty levels and the social gradient in Canada. This has proven true for school completion rates among immigrant youth. Dhawan-Biswal and Gluszyinski (2006) report preliminary study findings that suggest immigrant youth are less likely to be school leavers than native-born youth. This conclusion is shared in a HRDC study (1995). However, Gunderson (2004) and Toohey and Derwing (2006) re-analyse demographic data and complicate this conclusion, suggesting that while immigrant children from prosperous countries are generally succeeding, children and youth who come as refugees or immigrants from low income countries are either not completing high school, are disappearing from academic subjects or doing very poorly (Gunderson (2004). This is a consequence of both rising numbers of such immigrants, and diminishing ESL supports at the school-level. Toohey and Derwing (2006) analysed school course load and completion records in two west-side and two east-side schools in Vancouver. They found that an average of 60% of ESL students graduated from secondary school, ranging as high as 81% in some independent class immigration categories, (allowing for the possibility that these groups could better afford tutors) and as low as 38% in sponsored or refugee class immigration categories. In particular, “graduation rates for Tagalog, Vietnamese, Spanish and Indo-Punjabi speaking students were especially dismal” (Toohey and Derwing, 2006, p. 13).

[F]actors related to social exclusion, such as income, language and country of origin, shape the learning trajectories of immigrant children and youth, contributing to the reproduction of social disadvantage and inequality.

These findings suggest that factors related to social exclusion, such as income, language and country of origin, shape the learning trajectories of immigrant children and youth, contributing to the reproduction of social disadvantage and inequality that is in evidence in the studies reviewed above.

Part Four Children in Care

Research investigating children's pathways into government care in the context of the social determinants of health framework has also proven to be a fruitful area of inquiry, illustrating how inadequate income, unstable housing and processes of intergenerational social exclusion increases the likelihood that children will enter into government care.

The developmental outcomes of children in care constitute a relatively new area of inquiry in Canada. Data on the emotional, physical and educational well-being of these children and youth, and their longer term outcomes are fragmented and inconsistent due to the diverse policies, practices and record keeping strategies adopted from province to province (HRDC, May, 2000, p. 5). Rutman, Hubberstey, Feduniw & Brown (2006) state that, "Canadian longitudinal research on outcomes for youth from care is essentially non-existent and has been recognized as a major knowledge gap by researchers, practitioners and policy makers alike" (p. 5).

The ambiguous status of Aboriginal children on and off reserve presents a challenge to those wishing to track how many Aboriginal children are in care, the rate at which they are taken into care, and their experiences while in care. As a result, there are no reliable statistics on the extent of child abuse and neglect in Canada, nor on the actual amount of Aboriginal children in care (Farris-Manning and Zandstra, 2003). However, the consensus among scholars and concerned groups, based on analyses of available government reports, is that since the late 1990s the amount of children and youth in temporary and long-term care has increased, particularly among Aboriginal children. In spite of the research gaps, the development of new child development measures designed for children in care has allowed for small-scale population-based studies and surveys that are increasingly reliable (see for example, the "Looking after Children" measures (Ward, 1995; Trocmé, 2003). Research

investigating children's pathways into government care in the context of the social determinants of health framework has also proven to be a fruitful area of inquiry, illustrating how inadequate income, unstable housing and processes of intergenerational social exclusion increases the likelihood that children will enter into government care. This section describes some of these pathways into government care for children in Canada. It then considers literature related to their educational and health outcomes and issues of emerging concern.

Pathways into government care in Canada

In an analysis of annual reports from provincial and territorial ministries of child and family services, Trocmé, Knoke & Blackstock (2004) estimate that for the years 2000-2002, 76,000 children and youth were living in out-of-home care in Canada. Farris-Manning and Zandstra (2003) further observe that, "from best guesses based on provincial statistics about 40% of the children in the care of the provinces/territories are Aboriginal children with the majority of them being First Nations (status and non status)" (p. 5). Trocmé et al (2004) similarly found that "[A]n estimated 40 percent" (p. 578) of children in care are Aboriginal. For

the four provinces for which data was available in 2003, these rates were as high as 68% in Manitoba and as low as 38% in Alberta. British Columbia reported 10,450 children in care in 2002, 40% whom were Aboriginal (Farris-Manning and Zandstra, 2003, p. 5). In contrast, the Joint Special Report on the Health and Well-Being of Children in Care in British Columbia, written by Jane Morley (2006), reported 9,080 children in care in that province in 2005, 49% of whom were Aboriginal (p. viii).

