



Child and Youth Health and Well-Being Indicators Project:
Appendix H—Social Relationships Evidence Review

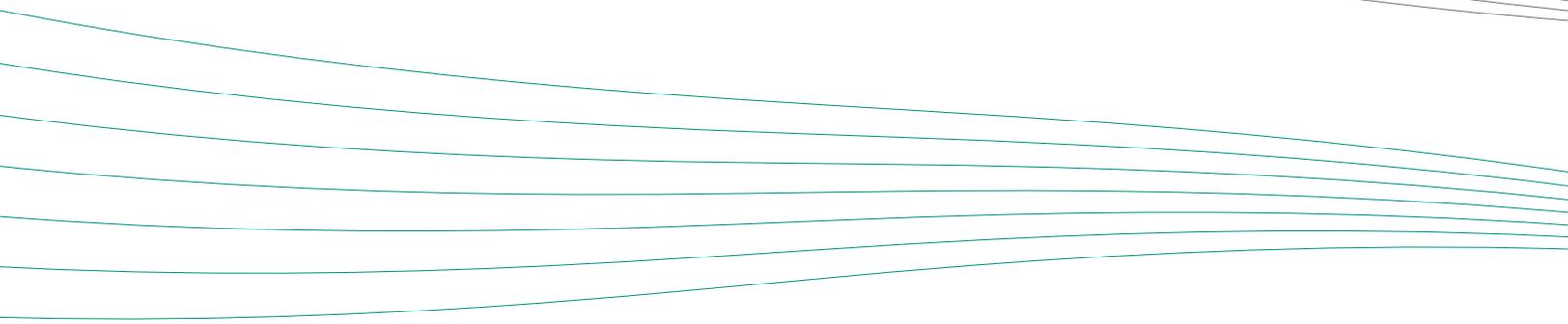
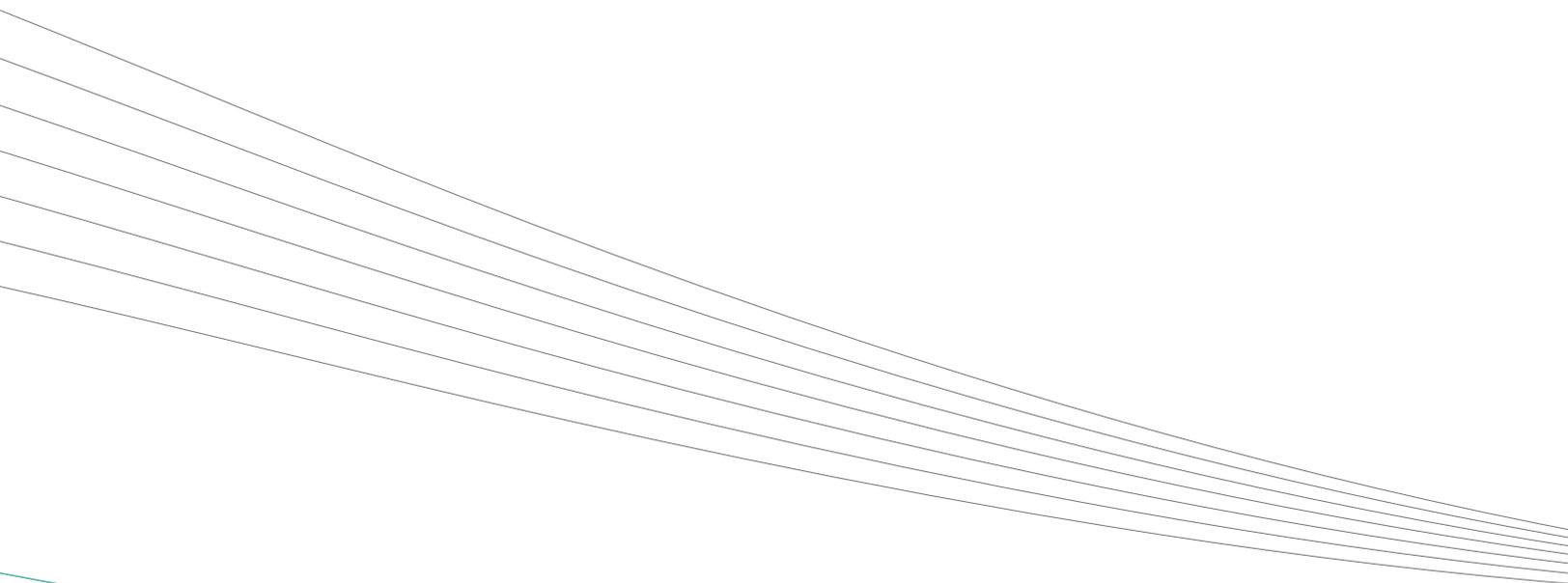


Office of the
Provincial Health Officer



Canadian Institute
for Health Information

Institut canadien
d'information sur la santé



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Indicators Project: Appendix H—
Social Relationships Evidence Review

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INTRODUCTION

The purpose of this document is to review the current evidence related to social relationships and child health and well-being. Using a systematic review process, the evidence associated with child health and well-being are presented under the following themes: social connections, child welfare, safety, and youth justice. A systematic review is conducted on each potential indicator, where current (2000-2010) meta-analyses, systematic reviews and high quality research studies are explored for relevance to child health and well-being. Following the presentation of the scientific research, each concept is further evaluated for its applicability as a child health indicator by examining the estimated prevalence among BC children, the significance/impact on health and well-being, the degree that public policy and/or interventions can be influential change agents and the existence and validity of information available for tracking purposes.

METHODOLOGY

For each concept in the Social Relationships Domain, a systematic review was conducted according to the *Systematic Review Protocol for Assessing Concepts and Indicators for Child Health and Well-being*, developed by H. Kruger and Associates, September 15, 2010.

DATA SOURCES AND SEARCH CRITERIA

For each potential indicator or concept, relevant subject keywords were identified and then a search for systematic reviews, meta-analyses, and research studies were conducted. Search locations included: electronic databases (see Table below for details) and Google Scholar. If relevant articles were not found, additional searches were conducted using Web of Science, Science Direct, and hand searching bibliographies of relevant papers.

All searches included the following keywords: Child OR Adolescent AND Health OR Outcomes AND Systematic review OR Meta-analysis OR Randomized Control Trial OR Controlled Quasi-experimental. As well, all searches included the following limits: Scholarly (Peer Reviewed) Journals; Language: English; Year of Publication: 2000-2010; Population Group: Human (0-19 years).

TABLE OF ELECTRONIC DATABASES

Academic Search Complete

Academic Search Complete is the world's most valuable and comprehensive scholarly, multi-disciplinary full-text database, with more than 7,900 full-text periodicals, including more than 6,800 peer-reviewed journals. In addition to full text, this database offers indexing and abstracts for more than 11,900 journals and a total of more than 12,000 publications including monographs, reports, conference proceedings, etc. The database features PDF

content going back as far as 1887, with the majority of full text titles in native (searchable) PDF format. Searchable cited references are provided for more than 1,400 journals.

Biomedical Reference Collection: Comprehensive

Designed for doctors, research scientists, students, clinical specialists and managers, this database provides nearly 900 full text journals, including nearly 850 peer-reviewed publications, covering virtually all areas of medical study. Journals available in full text in *Biomedical Reference Collection: Comprehensive Edition* are indexed in *MEDLINE*.

CINAHL with Full Text

CINAHL with Full Text is the world's most comprehensive source of full text for nursing & allied health journals, providing full text for more than 600 journals indexed in *CINAHL*. This authoritative file contains full text for many of the most used journals in the *CINAHL* index - with no embargo. Full-text coverage dates back to 1981.

Family & Society Studies Worldwide

Family & Society Studies Worldwide, produced by NISC, is a core resource providing the most comprehensive coverage of research, policy, and practice literature in the fields of Family Science, Human Ecology, Human Development, and Social Welfare. FSSW is an anthology of four database files providing access to over 1,306,000 records. Coverage spans from 1970 to the present.

Humanities International Index

Humanities International Index is a comprehensive database covering journals, books and other important reference sources in the humanities. Produced by Whitston Publishing (an imprint of EBSCO Publishing), *Humanities International Index* provides cover-to-cover indexing and abstracts for more than 2,200 journals and contains more than 2.80 million records.

MEDLINE with Full Text

MEDLINE with Full Text is the world's most comprehensive source of full text for medical journals, providing full text for more than 1,450 journals indexed in *MEDLINE*. Of those, more than 1,430 have cover-to-cover indexing in *MEDLINE*, and of those, 553 are not found with full text in any version of *Academic Search*, *Health Source* or *Biomedical Reference Collection*.

PsycARTICLES

PsycARTICLES, from the American Psychological Association (APA), is a definitive source of full-text, peer-reviewed scholarly and scientific articles in psychology. The database contains approximately 150,000 articles from over 70

journals published by the APA, and its imprint the Educational Publishing Foundation (EPF), and from allied organizations including the Canadian Psychology Association and Hogrefe Publishing Group.

PsycEXTRA

PsycEXTRA, produced by the American Psychological Association (APA), is a bibliographic and full-text companion to the scholarly *PsycINFO* database. The document types included in *PsycEXTRA* consist of technical, annual and government reports, conference papers, newsletters, magazines, newspapers, consumer brochures and more. It contains nearly 200,000 records that are not indexed in any other APA database.

PsycINFO

The *PsycINFO*, database, American Psychological Association's (APA) renowned resource for abstracts of scholarly journal articles, book chapters, books, and dissertations, is the largest resource devoted to peer-reviewed literature in behavioral science and mental health. It contains approximately 3 million citations and summaries dating as far back as the 1600s with DOIs for over 1.4 million records. Journal coverage, which spans from the 1800s to present, includes international material selected from around 2,400 periodicals in dozens of languages.