While the numbers of children entering government care have on average increased for all groups across Canada, (Farris-Manning and Zandstra, 2003; Morley, 2006), this is particularly so for Aboriginal children, though estimates vary widely. Indian and Northern Affairs Canada (INAC) reported in 2002 an increase in the number of on-reserve children in care from 4% in 1995 to 6% in 2002, with a particularly steep increase between 1998 to 2002 (INAC, 2002, p. 41). Farris-Manning and Zandstra (2003, p. 5) note that this information “does not include any data from the North West Territories and Nunavut, any Self-Government First Nations, or First Nations which were not administered under a Child and Family Services Agreement” (see also, INAC, 2002, p. 41). Trocmé et al (2004), report that “the number of First Nations children on reserve placed in out-of-home care increased by 71.5 per cent between 1995 and 2001” (p. 578). They claim that this represents a rate that surpasses that witnessed during the height of the residential schooling movement (p. 577), the official Canadian Government policy of assimilation toward Aboriginal peoples, in effect from the 1950s to the 1970s.

[T]he kinds of supports offered to families are geared more toward enhancing parenting skills than to addressing financial and material needs (Rutman, Strega et al., 2002).

Canadian children and youth who find themselves in temporary or permanent foster care share much in common. In their study of the educational attainment of children in care in British Columbia, Mitic and Rimer (2002) describe the profile of families whose children are most likely to enter government care:

65% were from families on income assistance at time of admission and 60% were from single parent families. 40% were in care because they had been physically, emotionally or sexually abused, another 40% because their parents abandoned them or were unable or unwilling to care for them and 20% because the children had emotional, physical or developmental needs their parents couldn't meet. (Mitic and Rimer, 2002, p. 398)

Low income has become a firmer pathway into government care. According to Rutman, Strega, Callahan & Dominelli (2002), this may be attributed in part to changes in risk assessment protocols in the early 2000s dictating that “families are able to access supportive services only if their situation is assessed as a child protection risk” (p. 150). This results in more children either entering care or getting involved with social workers in order to access services. Moreover, the kinds of supports offered to families are geared more toward enhancing parenting skills than to addressing financial and material needs (Rutman, Strega et al., 2002, p. 153).

The over-representation of Aboriginal children in care reflects the “clusters of disadvantage” (Trocmé et al, 2004, p. 580) experienced by Aboriginal peoples in Canada more generally. Trocmé et al., (2004) found in their analysis of casework reports of suspected child abuse or neglect: “Higher rates of maltreatment substantiation and out-of-home placement

appear to be related to the disproportionate presence of risk factors among Aboriginal families” (p. 596). They suggest that these risk factors can be traced to the history of assimilation policies that resulted in a generation of Aboriginal adults who had never been parented and lacked the role models to parent their own children.

Taken together, these studies suggest that patterns of social exclusion, embedded in the “processes and societal institutions that create unequal outcomes” (Richmond and Saloojie, 2005, p. 2) constitute pathways into government care. This is true not only for Aboriginal children, but also for children with disabilities, including Fetal Alcohol Spectrum Disorder, chronic illnesses and physical disabilities. It is widely reported in the literature that children entering into government care tend to have more emotional, cognitive and physical challenges than their peers (Leslie, Gordon & Lambros, 2005; Simms, Dubowitz & Szilagyi, 2000). Indeed, more than 60% of children in care have some form of disability (Canadian Association for Community Living, 2003). This constitutes both an effect of the cycles of disadvantage they experience, as well as a risk factor, when families feel unable to cope with the demands of raising a ‘special needs’ child (Mitic and Rimer, 2002). Farris-Manning and Zandstra (2003) suggest, “Canadian research cites prevalence estimates of emotional and behavioural problems of children in foster care rising from 30-40 per cent in the 1970s and 1980s to 48-80% in the mid-1990s” (p. 3). Moreover, these studies suggest that existing developmental problems and cycles of disadvantage are exacerbated and reproduced once children are in care.

Outcomes of children in care

Flynn and Biro (1998) carried out one of the first studies to use the “Looking After Children” measures (1995) to document the outcomes of children in government care. The authors compared developmental outcomes of 43 children in care with those of a sample of 1,600 children from the National Longitudinal Survey of Children and Youth (Statistics Canada, 1995). Within the limits of its small sample size, their results suggest that “on some indicators of educational success, the in-care sample of children were seriously disadvantaged, relative to the Canadian not-in-care sample of 11-year olds: 41% had repeated a grade in school and 43% were currently receiving special education” (p. 230). Children in care had significantly higher (negative) scores on stress, hyperactivity, conduct disorder and physical aggression (*ibid.*, p. 232). However, for other indicators such as identity and levels of social isolation, there was little difference between the two groups.