Social Work Abstracts

Social Works Abstracts offers extensive coverage of more than 450 social work and human services journals dating back to 1965. Produced by the National Association of Social Workers (NASW), the database provides citations and abstracts dealing with all aspects of the social work field, including theory and practice, areas of service and social issues and problems.

PROCESS FOR ARTICLE ABSTRACTION

Two reviewers completed all primary and preliminary reviews independently. Disagreements between reviewers were resolved on a case by case basis through discussion. For the **preliminary exclusion**, articles were scanned by title. Articles that did not appear to address the association between the concept and child health or outcomes were excluded. For the **primary exclusion**, abstracts and/or full versions of the papers were independently reviewed. Discrepancies were resolved through discussion. Articles not relevant to the topic or focused on treatment, theory or were applicable to the other domains (physical, cognitive or mental health) were excluded. For the **secondary exclusion**, reviews or studies that were deemed to be of lesser quality or usefulness were excluded by the author. Meta-analyses were considered the best result as it offers both a systematic review of the topic and a measure of effect magnitude. The second preferred article type were systematic reviews. Randomized control trial studies and quasi-experimental studies were then accepted as evidence if meta-analyses or systematic

reviews were not available or if they were more current than the reviews. For articles that addressed the same topic, the most current and/or extensive review was used.

PRESENTATION OF RESULTS

The results reflect a ‘seminal studies’ approach that includes those papers which best represents a range of outcomes, practices, and settings which are representative of the wealth of available information. The newest reviews or studies in each area are presented.

For each potential indicator, the keywords used for the search are presented as well as a volume report describing the search decision process.

After the results are summarized and the availability of data sources is presented, each indicator is subjected to an applicability assessment. There are four evaluation categories which are used to determine applicability: magnitude; significance/impact; modifiability; and data availability. The latter three evaluation categories were assessed qualitatively in terms of a high-level rating of Low, Medium, or High; the meaning of these ratings is provided in the following table.

APPLICABILITY ASSESSMENT CRITERIA

Key to Summary Assessments by Evaluation Category				
	MAGNITUDE <i>Estimated prevalence of affected B.C children</i>	SIGNIFICANCE/IMPACT <i>Physical, Mental, Emotional or Social effects</i>	MODIFIABILITY <i>Expert assessment of prevention potential</i>	DATA AVAILABILITY/VALIDITY <i>B.C.-specific information sources</i>
LOW	< 19,000 (<2% of total pediatric cohort)	Minimal effects and/or little proof of direct causation	Underlying risk factor not amenable to prevention	Data not routinely collected or reported
MEDIUM	19,000 - 97,000 (2-10% of total pediatric cohort)	Moderate effects, Evidence of positive impact	Underlying risk amenable to prevention	One source of data available or data not readily available
HIGH	>97,000 (>10% of total pediatric cohort)	Substantial effects, including potential for death, suicide, PTSD, serious mental/physical health consequences	Underlying risk amenable to prevention, effective intervention(s) are available and feasible	Multiple sources of data available or administrative sources readily available

Two quantitative measures were used in the applicability assessment: applicable age group related to the concept and estimated prevalence among BC children. For the prevalence data, the absolute number of cases was calculated by applying that rate to the pertinent 2010 age cohort (see the table below from Statistics Canada).

BC Population by Gender and Age, July 2010				
Age	Male	Female	Total	Cumulative %
<1	22,994	21,522	44,516	
1	23,403	21,845	45,248	89,764
2	23,476	22,010	45,486	135,250
3	22,920	21,548	44,468	179,718
4	22,788	21,153	43,941	223,659
5	22,578	21,093	43,671	267,330
6	22,819	21,265	44,084	311,414
7	22,931	21,246	44,177	355,591
8	22,921	21,184	44,105	399,696
9	23,239	21,673	44,912	444,608
10	23,687	22,298	45,985	490,593
11	24,204	22,915	47,119	537,712
12	24,498	23,123	47,621	585,333
13	25,677	23,887	49,564	634,897
14	26,510	25,022	51,532	686,429
15	27,484	25,613	53,097	739,526
16	27,888	26,447	54,335	793,861
17	28,878	27,472	56,350	850,211

18	30,094	28,160	58,254	908,465
19	32,214	29,749	61,963	970,428
Total	501,203	469,225	970,428	

For this review of social relationships and child health and well-being, four themes are explored: social connections, safety, child welfare and youth justice. Candidate indicators that were reviewed include the following:

Social Connections	Safety
Relationships with Parents Relationships with Adults School Connectedness Relationships with Peers Constructive Use of Time Neighbourhood Cohesion Community Connection	Violence in the Home Bullying Parental Alcohol/Substance Use Neighbourhood Safety
Child Welfare	Youth Justice
Domestic Abuse/Child Neglect Students Reporting Physical/Sexual Abuse Children in Care Social Support for Parents Children in Non-parental Care Child Protection Caseload At-risk Children & Youth Supported to Stay at Home	Youth Who Receive Alternative Sentencing Youth Charged & Convicted

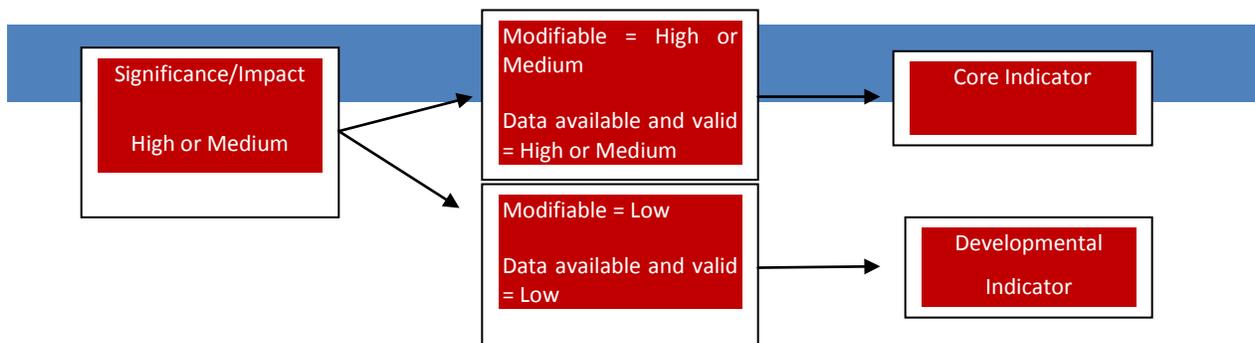
The results presented below required the following changes to the original candidate indicators:

(1) *Social connection theme*. Neighborhood cohesion and community connections were merged under the more inclusive domain of Social Capital; and,

(2) *Child welfare theme.* Violence in the home from the child safety theme was moved to the child welfare theme. Child maltreatment included physical abuse/neglect, sexual abuse, and domestic abuse exposure. The 'Children in care' category was expanded to include foster care, residential care, and kinship care. No evidence was found for the impact of 'Child protection caseload' or 'At-risk children supported to stay at home' on child health and well-being within the systematic review parameters and thus were deleted from the safety theme.

DECISION PROCESS FOR RECOMMENDATIONS

As the purpose of this review process was to identify evidence-based information on social relationships and child health and well-being, the summary assessment 'significance/impact' carried the most weight in determining whether a potential indicator would be recommended. Recommended indicators required the following ratings.



SOCIAL CONNECTIONS THEME

Recently, the field of developmental psychology associated with social relationships has focused on positive developmental assets and factors that promote resiliency within an ecological perspective. The social connections theme typically reflects those factors that promote positive child and youth development, i.e., connections within the family, schools, extra familial adults, peers, and the wider community. The results of this theme describe both protective and risk factors for child health and well-being associated with social connections.

RELATIONSHIPS WITH PARENTS

BACKGROUND AND CONTEXT

The purpose of this review is to find research evidence of an association between child-parent or family relationships and child health and well-being. Parent - child connectedness (PCC) generally refers to the bond between a parent and a child and is defined as “the *quality* of the emotional bond between parent and child and by the degree to which this bond is both *mutual* and *sustained* over time. When PCC is high in a family, the ‘emotional climate’ is one of affection, warmth, satisfaction, trust, and minimal conflict. Parents and children who share a high degree of connectedness enjoy spending time together, communicate freely and openly, support and respect one another, share similar values, and have a sense of optimism about the future.” (Lezin et al, 2004, 9).¹

It is well accepted that parents and families have a powerful influence on their children’s social, cognitive, physical and emotional development (Bowlby, 1969;² Shonkoff & Phillips, 2000;³ Stroick & Jensen, 1999⁴). This review provides recent evidence on parental or family influences on children’s physical activity, substance abuse, psychiatric health, sexual behavior, dietary behaviors, and suicide phenomena.

¹ Lezin, N., Rolleri, L., Bean, S. & Taylor, J. (2004). *Parent-child connectedness: Implications for research, interventions and positive impacts on adolescent health*. Santa Cruz, CA: ETR Associates.

² Bowlby, J. (1969). *Attachment and loss. Vol. 1, Attachment*. Harmondsworth, Penguin.

³ Shonkoff, J. & Phillips, D. (2000). *From Neurons to Neighborhoods- The Science of Early Childhood Development*. National Research Council, Institute of Medicine. Washington, DC: National Academy Press.

⁴ Stroick, & Jensen, (1999). *What is the Best Policy Mix for Canada’s Young Children?* CPRN Study No. F-09. Ottawa: Canadian Policy Research Networks.

KEY WORDS

Parent, family, protective factors, risk factors, parent-child connectedness, parent-child involvement

VOLUME REPORT FOR RELATIONSHIP WITH PARENTS AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
281	126	10	7
Excluded if not related to youth outcomes and relationship with parents	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=5; studies=2

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR RELATIONSHIP WITH PARENTS ON CHILD HEALTH AND WELL-BEING

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Protective Factors			
Ryan (2010)	Parenting factors associated with reduced adolescent alcohol use: a systematic review of longitudinal studies	77 studies	Systematic review which explored parenting strategies and adolescent alcohol use from longitudinal studies. Parent modeling, limiting availability, parental monitoring, quality of parent-child relationship, parental involvement and communication predicted delayed alcohol initiation in adolescence. Parent modeling, limiting availability, disapproval of adolescent drinking, general discipline, monitoring, parent-child relationship quality, parental support and general communication predicted lower levels of later drinking by adolescents.
Edwardson (2010)	Parental influences on different types and intensities of physical activity in youth: a systematic review	96 studies (36 children; 55 adolescents; 5 both)	Parents played an important role in moderate to vigorous physical activity (MVA) in children, including: overall physical activity (PA), leisure time PA, active role modeling (especially mothers), organizing PA through modeling, transport and encouragement. Results for adolescents are weaker but show PA influenced by parents' level of PA, attitudes toward PA, transport and encouraging. Over time, parental support predicted children's organized PA and fathers' PA predicted adolescents overall PA.

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Risk Factors			
Welch (2009)	Family relationships in childhood and common psychiatric disorders in later life: systematic review of prospective studies	23 studies	This review looked at child/ family relationships and later adult psychopathology using prospective, longitudinal cohort studies (minimum 10 year follow-up). Abuse relationships predicted depression (strong), anxiety (low/moderate) and post traumatic stress disorder (strong). Maternal emotional unavailability predicted suicide attempts in adolescents (moderate).
Buhi (2007)	Predictors of adolescent sexual behavior and intention: A theory guided systematic review	69 studies	From a large number of family factors examined, the only consistent predictor of early sexual activity was time home alone (only 2 studies- low).
Evans (2004)	Factors associated with suicidal phenomena in adolescents: A systematic review of population-based studies	30 studies	Strong familial factors associated with adolescent self-harm (attempted suicide) included: family suicide behavior, family discord, and unsupportive parents. Suggestive evidence of vulnerable factors associated with adolescent self-harm (attempted suicide) includes poor communication with family.

SUMMARY REVIEW OF STUDIES FOR PARENTAL INFLUENCE ON CHILD HEALTH AND WELL-BEING

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
Effects on children					
Spurrier (2007)	Assess the relationship between preschool children’s physical activity and dietary patterns and characteristics of the home environment	Australia; N=280; \bar{X} age =4.8 yrs.	Cross-sectional study using direct observation and standardized parent-report questionnaires.	Physical activity, sedentary behavior, dietary patterns	Parental behavior and home characteristics are associated with preschool children’s’

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
			ANOVA's		physical activity, sedentary behavior and diet.
Resnick (1997)	Protecting adolescents from harm--Findings from the National Longitudinal Study of Adolescent Health	USA; N=12,118; grades 7-12.	Nationally representative study; paper and pencil survey of youth grades 7-12; in home survey of risk behaviors. Multiple regressions controlling for SES and family structure.	Emotional distress, suicidal thoughts and behaviors, use of cigarettes, alcohol or marijuana, age at sexual debut, and pregnancy history.	Parent-family connectedness was associated with lower levels of adolescent emotional distress and suicide involvement, violence, substance abuse and age of sexual debut.

BIBLIOGRAPHY FOR TABLE OF REVIEWS AND STUDIES

Buhi ER, Goodson P. Predictors of adolescent sexual behavior and intention: a theory-guided systematic review. *Journal of Adolescent Health*. 2007; 40: 4-21.

Edwardson CL, Gorley T. Parental influences on different types and intensities of physical activity in youth: a systematic review. *Psychology of Sport and Exercise*. 2010; 11: 522-535.

Evans E, Hawton K, Rodham K. Factors associated with suicidal phenomena in adolescents: A systematic review of population-based studies. *Clinical Psychology Review*. December 2004; 24(8): 957-979.

Resnick MD, Bearman PS, Blum RW, Bauman KE, Harris KM, Jones J et al. Protecting adolescents from harm--Findings from the National Longitudinal Study of Adolescent Health. *Journal of the American Medical Association*. (1997); 278(10): 823-832.

Ryan S, Jorm AF, Lubman DI. Parenting factors associated with reduced alcohol use: a systematic review of longitudinal studies. *Australian and New Zealand Journal of Psychiatry*. 2010; 44: 774-783.

Spurrier NJ, Margery AA, Golley R, Curnow F, Swayer MG. Relationships between the home environment and physical activity and dietary patterns of preschool children: a cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*. 2008; 3: 31-43.

Welch S, Patterson J, Shaw R, Stewart-Brown S. Family relationships in childhood and common psychiatric disorders in later life: systematic review of prospective studies. *British Journal of Psychiatry*. 2009; 194: 392-398.

RESULTS FOR RELATIONSHIP WITH PARENTS

The results for the effect of parental relationships on child health and well-being reflect the most recent and/or highest quality review or study and address the following child outcome areas: psychiatric disorders, suicide ideation, physical activity, obesity, sexual behavior, and substance abuse. These results are depicted as either parental or familial protective or risk factors.

Protective factors

Parents were shown to have a positive influence on their adolescent or pre-adolescents' use of alcohol or problem drinking in adulthood. Ryan et al (2010) identified the following factors as important for protecting adolescents from early alcohol use: parent modeling, limiting availability, parental monitoring, quality of parent-child relationship, parental involvement, and communication. Parent modeling, limiting availability, disapproval of adolescent drinking, general discipline, monitoring, parent-child relationship quality, parental support and general communication predicted lower levels of later drinking by adolescents.

A large longitudinal study of 12, 118 adolescent's identification of risk and protective factors confirm the above results. Parent-child connectedness (identified as closeness to parent; perceived caring by parent; satisfaction with relationship with parent; feeling loved and wanted by family members) was associated with lower levels of adolescent emotional distress and suicide involvement, violence, substance abuse and age of sexual debut (Resnick et al, 1997).

Two papers were identified that showed parental influences on physical activity (Edwardson & Gorley, 2010; Spurrier et. al. 2008) and dietary patterns (Spurrier et. al. 2008). Parents played an important role in perpetuating moderate to vigorous physical activity (MVA) in their children through modeling positive physical activity (PA), organizing activities, transporting their children to activities and encouragement. Results for adolescents are weaker but show that parental support predicted children's organized PA and fathers' PA predicted adolescents overall PA. Spurrier et al. (2008) also found a relationship between parent's and children's level of physical activity. Also significant for preschool children's positive PA were the size of the family backyard and play equipment, and less 'screen time'. Parents also positively influenced their children's diet through restricting access to sweets, fruit juice, and snacks and not using food as a reward or "telling them to eat up".

Risk factors

The risk factors of negative family relationships or behaviors showed strong associations with psychiatric/psychological distress and suicidal phenomena (suicide attempts, deliberate self-harm, suicidal plans, threats and thoughts), and a weak association with early sexual behavior or intentions. Welsh et al. (2009) found a strong relationship between abusive parenting (physical, sexual and neglect) and later child depression and post traumatic stress disorder. More moderate effects were found between abuse and later anxiety. Maternal

emotional unavailability was associated with adolescent suicide attempts. This area will be discussed in more detail in the Child Maltreatment section.

A significant association was also found between family relationships and behaviors and adolescent suicidal phenomena (Evans et al., 2004). Family discord such as living apart from both parents and parental divorce had a direct association with adolescent suicide attempts and ideation in their investigation of large population-based studies. Further, conflicts and arguments within the home were clearly and directly associated with the prevalence of suicidal phenomena, whereas family harmony and cohesion were identified as protective factors. Good communication with and feeling understood by family members also appears to reduce risk; with the opposite being true, especially for females.

Buhi et al. (2007) explored an assortment of environmental variables (including social relationships with parents) and early adolescent sexual behavior or intention. A weak effect was identified between adolescents being left home alone and early sexual activity.

A closely related construct is 'family connectedness', which refers to a sense of belonging and closeness to one's family more broadly. The McCreary Society collects data from youth on family connectedness in their British Columbia's *Adolescent Health Survey*. According to their summary of *A Picture of Health, Highlights from the 2008 British Columbia Adolescent Health Survey*⁵

Family relationships can have an important effect on youth health and development. The survey asked questions about students' relationships with their caregivers, including feelings of closeness, how much they felt their caregivers were warm and loving toward them and their satisfaction with these relationships.

Connectedness to mother and father figures was higher for 12- and 13-year-olds than for those aged 14 to 18 years old. Youth who ran away in the past year or who had lived in government care, reported lower connectedness than youth who did not have these experiences. Consistent with previous AHS findings, male youth reported higher connectedness with both caregivers than did females. Both males and females felt more connected to their mothers than to their fathers.

⁵ *A Picture of Health, Highlights from the 2008 British Columbia Adolescent Health Survey*- see <http://mcs.bc.ca/pdf/AHS%20IV%20March%2030%20Final.pdf> Accessed Jan. 5, 2011.

Students who had one caregiver at home when they woke up in the morning, in the same room as them when they ate their evening meal, or at home when they went to bed on most of the past five school days reported higher connectedness with their mother and father figures compared to students whose caregiver was absent on all five school days. Also, students who felt their family members understood them reported better health compared to students who did not have these positive feelings.