In a more recent study, Mitic and Rimer (2002) assessed the academic gap between children in care, and children not in care in British Columbia. Comparing results gleaned from the Foundational Skills Assessment (FSA), which is a standardized test administered to children in grades four, seven and ten in British Columbia, they found that 40% of children in care scored below average in reading and writing, compared to 19% among their peers not in care. 49.7% of children in care scored below average in numeracy compared to 20% among their peers not in care. “With few exceptions, reading, writing and numeracy scores were lowest among Aboriginal children in care” (p. 403). The authors speculate that these poor educational outcomes may be attributed to children’s experiences of abuse before they came into care, and to poverty, noting that, “poor children are over-represented in the care system” (p. 404). Of concern, however, is why children’s educational outcomes do not seem to improve once they

are in care. Though falling outside the scope of this review, several reports speculate on the reasons for this, contributing a policy perspective to this under-researched topic.⁴

Debate about the causes for the generally poor developmental outcomes of children in care is also present in the health literature. Morley's (2006) report on the health and well-being of children in care in British Columbia found that children in care are diagnosed with health conditions at a rate "1.2 to 1.4 times higher than children in the general population" (Morley, 2006, p. viii), and 65% of children in care were diagnosed with mental health disorders—four times the rate for children not in care" (ibid., p. viii). Compared with their peers not in care, children in continuing care were also more likely to be prescribed medication on a long-term basis, particularly for mental health disorders, and be admitted to hospital more frequently and for longer periods.

*Many children leaving
government care in
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Children in continuing care were more likely to suffer from chronic respiratory illness, from digestive disorders related to dentistry problems, and to experience injury and poisoning. While poisoning is very rare among children in the general population, among children in care it was the nineteenth most prevalent reason for admission to hospital. Injury rates peaked at age one or two, declined and then increased again at about age eight and into the teen years (Morley, 2006, p. 37). The difference in hospitalization rates for children in continuing care and those not in care became more pronounced for children aged 12 and up (ibid., p. 38), reflecting data that show that youth in care were more likely to be involved in assaults and motor vehicle accidents. Aboriginal children and children from the Northern regions of British Columbia were also more likely to go into care. Children in continuing care were four times more likely to become pregnant.

Of particular concern are children who die while in government care. Morley notes that mortality rates are declining for all children, and the gap between children in care and children in the general population are narrowing, although there was an increase in deaths of children in care between 2000 and 2003. Between 1986 and 2005, children in care died of natural causes at a rate four times higher than children in the general population, and died of external causes at a rate three times higher (Morley, 2006, p. 53).

Many children leaving government care in Canada transition to social assistance and a new cycle of poverty. In their review of international literature on the outcomes of youth leaving care, the *National Youth in Care Network* (NYICN, March, 2006) found that:

Compared to their peers, youth leaving care are more likely to leave school before completing their secondary education, become a parent at a young age, be dependent on social assistance, be unemployed or under-employed, be incarcerated/involved with the criminal justice system, experience homelessness, have mental health problems and be at higher risk for substance abuse problems (NYICN, March, 2006).

⁴ See for example Farris-Manning and Zaendra's (2003) discussion on the need to support foster parents through adequate income, education, ongoing support, respite care and connections to community resources, as well as to maintain and increase supports for special needs children in the school system.

This situation is exacerbated because many Canadian provinces cease to assume fiduciary responsibilities for children when they turn sixteen, in spite of the UN Convention on the Rights of the Child that defines a “child” up to the age of eighteen (United Nations, 1989). However, the quality and type of care children and youth receive can positively influence outcomes. Farris-Manning and Zandstra’s review of the literature on child and youth in care found that youth in foster homes did better academically than children in group homes and youth who received treatment for mental health issues while in foster care “had a significantly greater drop in criminal activity (50%)” than youth in residential group care (p. 3).

Injuries

The leading cause of death among children and youth in Canada is related to preventable injury (Birken, Parkin, To & Macarthur, 2006). While the rate of death from unintentional injury declined by 81% in Canada between the years 1971 to 1998 across all SES quintiles, Birken, Parkin et al. report that for each income quintile, the risk of unintentional injury increased by 12% (2006, p. 868). A limitation of this study within the scope of this review is that SES is measured according to indicators of women’s education levels, male unemployment and home ownership rather than income. Nevertheless, the trend in inequities in injury rates is important to note. The rising numbers of children in care in Canada, and of Aboriginal children more specifically, signals a distressing shift in the quality of life for children. However, the absence of reliable measures of the extent of the problem, contributes in part, to a lack of concerted action to address it.