The McCreary Centre Society also collects information on family connectedness for youth in custody. According to the summary of *Time Out II: A Profile of BC Youth in Custody*⁶

In 2004, only 12% of youth in custody reported living with two parents most of the time. Most live in a one-parent household or with unrelated adults. By comparison, 68% of youth in school live with two parents. The survey asked several questions about youth relationships with parents and family, such as “How close do you feel to your mother?” “How much do you think your father cares about you?” “How much do you feel the people in your family understand you?” The responses were combined to give a family connectedness score between zero and one. For example, if someone gave answers indicating no connection on all questions, the score would be zero. A high degree of connection on all questions would result in a score of one. A lower score is associated with greater risk taking. Youth in custody have an average family connectedness score of .66, lower than youth in school, who have an average score of .78. Even so, 78% of youth in custody felt their mother cares about them a lot, and 57% felt their father cares about them a lot. More youth in school feel cared about by their parents: 91% felt their mother cares about them a lot, and 81% felt their father cares about them a lot. Overall, 84% of youth in custody have at least one parent they feel cares about them a lot, compared to 95% of youth in school. Fifty-nine percent of youth in custody were often satisfied with their relationship with their mother, while 36% were often satisfied with their relationship with their father. About a quarter (24%) felt their family understood them a lot, 59% said their family understood them somewhat, and 18% felt their family didn’t understand them at all. Twenty-four percent of youth in custody felt their family had fun together a lot, 53% said their family had fun together some of the time, and 22% felt their family didn’t have fun together at all. In addition, 42% of youth felt their family paid attention to them a lot, 47% said their family paid attention to them some of the time, and 11% said their family didn’t pay attention to them at all.

DATA SOURCES FOR RELATIONSHIPS WITH PARENT

The National Longitudinal Study of Children and Youth (NLSCY) collects data on youth’s perception of their relationship with their mother and father. The purpose of the questions for parental relationships is to provide a measure of how close, affectionate, and understanding the respondent perceives his/her relationship to be.

⁶ *Time Out II: A Profile of BC Youth in Custody*- see http://www.mcs.bc.ca/pdf/time_out_2.pdf. Accessed Jan. 5, 2011.

Specifically, youth are asked:

Overall, how would you describe your relationship with your mother? (CPMCcQ06, DPMCcQ06) ... very close, ... somewhat close, ... not very close

How well do you think your mother understands you? (CPMCcQ5A, DPMCcQ5A) ... a great deal, ... some, ... very little

How much affection do you receive from your mother? (CPMCcQ5C, DPMCcQ5C) ... a great deal, ... some, ... very little

As well, the same questions are asked about the perception of a relationship with their father:

Overall, how would you describe your relationship with your father? (CPMCcQ09, DPMCcQ09) ... very close, .. somewhat close, ... not very close,

How well do you think your father understands you? (CPMCcQ8A, DPMCcQ8A) ... a great deal, ... some, ... very little

How much affection do you receive from your father? (CPMCcQ8C, DPMCcQ8C) ... a great deal, ... some, ... very little

The *National Longitudinal Survey of Children and Youth* (NLSCY) is a long-term study of Canadian children that follows their development and well-being from birth to early adulthood. The NLSCY began in 1994 and is jointly conducted by Statistics Canada and Human Resources and Skills Development Canada (HRSDC), formerly known as Human Resources Development Canada (HRDC). The study is designed to collect information about factors influencing a child's social, emotional, and behavioural development and to monitor the impact of these factors on the child's development over time. The survey covers a comprehensive range of topics including the health of children, information on their physical development, learning, and behaviour as well as data on their social environment (family, friends, schools, and communities).

The *McCreary Adolescent Health Survey* also collects information on parent-child relationships and family connectedness. Specifically they ask "If you were having a serious problem, is there an adult in your family that you would feel okay talking to?" (Survey IV).

DISCUSSION

According to results from the NLSCY, 2000/2001, most youth report a close relationship with their parents.

Percentage of youth by score on the 2000/01 relationship with mother scale

Score	Percentage	Standard error
0 - 1 (low)	4.3	E1 0.85
2	4.3	E1 0.82
3	16.3	2.01

4	18.7	1.99
5	19.7	1.93
6 (high)	36.7	2.47

Notes: Observed range of scores: 0 to 6 (possible range: 0 to 6) E1 indicates a coefficient of variation (CV) between 16.6% and 25%

Percentage of youth by score on the 2000/01 relationship with father scale

Score	Percentage	Standard error
0 (low)	8.9	1.47
1	6.8	E1 1.21
2	9.4	1.47
3	19.3	1.96
4	18.0	1.82
5	12.8	1.62
6 (high)	24.8	2.33

Notes: Observed range of scores: 0 to 6 (possible range: 0 to 6) E1 indicates a coefficient of variation (CV) between 16.6% and 25%. Source: Statistics Canada: National Longitudinal Survey of Children and Youth, 2000/01

In a study conducted by Bushnik (2005)⁷ for Statistics Canada, the following mean scores of relationships with parents for youth aged 16 and 17 years were identified for 2000/2001 by gender.

⁷ Bushnik T. Youth depressive symptoms and changes in relationships with parents and peers. Statistics Canada. 2005. See <http://www.statcan.gc.ca/pub/89-599-m/89-599-m2005002-eng.pdf> Accessed Jan. 6, 2011.

		All youth		Males		Females	
		Mean (SE)	Population N	Mean (SE)	Population N	Mean (SE)	Population N
Time 2000/01							
Relationship/mother score	0 to 6	4.5 (0.07)	359 600	4.6 (0.10)	184 400	4.5 (0.11)	175 300
Relationship/father score	0 to 6	3.7 (0.10)	359 600	4.0 (0.14)	184 400	3.4 (0.15)	175 300

NLSCY, Statistics Canada, 2000/01. Bold score indicates significant differences by gender.

CONCLUSION

It is clear that parents have a strong influence on children. Abusive parenting was shown to have the potential for long term negative emotional and psychological consequences in adolescence and adulthood. Modeling positive physical activity and providing good food choices was shown to improve child physical health. For adolescents, parents appear to have less of an influence on levels of physical activity or whether the adolescent engages in early sexual activity. However, parents do have an influence on adolescent alcohol consumption and suicidal thinking and behavior.

Ratings of parents indicate a generally positive feeling of connectedness. In both measures reported above, males rated both parents slightly higher than females. In all cases, the mother was rated higher than the father. Significant differences were found between males and females on father ratings; with the father score higher for boys. As expected, youth in custody, where many come from abusive families had lower parental ratings.

As Resnick et al (1997) showed, strong bonds between parents and children protects youth from engaging in health risk behaviors, particularly when parents recognize, value, and reward prosocial behaviors. Family

connectedness, defined as closeness to parents, perceived caring, satisfaction, and feeling loved and wanted, was protective against all outcomes examined, except history of pregnancy. They also found that parental presence, shared family activities, and high expectations were important predictors of adolescent health outcomes.

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'Relationship with Parents'.

SUMMARY ASSESSMENT						
Relationship With Parents						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Relationship with Parents	0-19	970,048	High	High	High	High

The **Magnitude** of the pediatric population is assessed at **High** as it includes the total BC population of children 0-19 years or 970,048. This number exceeds the cutoff point of greater than 10% of the total pediatric cohort of BC required for a high rating.

The **Significance** of the indicator based on the research evidence is assessed as **High**. The rating of 'high' was given because the research evidence indicates that a close parent-child connection (identified as closeness to parent; perceived caring by parent; satisfaction with relationship with parent; feeling loved and wanted by family members) is associated with lower levels of adolescent emotional distress and suicide involvement, violence, substance abuse and age of sexual debut. Alternately, a poor parent-child connection showed strong evidence of psychiatric/psychological distress (depression and post traumatic stress disorder) and such suicidal phenomena as suicide attempts, deliberate self-harm, suicidal plans, threats, and thoughts.

The assessment of **Modifiability** focuses on the efficacy of family support programs. The broadest definition of family support programs relates to services intended to improve child outcomes by strengthening the capacity of parents to support their children's development. Programs are typically preventive in nature and focus on the

parent (knowledge, behavior, attitudes, mental health, substance abuse, child maltreatment) and/or the child (social, emotional, behavioural, health or academic competencies). Some family support programs are targeted for parents (e.g., high risk parents who have low SES, young in age, or identified mental health, substance abuse, or child maltreatment histories) such as the *Nurse-Family Partnership*, *Healthy Families New York*, *Incredible Years*, or *Dare to be You*. Others are targeted for children with specific problems such as conduct disorders, substance use, delinquency, or mental health problems (e.g., *The Curriculum-Based Support Group (CBSG) Program*, or *Early Risers "Skills for Success"*). The final type of family support programs are 'universal' or provided to all children, often through the school system. An example of a universal family support program is *Positive Action*, a K–12 program, whose aim is to promote character development, academic achievement, and social-emotional skills and to reduce disruptive and problem behavior. All lessons are scripted and use classroom discussion, role-play, games, songs, and activity sheets or text booklets. Optional components that may or may not be implemented as part of the program are: site-wide climate development; drug education for grade 5 and middle school; conflict resolution; counselor, parent, and family classes; and community/coalition components.

The *Promising Practices Network*, a registry developed by the RAND Corporation, evaluates programs associated with child health, juvenile justice, education, child care, labor, and demographics using strict criteria for assessing efficacy.⁸ According to their assessment, the following have been identified as proven effective family supports programs: Carolina Abecedarian Project, Child-Parent Centers, DARE to be You, Early Head Start, Family Thriving Program, Healthy Families New York (HFNY), HighScope Perry Preschool Program, Incredible Years, Multisystemic Therapy (MST), New Hope Project, Newborn Individualized Developmental Care and Assessment Program (NIDCAP), and Nurse Family Partnership.

According to an American national evaluation of 260 family support programs,⁹ overall, statistically significant differences were found between the programs and their control counterparts (.29 for child cognitive development, .22 for child social and emotional development, .12 for child physical health and growth, .21 for child safety, .23 for parenting attitudes and knowledge, .26 for parenting behavior, .19 for family functioning, .14 for parent mental

⁸ *Promising Practices Network* see <http://www.promisingpractices.net/criteria.asp>. Accessed Feb. 11, 2011.

⁹ Layzer J, Goodson B, Berntein L, Price C. (2001). *National Evaluation of Family Support Programs*. Cambridge, MA: Abt Associates, Inc.

health, and .10 for family economic self-sufficiency). Thus, since the underlying risk of a poor parent-child relationship is amenable to prevention efforts and effective interventions are available and feasible, **Modifiability** is assessed as **High**.

Data availability/validity is assessed as **High**. The *National Longitudinal Survey of Children and Youth*, conducted every two years, tracks the progress and development of children from the time they are born through early adulthood. It explores physical development and overall health, learning ability, behavioral tendencies, family and friend structure, as well as the types of schools and communities in which the child is raised. Although all 10 provinces are represented, children living on Indian reserves, Crown Lands, residents of institutions, children of full-time members of the Canadian Armed Forces, and children who live in certain remote regions are excluded. The 'high' rating is given due to the consistency, breadth, and reliability of this survey conducted by Statistics Canada.

Thus, based on this assessment of 'Relationship with parents', the indicator ***percentage of children reporting a poor relationship with their parents*** is recommended for consideration as a **Core indicator** of child health and well-being in British Columbia, to be populated with routine data derived from the NLSCY. The high ratings across all categories suggests a large number of children impacted by the concept, the likelihood of a significant impact on child health and well-being, the potential for amenability through intervention, and a reliable and valid source of data.

RELATIONSHIPS WITH OTHER ADULTS

BACKGROUND AND CONTEXT

The purpose of this review was to identify recent evidence of an association between having a relationship with extrafamilial adults and the health and well-being of children. Grossman and Bulle (2006)¹⁰ define nonparental adult-youth connectedness as the degree to which youth feel they have a caring and supportive relationship with a nonparental adult. These authors reviewed the research associated with adult-youth connectedness and found that this relationship can positively influence children’s physical and mental health, school success and risk-taking behavior. They note that these relationships occur across different settings, including extended families, neighborhoods, schools, and through extracurricular activities. The adult may be a relative, teacher, coach, pastor, or friend and can serve as a powerful protective factor if the adult is a positive role model.

KEYWORDS

Adult connectedness, interpersonal relations, mentors, social support, prevention.

VOLUME REPORT FOR RELATIONSHIP ADULTS AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
211	73	7	4
Excluded if not related to youth outcomes and relationship with adults	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=3; studies=1

¹⁰ Grossman JB, Bulle MJ. Review of what youth programs do to increase the connectedness of youth with adults. *Journal of Adolescent Health*. 2006; 39: 788-799.

SUMMARY OF SYSTEMATIC REVIEWS AND META-ANALYSIS FOR ADULT RELATIONSHIP FOR CHILD HEALTH AND WELL-BEING OUTCOMES

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
DuBois (2002)	Effectiveness of mentoring programs for youth: a meta-analysis	55 studies	Significant but small positive benefit found for participating in mentoring programs for youth on emotional, behavioral and educational functioning. Stronger effects are found when programs use theory-based best practices, when youth are at risk and when a strong relationship develops between the youth and mentor.
Durlak (2007)	Effects of positive youth development programs on school, family and community systems	526 studies	Effective programs associated with positive youth development which identified a strong effect were associated with classroom-level change (.78) and school-wide psychosocial interventions (.74). Moderate effect sizes were associated with interventions for family-school relationships (.49), and classroom based psychosocial interventions (.47). Still significant but with smaller effect sizes were interventions focused on the family environment (.34) and parenting practices (.41)
Durlak (2007)	The impact of after-school programs that promote personal and social skills.	73 programs	After-school programs significantly succeeded in improving youths' feelings of self-confidence and self-esteem, school bonding (positive feelings and attitudes toward school), positive social behaviors, school grades and achievement test scores. They also reduced problem behaviors (e.g., aggression, non-compliance, and conduct problems) and drug use.

SUMMARY OF STUDIES FOR ADULT RELATIONSHIP FOR CHILD HEALTH AND WELL-BEING OUTCOMES

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
DuBois (2005)	Natural Mentoring Relationships and Adolescent Health: Evidence From a National Study Does exposure to individual or environmental risk mediate the outcomes?	USA; N=3187; High school	Wave III of the National Longitudinal Study of Adolescent	Education/work, problem behavior, psychological well-being, physical	Respondents who reported a mentoring relationship were more likely to

	students	Health (Add Health). Covariates = SES; risk factors	health	exhibit favorable outcomes relating to education/work (completing high school, college attendance, working ≥ 10 hours a week), reduced problem behavior (gang membership, hurting others in physical fights, risk taking), psychological well-being (heightened self-esteem, life satisfaction), and health (physical activity level, birth control use).
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Durlak JA, Taylor RD, Kawashima K, Pachan MK, DuPre EP, Celio CI, et al. Effects of positive youth development programs on school, family, and community systems. *American Journal Of Community Psychology*. 2007; Jun;39(3-4):269-86.

RESULTS FOR RELATIONSHIPS WITH OTHER ADULTS

These results focused on prevention programs designed to promote positive developmental outcomes (physical, personal, social, emotional, intellectual, and spiritual) in children and youth. The first paper is a major meta-analysis of 526 youth development programs associated with schools, families, and communities (Durlak, 2007). Specifically, the review included interventions which focused on school programs (n=128); family environments and parenting practices (n=60); community support (after-school programs and mentoring programs, n=57); programs that encouraged parent-school connections (n=43); family-community connections (n=20); community-school connections (n=20) and, family-school-community connections (n=3). Effective programs associated with positive youth development which identified a strong effect were associated with classroom-level change (.78) and school-wide psychosocial interventions (.74). Moderate effect sizes were associated with interventions for family-school relationships (.49), and classroom based psychosocial interventions (.47). Still significant but with smaller effect sizes were interventions focused on the family environment (.34) and parenting practices (.41). Examples of the types of youth outcomes were positive changes in personal, social and academic areas, such as better prosocial behavior, better school performance, and/or a reduction in negative outcomes such as acting out, drug use, theft and school expulsion.

Durlack and Weissberg (2007) conducted a meta-analysis of 73 after school programs to assess the impact on children's personal and social skills. Specifically they looked at the following outcomes: feelings and attitudes, indicators of behavioral adjustment, and school performance. The programs that were evaluated had the goal of promoting personal and social skills, such as problem-solving, conflict resolution, self-control, leadership, responsible decision-making, and enhancement of self-efficacy and self-esteem. As well, the study had to have had a control comparison group in the evaluation. The results indicated that youth who participate in after-school programs improved significantly in three major areas: feelings and attitudes, indicators of behavioral adjustment, and school performance. The programs succeeded in improving youths' feelings of self-confidence and self-esteem, school bonding (positive feelings and attitudes toward school), positive social behaviors, school grades and achievement test scores. They also reduced problem behaviors (e.g., aggression, noncompliance and conduct problems) and drug use. In sum, after-school programs produced multiple benefits that pertain to youths' personal, social, and academic life.

Mentoring programs such as Big Brothers/Big Sisters are based on the concept that relationships with extrafamilial adults can have a positive effect on child outcomes, particularly those from disadvantaged backgrounds. Dubois et al (2002) conducted a meta-analysis of 55 mentoring programs. They found positive support for the programs overall, although the effect size for youth outcomes was small ($d=.18$). A significant but small positive benefit was found for participating in mentoring programs for youth on emotional, behavioral, and educational functioning. The strongest predictors of positive outcomes included programs which had ongoing training for mentors, structured activities, expectations for frequency of contact, mechanisms for support and involvement of parents

and had an evaluation component. As well, the intensity and quality of the relationship between the youth and the mentor strongly influenced outcomes. Positive youth outcomes were identified for those pairs who met frequently, had emotional closeness and a longer-term relationship. Programs that were directed at youth from disadvantaged backgrounds, particularly those from low socioeconomic circumstances, had the largest effects.

A positive relationship between mentoring and youth outcomes was also identified by DuBois and Silverthorne (2005) in a nationally representative sample of American high school students. This study focused on 'natural mentors', i.e., those who are in the adolescent's social circle such as extended family members, teachers and guidance counselors. Students who reported a mentoring relationship were more likely to exhibit favorable outcomes relating to education/work (completing high school, college attendance, working greater than 10 hours a week), reduced problem behavior (gang membership, hurting others in physical fights, risk taking), psychological well-being (heightened self-esteem, life satisfaction), and health (physical activity level, birth control use). Outcomes which were not influenced by a mentorship relationship included: binge drinking, drug use, smoking, depressive symptoms, suicide ideation, and STD diagnosis. Further, the authors found that the benefits of having a 'natural mentor' did not seem to fully compensate for the effects of individual or environment risk factors.

DATA SOURCES RELATIONSHIPS WITH OTHER ADULTS

The McCreary Centre Society *Adolescent Health Survey* measures this construct with the following question, "If you were having a serious problem, is there an adult who is not in your family that you would feel okay talking to?"

The McCreary Centre Society's *Adolescent Health Surveys* are population-based and designed to monitor the health status and risk behaviours of British Columbia's youth. The fourth and most recent survey targets the British Columbia student population, Grades 7 to 12, enrolled in regular public schools during the 2007-2008 school year. As well, surveys are conducted with youth in custody and those of Aboriginal heritage. Survey coverage is high. For example, the fourth survey was conducted in all but nine of the province's 2007-2008 School Districts, with 29,315 students providing complete data records. The survey is designed to produce estimates of population characteristics with a maximum standard error of 3.5%.

As well, the British Columbia *School Satisfaction Survey* asks students "Do adults treat you fairly? 'How many adults care about you?' Do you feel welcome at your school?" The British Columbia *School Satisfaction Survey* is administered by the Ministry of Education. The School Satisfaction Survey provides school administrators with indicators of school performance such as: student achievement, social development, and school safety. The following grades were represented for 2009/2010: grades 3 and 4, grade 7, grade 10 and grade 12. As well, staff and parent data is collected. Data is collected online for three months at the individual school and school district

levels. Data is amalgamated and reported at the Health Service Delivery Area and Health Authority levels. Students denoted 'Aboriginal' in the School Satisfaction Surveys self-identify.