Conclusions

The main conclusions of this review are summarized as follows:

1. Recent population-based research suggests that static measures of income do not provide adequate information to determine the nature of the relationship between income and child development outcomes. In contrast, studies that measure family income over extended periods of time and include changes in income and the depth of income inequality in their models and analysis have found that income emerges as the variable most strongly associated with child development outcomes, particularly in cognitive development, behaviour and educational attainment.
2. Using these more complex income measures reveals that the effect of low income on child development is stronger the longer children live in poverty. Moreover, the younger the child, the larger the effect on his/her development of changes in family income. The effect of an increase in income has a larger positive effect on cognition and behaviour outcomes for low-income children than for more well off children. In other words, income matters more for younger children, and children with less.
3. Recent statistics suggest that 18% of Canadian children live below the LICO and there is an increase in income inequality between the richest and poorest families (CCSD, 2006). Canada ranks 19 out of 24 of the wealthiest countries in terms of its child poverty rate. It was one of the only countries that did not show substantial improvement in its child poverty rate in the 1990s and early 2000s, in spite of growing economic prosperity during this period.
4. The impact of income poverty on child health outcomes is well documented. More recently, scholars are exploring the connections between income poverty and infant health, finding that infants from low-income homes are more likely to be hospitalized more than once and experience general poor health. Lack of material resources emerged as a stronger correlate than maternal education or health behaviours in explaining this relationship, although maternal education is often strongly associated with family income.
5. While much research cites low maternal education or lack of knowledge about healthy behaviours as a factor leading to children's poor health, low-income Canadian mothers cite the lack of material resources, lack of transportation and inadequate health care coverage as the main barriers to supporting their children's health. In particular, many feel the lack of resources to allow their children to participate in physical recreation and activities is a significant barrier to their children's physical and emotional health.
6. The implication of food insecurity for children's early development is a topic of growing concern among health professionals and educators. Food insecurity refers not only to the state of hunger, but to inadequate access to safe, sufficient and nutritious foods necessary to meet dietary requirements (Tarasuk, 2003). More families in Canada, particularly single mothers with children, experience food insecurity. Fluctuating levels

Thus far, Canadian policy makers have left it up to families to negotiate the impact of the changing economy on their child raising work.

of core nutrients, over-reliance on processed foods and carbohydrates, and the stress associated with accessing food have direct consequences for children's cognition, behaviour, obesity levels and overall health. Moreover, studies are suggesting that mothers regularly limit their own food intake or transfer core nutrient foods to their children to mitigate these negative effects, with consequences for women's reproductive and mental health in particular.

7. Children's early literacy and school readiness skills are strongly associated with cognition, vocabulary and behaviour. These are also outcomes most strongly affected by low income, and more specifically, the depth and duration of poverty. For children to develop early literacy and school readiness skills they also require access to diverse print materials and to quality learning opportunities. However, these forms of access and opportunity are not evenly distributed across neighbourhoods, with implications for pre-school and older children's development in particular.
8. Recent studies on school completion rates in Canada suggest a wide gap in the success of immigrant children that corresponds to their immigrant status, language and family income. Refugee children and children of parents who immigrated under the "skilled workers" categories are more likely to drop out of courses required for college or university entry, get low grades, and/or drop out of school entirely.
9. Low-income children are more likely to live in lone parent, female led families, have a disability, live in a rural or isolated community and/or be from an Aboriginal background. These are all pathways into government care. Once children are in care, these patterns of disadvantage continue to operate, as evidenced in the poor educational outcomes of children in care and the high incidence of poverty among youth transitioning out of government care and into the community as they turn nineteen.

Implications for policy and further research

International studies suggest that one possible reason for the persistent and deepening levels of poverty among Canadian children is that social policy has not sufficiently kept pace with social change. According to UNICEF (2005), effective poverty reduction requires recognition of the interdependence of family life, the labour market, and state policy. Changing gender roles, changing family caregiving needs and labour market trends such as the growth of part-time, contract and low-wage/low-benefit employment, as well as the large-scale participation of women in the labour market, require active and supportive policy responses. Thus far, Canadian policy makers have left it up to families to negotiate the impact of the changing economy on their child raising work. The studies reviewed above suggest the negative effects of this approach for children and for society as a whole.

This review did not attend to the many promising poverty-reduction strategies and innovations that have emerged from within marginalized groups. Mothers living on low incomes have developed insights into the policy mix required to raise children that are

adequately nourished, ready for school and included in the social and recreational activities of their peers. Youth in transition out of government care articulate their need for financial support and mentorship. Networks of mutuality and support such as community kitchens, food buying clubs, community gardens and food retrieval and distribution projects provide glimpses into a food security policy that could ensure equitable distribution of nutritious food to all families. A country-wide effort to systematically reduce child poverty could include and build upon this and other work and integrate it into population-based research that measures the success of these efforts.

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