DISCUSSION

Only 56% of students answering the McCreary Centre Society *Adolescent Health Survey* felt they could seek help from an adult not in their family, a result down from the 59% report of 2003. Students sought help from: teachers (44%), doctors or nurses (29%), school counselors (28%), other school staff (20%), religious leaders (17%), and youth workers (16%).

The 2009/2010 British Columbia *School Satisfaction Survey* asked the question "how many adults care about you?" The percentage of student responses relates to those who chose 2 or more: Grade 3 and 4 (93%); Grade 7 (86%); Grade 10 (71%), Grade 12 (78%).

Other sources of information related to child relationships with non-familial adults are found in the number of community-based mentoring programs in Canada.

Boys and Girl Clubs of Canada¹¹

- 104 clubs in 700 service locations across Canada
- More than 200,000 children and youth served by Clubs
- 19,365 youth and children served everyday
- 61,840 youth over age 13 attend Boys and Girls Clubs.
- 31 different languages spoken

Big Brothers and Big Sisters of Canada¹²

¹¹ Boys and Girl Clubs of Canada- see <http://www.bgccan.com/upload/annualreporteng.pdf>

¹² Big Brothers and Big Sisters of Canada- see <http://www.bigbrothersbigsisters.ca/en/Home/default.aspx>

There are 128 Big Brothers/Big Sister agencies in over 1000 communities across Canada that provide direct service to over 27,000 children by matching them to adult volunteers in quality mentoring relationships.

YMCA¹³

According to their website, 511,500 children and 224,000 youth up to age 17 learn new skills and build character in YMCA programs. Our ultimate goal is for children, youth and families to embrace fun, healthy habits that become a lifelong practice. With an emphasis on total health in spirit, mind and body, YMCA programs instill values of caring, honesty, inclusiveness, respect and responsibility. Through YMCA child care, recreation, fitness, leadership development, camp and youth clubs, YMCAs help children and youth build character and resilience and encourage personal growth and well-rounded lives.

Scouts Canada¹⁴

Scouts Canada, the country's leading youth organization, offers seven challenging programs for boys, girls and youth age 5-26 in thousands of individual groups in most cities and towns across Canada. Over 74,000 young people enjoy Scouts Canada's programs, which are provided by 23,000 caring and dedicated volunteers.

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'Relationship with Other Adults'.

SUMMARY ASSESSMENT				
Relationship with Other Adults				
	Magnitude	Significance / Impact	Modifiability	Data Availability/Validity

¹³ YMCA/YWCA see <http://www.ymca.ca/en/programs-and-services/children-and-youth.aspx>

¹⁴ Scouts Canada see <http://www.scouts.ca/dnn/AboutUs/tabid/54/Default.aspx>

Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Proportion of BC child /youth population to which concept/indicator applies	Association between concept and health/well-being dimension	Degree the concept/indicator(s) be reasonably changed through public policy or other intervention	Existence and validity of information for the component indicator(s) for each concept
Relationship with Adults	6-19	393,734	High	Medium	Medium	Medium

The pediatric population **Magnitude** of the potential indicator is assessed as **High**. This is based on a pediatric population of 6-19 yrs or 703,098 children of which 56% of students who answered the McCreary Centre Society *Adolescent Health Survey* felt they could seek help from an adult not in their family. The resulting estimated prevalence amongst BC children is 393,734, which is above 10% of the total pediatric cohort of children in BC.

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual's health and well-being is assessed as **Medium**. The evidence indicated that child-extrafamilial adult relationships can have positive effects for children's social-emotional health, reducing risk taking behaviors and academic achievement. Programs associated with school had stronger effects than those focused on family functioning; making it unclear whether positive effects were associated with an adult mentor, school connectedness or constructive use of time. However, it is clear that caring adults, especially those with a strong bond to the child is important for at-risk children. Further, these relationships appear to have long-term effects for reducing behavioral risks and improving physical and psychological health as well as educational outcomes.

The **Modifiability** of the potential indicator is assessed as **Medium**. Although the evidence indicated that positive child health and well-being effects are possible as a result of a positive relationship with an adult outside the family, outcomes were shown to be contingent on the intensity and quality of the relationship and individual or environment risk factors. As Dubois et al (2002) found, the strongest predictors of positive outcomes included programs which had ongoing training for mentors, structured activities, expectations for frequency of contact, mechanisms for support and involvement of parents and had an evaluation component. Similar to the results seen for parent-child relationship indicator, programs which are directed toward youth from disadvantaged backgrounds, report the greatest change in child health and well-being.

Data Availability/Reliability for the potential indicator is assessed as **Medium**. Although two sources of data are available that request information about relationships with extrafamilial adults, neither directly assesses whether

it is a mentoring or supportive relationship or the level of duration or intensity of that relationship. The McCreary Centre Society *Adolescent Health Survey* queries whether adolescents feel they could seek help from an adult not in their family and the British Columbia *School Satisfaction Survey* asks about the number of adults who care about the child.

Based on the summary assessment of the 'Relationship with other Adults' concept, it is recommended that the indicator, ***percentage of children reporting a positive relationship with an adult outside the family*** be considered as a **Developmental indicator** of child health and well-being in British Columbia. As the research indicates, having a positive role model outside of the home is important and effective for children in at-risk situations. As most of the prevention programs have been designed to address this need and they have been shown to be effective for this population for emotional, behavioral, and educational functioning, inclusion as an indicator is warranted. The developmental consignment refers to the need for data that addresses an on-going, positive, or pivotal relationship for children of all ages.

SCHOOL CONNECTEDNESS

The purpose of this review was to find research evidence of an association between school connectedness and child and youth health and well-being. According to MacKay (2009),¹⁵ school connectedness is a general term used to describe a sense of belonging to the school environment where students feel connected when: they feel they are a part of the school; they are happy and like school; they are engaged at school; they feel safe at school; they feel accepted and valued; they participate in school activities; they feel that teachers are fair and care about them; and they have good relationships with other students. This is a relatively new field of research, led by The Search Institute in Minnesota and research from the *National Longitudinal Study of Adolescent Health (Add Health)*, which has shown that school connectedness can serve as a protective factor for youth. This review presents research exploring the protective factors associated with school connectedness for both adolescents and children, the long-term effects of school connectedness, and factors that promote school connectedness.

KEYWORDS

Connectedness, school environment, school belonging, school engagement, social ecology

VOLUME REPORT FOR SCHOOL CONNECTEDNESS AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
87	57	11	5
Excluded if not related to youth outcomes and school connectedness	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Studies=5

¹⁵ MacKay L. School connectedness: it matters to student health. *Visions: BC's Mental Health and Addictions Journal*, 2009; 5(2): 18-19.

DETAILED RESULTS

SUMMARY REVIEW OF STUDIES FOR SCHOOL CONNECTEDNESS ON CHILD HEALTH AND WELL-BEING

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
Protective factors					
Resnick (1997)	Protecting adolescents from harm--Findings from the National Longitudinal Study of Adolescent Health. Assess risk and protective factors for adolescents	USA; N=12,118; grades 7-12.	Nationally representative study; paper and pencil survey of youth grades 7-12; in home survey of risk behaviors. Multiple regressions controlling for SES and family structure.	Emotional distress, suicidal thoughts and behaviors, use of cigarettes, alcohol or marijuana, age at sexual debut, and pregnancy history.	School connectedness was associated with lower levels of adolescent emotional distress and suicide involvement, violence, substance abuse and age of sexual debut.
Rice (2008)	Relationship of anger, stress and coping with school connectedness in fourth grade children; examining the role of race and gender.	USA; 166 4 th graders; 65% of sample had family incomes of \$25,000 or less. Promoting Anger and Stress Management and Self Concept Program	Trait anger, anger out, anger-reflection control, anger suppression, stressful events, social confidence, behavior control, school connectedness	Academic confidence, family support, peer acceptance, behavior control and social confidence	Higher school connectedness was associated with lower stress levels, and trait anger and anger-out (but not anger reflection/control or anger suppression). School connectedness was positively associated with perceived sources for coping, social confidence, and behavior control. Gender did not moderate the results however race moderated the relationship between

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
					school connectedness and both stress and social confidence.
Long term effects					
Bond (2007)	To examine associations between social relationships and school engagement in early secondary school and mental health, substance use, and educational achievement 2–4 years later	Victoria, AU N= 2678 grade 8 students from 26 secondary schools	School-based longitudinal study of secondary school students, surveyed at school in grade 8 (13–14-years-old) and grade 10 (16-years-old), and 1-year post-secondary school.	Mental health status, substance abuse, academic outcomes (grade 12 completion and university entrance score), social connectedness (with friends), interpersonal conflict, school connectedness.	Higher school and social connectedness in grade 8 was associated with lower depressive symptoms, substance abuse and better school completion 4 years later. However, low school connectedness but high social connectedness was associated with an elevated risk of anxiety/depression symptoms, smoking, drinking, using marijuana in grade 10.
Catalano (2004)	Explore school connectedness on adolescent outcomes based on two longitudinal intervention studies	Seattle, US; <i>Seattle Social Development Project</i> ; 8 schools in high risk neighborhoods. N=808; 49% female; 52% families in	Quasi-experimental design: 1) full intervention (gr. 1-6); late intervention (gr.5-6); parent-training (gr. 5-6) and control group. Follow-to grade 10, age	Intervention: teacher prosocial training, child social and emotional skill development, parent training (grades 1-6).	School connectedness during middle and high school was significantly associated with substance abuse, delinquency, gang membership, violence, academic problems and sexual

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
		poverty.	18, 21, 24 and 27.		activity in adolescence and young adulthood.
Promoting school connectedness					
McNeely (2002)	Promoting school connectedness: evidence from the National Longitudinal Study of Adolescent Health. Identify school climate factors that promote school connectedness	USA; N=12,118; grades 7-12 .	Nationally representative study; paper and pencil survey of youth grades 7-12 years; School staff on school climate	School connectedness score from 5 questions	Schools that had positive classroom management practices and climates, tolerant disciplinary policies, smaller school size and opportunities for youth participation in extracurricular activities was associated with higher school connectedness.

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RESULTS FOR SCHOOL CONNECTEDNESS

No systematic reviews or meta-analyses have been conducted on school connectedness to date. The results describing the association between school connectedness and outcomes include a large longitudinal study on adolescents and a cross-sectional study on children. More recent work in the area has focused on the long term effects of school connectedness, which are presented for physical health, mental health, problem behavior, substance abuse, and academic outcomes. As well, a study is presented which explored the school attitudes and climate most conducive for promoting school connectedness.

Resnick et al. (1997) found that school connectedness was a protective factor for adolescent risk behaviors in the *National Longitudinal Study on Adolescent Health*. According to 12,118 adolescents in this nationally representative sample, school connectedness (feeling that teachers treat students fairly; close to people at school; feeling part of the school) was associated with lower levels of adolescent emotional distress and suicide involvement, violence, substance abuse (alcohol, cigarettes, marijuana) and age of sexual debut (but not pregnancy history).

School connectedness was also shown to be a protective factor for younger children. Rice et al (2008) found that school connectedness was positively associated with social confidence and behavior control in grade 4 students and negatively associated with trait anger, anger-out and stress. These results were consistent between males and females; however race had a moderating effect on school connectedness and social confidence and stress.

The effects of school connectedness appear to persist over time, although it is not clear that whether it is a primary or secondary effect (e.g., increased self-confidence which increases self-efficacy). The paper presented by Catalano et al (2004) is extensive and describes two longitudinal prevention programs from the *Social Development Research Group*. These programs were based on the concept of teaching prosocial skills to teachers, providing social and emotional skills training to children and supporting parents through volunteer training in the effort to encourage school connectedness and competency in the children. Etiological analyses of the *Seattle Social Development Project* indicates that those children who were most bonded or connected to their schools (from age 10-18), were less likely to abuse alcohol, cigarettes and marijuana, engage in violence, delinquent behavior or become involved in gangs, have academic problems or engage in risky sexual behavior (by age 21). The strength of this program was the controlled intervention component which allowed researchers to explore causative effects of school connectedness. The intervention was shown to positively change children's behaviors by changing the socializing factors in their early educational settings. The interventions described above increased school bonding and reduced problem behavior in elementary school and persisted up until grade 12; with lower rates of school problems, violence, alcohol abuse, and risky sexual abuse. The second project, *Raising Healthy Children* was an extension of the Seattle project and reinforced the positive influence of school connectedness on immediate and long term outcomes.

Bond et al (2007) found similar positive results in their longitudinal study on school connectedness. However, their study differed in that they examined both school connectedness and social connectedness (had friends they trusted and could depend upon) with 2678 students across 26 secondary schools. Higher school and social connectedness in grade 8 was associated with lower depressive symptoms, substance abuse, and better school completion 4 years later. However, low school connectedness but high social connectedness was associated with an elevated risk of anxiety/depression symptoms, smoking, drinking, and using marijuana in grade 10.

Results from McNealy et al (2002) and Catalano et al (2004) provide suggestions for enhancing school connectedness. McNealy et al in their re-evaluation of the *National Longitudinal Study on Adolescent Health* found that schools that had positive classroom management practices and climates, tolerant disciplinary policies, smaller school size, and opportunities for youth participation in extracurricular activities were associated with higher school connectedness. Catalano et al. demonstrated that schools are able to promote school connectedness through training teachers in prosocial and cooperative learning, teaching children social and emotional skills and providing parents with training in behavior management, academic support, and skills to reduce substance abuse.

DATA SOURCES FOR SCHOOL CONNECTEDNESS

The McCreary Centre Society collects data on adolescents' perceptions of school connectedness in the *Adolescent Health Survey* and the survey for youth in custody with the following questions, "How do feel about going to school? How much do you feel teachers care about you?"

As well, the *British Columbia School Satisfaction Survey* asks students "Do you like school?" "Do you feel welcome at your school?"

DISCUSSION

According to the 2008 BC Adolescent Health Survey, *A Picture of Health*¹⁶

Feeling connectedness to school is linked to better physical and emotional health and to reduced risk taking. The majority of students reported liking school somewhat (65%). Females were more likely than

¹⁶ 2008 BC Adolescent Health Survey: A Picture of Health- see http://www.mcs.bc.ca/pdf/AHSIV_APictureOfHealth.pdf. Accessed Jan. 7, 2011.

males to like school very much (23% vs. 17%) and to report a greater sense of belonging and connectedness to school and with their teachers. As in 2003, students in Grade 7 were more likely to report liking school very much, and to demonstrate higher school connectedness, compared to students in later grades. Students in Grades 9 through 11 felt the least connected to school. A total of 28% of students skipped at least one full day of school in the past month. Students in higher grades were more likely than students in younger grades to skip school. Youth who skipped school in the past month felt less connected to school and had more trouble getting along with teachers and peers compared to students who did not skip school. As students aged, they were more likely to skip school. Results: Grade 7- 13%; Grade 8- 17%; Grade 9- 25%; Grade 10-30%; Grade 11- 35%; Grade 12- 45%. Importantly, students who have been physically and sexually abused are nine times less likely to report suicidal ideation if they have high levels of school connectedness than if they report low levels.

In 2003, The McCreary Centre Society's *BC Adolescent Health Survey* (2003) explored school connectedness to self-reported health. Their fact sheet ¹⁷ describing these results found the following:

HEALTH IMPACT

Youth who had high levels of school connectedness were two-thirds less likely to report having made a suicide attempt than those with lower connectedness. Highly connected males were 64% less likely, and females 72% less likely, to have made a suicide attempt in the past 12 months. School connectedness was also linked to healthier eating behaviours. Females with high school connectedness were a third less likely to report binge eating or gorging and were half as likely to report vomiting after eating

RISK TAKING BEHAVIOURS

Males were 40% less likely to report that they had got somebody pregnant, and female youth were half as likely to have been pregnant if they reported high levels of school connectedness compared to those with lower levels of connectedness. School connectedness is linked to lower risk for violence. Youth were two-thirds less likely to carry a weapon if they had high levels of school connectedness. Male youth were half as likely to get into a physical fight and female youth 65% less likely if they were highly connected to school. This was a slightly stronger correlation than in 1998. School connectedness also reduced the odds that a youth reported illegal drug use. Youth who showed strong connections to school were two-thirds less likely to use drugs than their less connected peers.

SAFE AND INCLUSIVE SCHOOLS FOSTER HEALTHY YOUTH

Binge drinking is also influenced by school connectedness, with highly connected youth being almost half as likely as their less connected peers to indulge in binge drinking – although the influence of school has declined slightly since 1998. Similarly, the odds of tobacco smoking and regular marijuana use are also

¹⁷ 2003. BC Adolescent Health Survey. Fact sheet - Connections to School Among BC Youth- see http://www.mcs.bc.ca/pdf/school_connections_ahs_3_fs.pdf. Accessed Jan. 7, 2011.

reduced with strong school connectedness. Males are about half as likely to participate in either if they have strong connections to school, and females two-thirds less likely. The link between school connectedness and lower drinking and driving has gotten stronger over the past years. Youth who are highly connected to school are now about half as likely to report they drink and drive as those who are less connected.

SAFETY MATTERS

Feeling safe at school is strongly linked to better physical and emotional health, and reduced risk taking, especially among younger students.

Additionally, The McCreary Centre Society conducted surveys on school connectedness with youth in custody. In their report, *Time Out II: A Profile of BC Youth in Custody* (2004)¹⁸

Youth in custody said they were in grades seven through 12, with the majority in grades 10 and 11. Still, the majority of these youth have been expelled or suspended from school at some time: 92%, compared to 96% in the 2000 survey. The main reasons include threatening, assaulting or fighting with other students; not attending classes regularly; smoking, drinking or doing drugs at school; having a weapon at school, and cheating. A few youth said they had been suspended or expelled for dealing drugs at school. These questions were combined to give a score between zero and one. A high score is associated with a high degree of connection, while a lower score is associated with less connection. Youth in custody had an average school connectedness score of .55, lower than youth in school, who had an average score of .67. More than half of youth in custody (53%) didn't like school, much higher than the 21% of youth in school. Forty percent of youth in custody liked school, and 7% liked it very much. Among youth in custody, 25% felt their teachers cared about them 'quite a bit or very much', compared to 28% of youth in school; 49% got along with their teachers, compared to 82% of youth in school; and 64% felt they got along with other students, compared to 85% of youth in school.

The BC Ministry of Education's *School Satisfaction Survey*¹⁹ asked students if they liked school. According to statistics for 2009/2010, the following reported liking school: 58% (Grade 3/4), 47% (Grade 7), 38% (Grade 10) and 44% (Grade 12). When asked if students believed adults in the school treat all students fairly, the following agreed many or all times: 77% (Grade 3 and 4), 60% (Grade 7), 44% (Grade 10) and 47% (Grade 12). For the question, do you feel welcome at your school? The percentage of student responses for those who chose many times or all the time: Grade 3 and 4 (80%); Grade 7 (75%); Grade 10 (65%), Grade 12 (69%).

¹⁸ Time Out II: A profile of BC Youth in Custody. 2004. The McCreary Centre Society See http://www.mcs.bc.ca/pdf/time_out_2.pdf. Accessed Jan. 8, 2011.

¹⁹ BC Ministry of Education School Satisfaction Survey. See http://www.bced.gov.bc.ca/sat_survey/

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'School Connectedness'.

Summary Assessment						
School Connectedness						
			Magnitude	Significance / Impact	Modifiability	Data Availability/Validity
<i>Concept/Indicator</i>	<i>Age Group (Years)</i>	<i>Estimated Prevalence Among B.C. Children</i>	<i>Proportion of BC child /youth population to which concept/indicator applies</i>	<i>Association between concept and health/well-being dimension</i>	<i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	<i>Existence and validity of information for the component indicator(s) for each concept</i>
School Connectedness	6-19	330,456	High	High	Medium	High

The pediatric population **Magnitude** of the potential indicator is assessed as **High**. This is based on the BC pediatric population of children 6-19 yrs or 703,098 of which 47% of Grade 10 students who answered The BC Ministry of Education's *School Satisfaction Survey* indicated that they 'don't like school'. The resulting estimated prevalence amongst BC children is 330,456, which is above 10% of the total pediatric cohort of children in BC.

The **Significance** of the concept as indicated by the evidence of impact on an individual's health and well-being is assessed as **High**. There is strong evidence of the effects of school connectedness on adolescents for mitigating emotional distress (including suicide involvement and eating disorders), delinquent behavior, and substance abuse. From a number of protective factors supporting youth (e.g., school connectedness, parent-family connectedness, parental expectations for academic achievement, youth involvement in religious activities), Resnick et al (1997) found that that school connectedness was the strongest protector against substance use, school absenteeism, early sexual initiation, violence, and risk of unintentional injury (such as drinking and driving or not wearing seat

belts). Second only to family connectedness, school connectedness also protected youth from emotional distress, eating disorders, and suicidal ideation and attempts.²⁰ For younger children, school connectedness is protective for emotional distress and externalizing behavior; enhancing coping and self-confidence.

The **Modifiability** of the potential indicator is assessed as **Medium**. The rating of medium for this review is based on the assessment that while interventions are available, a wide range of activities appear necessary for promoting school connectedness. Two methods have been recommended for promoting school connectedness: a ‘whole school approach’ and school based interventions. The whole school approach is recommended by The Centres of Disease Control and Prevention.²¹ They recommend the following: (1) create decision-making processes that facilitate student, family and community engagement; academic achievement; and staff empowerment; (2) provide education and opportunities to enable families to be actively involved in their children’s academic and school life; (3) provide students with the academic, emotional, and social skills necessary to be actively engaged in school, (4) use effective classroom management and teaching methods to foster a positive learning environment; (5) provide professional development and support for teachers and other school staff to enable them to meet the diverse cognitive, emotional, and social needs of children and adolescents; and, (6) create trusting and caring relationships that promote open communication among administrators, teachers, staff, students, families, and communities. Although the site indicates these are evidence-based recommendations, no research was presented to confirm this.

An example of an intervention whose intended outcome is improved school connectedness is The Search Institute’s *Building Assets--Reducing Risks* (BARR). BARR is a multifaceted school-based prevention program designed to decrease the incidence of substance abuse (tobacco, alcohol, and other drugs), academic failure, truancy, and disciplinary incidents among 9th-grade youth. This curriculum consists of 33 sequential, 30-minute group activities delivered weekly throughout the school year by teachers and/or school staff. The curriculum includes 10 general content areas--building a connected community, goals, leadership, communication, assets,

²⁰ Resnick MD, Bearman PS, Blum RW, et al. Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health. *JAMA* 1997;278(10):823–832.

²¹ Centres of Disease Control and Prevention. See <http://www.cdc.gov/Features/ConnectToSchool/#one>. Accessed February 23, 2011.

grief and loss, bullying, diversity, risky behavior, and dreams--with the following objectives: (1) building social competency by strengthening positive interpersonal relationships with peers and teachers/school staff; (2) increasing student engagement in the high school academic experience; and, (3) preventing substance abuse by reinforcing a “no use” message (i.e., any use of drugs is illegal, against school policy, and unhealthy for minors). The National Registry of Evidence-based Programs and Practices (NREPP)²² associated with the National Clearinghouse for Alcohol and Drug Information rated the research examining the efficacy of this program for promoting school connectedness at 1.0/4.0. The study was criticized for problems with intervention fidelity, attrition and missing data, lack of documentation for potential confounding variables and type of analyzes used. Recently, the U.S. Department of Education announced that the Search Institute’s BARR has been selected as one of America’s 2010 Investing in Innovation Fund’s (i3) highest-rated programs and has provided funding to expand the program and replicate the research.

The assessment of this potential indicator for **Data Availability/Validity** is rated as **High**. The high rating is indicated as there are multiple sources of data available for acquiring a measure of school connectedness in British Columbia. The McCreary Centre Society *Adolescent Health Survey* (AHS) targets a representative sample of youth in Grades 7-12. The AHS topics include: school achievement; common health problems, chronic illness and disabilities; body image and weight; drugs, alcohol and tobacco use; sexual behaviour; injuries and injury prevention, such as seat belt use; emotional health; experiences of violence or discrimination; help seeking behaviour; use of technology; and exercise, sports and leisure activities. Modified versions of the AHS have been used to better understand the experiences and needs of special high-risk populations of youth. These special studies have focused on marginalized and street-involved youth, youth enrolled in alternate education programs and young people in youth custody centres. Survey coverage is high – the fourth survey was conducted in all but nine of the province’s 2007-2008 School Districts, with 29,315 students providing complete data records. The survey is designed to produce estimates of population characteristics with a maximum standard error of 3.5%. Although the survey has been given since 1992, administration has not been consistent (conducted in 1992, 1998 and 2008).

²² National Registry of Evidence-based Programs and Practices (NREPP). See <http://nrepp.samhsa.gov>. Accessed February 22, 2011.

On an annual basis, the British Columbia *School Satisfaction Survey* is available to students in grades 4, 7, 10 and 12, and their parents and school staff. The Satisfaction Survey is a province-wide census of target respondents, providing a representative picture of the education experience in British Columbia. The Ministry of Education reports that technical analyses were conducted in 2005, 2006 and 2007, indicating that the survey is both valid and reliable. Data is collected online for three months at the individual school and school district levels. Data is then amalgamated and reported at the Health Service Delivery Area and Health Authority levels. Students denoted 'Aboriginal' in the School Satisfaction Surveys self-identify.

Finally, a new survey has just been developed for middle school students in British Columbia that examines school connectedness. Called the *Middle Years Development Instrument*,²³ it is a self-report survey completed by children in middle childhood. It is designed to collect population-level information on five domains pertaining to children's overall health and well-being: (1) Social and emotional development- Empathy, optimism, happiness, prosocial behaviour, self-esteem, psychological well-being; (2) Connectedness- Connectedness with adults at home, in school, and in the neighbourhood, peer belonging, friendship intimacy, awareness of community programs; (3) School experiences- Academic self-concept, school supportiveness, school belonging, future goals, experiences with bullying; (4) Physical health and well-being- Overall health, body image, nutrition habits, sleep; (5) Constructive use of after-school time- Participation in organized and structured activities and programs, after-school time use, wishes and barriers for after-school activities. At this point, it is too early to tell whether the survey will be given on a regular basis, if it is reliable or whether data (instead of summaries) will be made available to policy and community planners, government, developmental specialists, and researchers.

Based on the summary assessment of the **School Connectedness** concept, it is recommended that the indicator ***percentage of children reporting that they like and feel welcomed at school***, based on the British Columbia *School Satisfaction Survey* be considered as a **Core indicator** of child health and well-being in British Columbia. This data could be augmented with information from the McCreary Centre Society's AHS when available.

RELATIONSHIP WITH PEERS

BACKGROUND AND CONTEXT

The purpose of this review was to examine the evidence of an association between relationships with peers and child health and well-being. The research associated with peer relationships and child development has changed over the past thirty years. The 1980's saw a focus on sociometric classifications (how teachers and other children rated children) and the influence of those ratings on peer relationships.²⁴ Developmental psychologists explored the influence of early peer difficulties and found it predicted later maladjustment. For example, Hymel et al (1990)²⁵ found that children who were aggressive or rejected by their peers in grade 2 exhibited internalizing or externalizing problems in grade 5. This led to another avenue of research--skills training—that is, teaching children to initiate and maintain social relationships and to resolve conflicts.^{26,27} The 1990s and to some degree, the 2000s, saw research focused on identifying the characteristics that make up popular and unpopular children. For example, a meta-analysis in 1993 by Newcomb et al explored the characteristics of children described as popular, rejected, neglected, controversial, and average.²⁸ Other avenues of research looked at the influence of temperament²⁹ and emotion³⁰ on peer relationships. In the last decade, this field appears to focus on the causes and impacts of bullying, which will be discussed later in the Safety Theme.

²³ *Middle Years Development Instrument*. See http://educ.ubc.ca/research/ksr/docs/mdi_report_sept2010.pdf. Accessed February 24, 2011.

²⁴ Asher SR, Hymel S, Renshaw, PD. Loneliness in children. *Child Development*. 1984; 55:1456-1464.

²⁵ Hymel S, Rubin K, Rowden L, LeMare L. Children's peer relationships: Longitudinal prediction of internalizing and externalizing problems from middle to late childhood. *Child Development*. 1990; 61(6); 2004-2021.

²⁶ Bierman K L, Furman W. "The effects of social skills training and peer involvement on the social adjustment of preadolescents. *Child Development*. 1984; 55:151-162.

²⁷ Asher SR, Renshaw PD, Hymel S. Peer relations and the development of social skills. In *The Young Child: Reviews of Research*. Vol. 3, edited by S. G. Moore and C. R. Cooper. Washington, D.C.: National Association for the Education of Young Children, 1982.

²⁸ Newcomb AF, Bukowski WA, Pattee L. Children's peer relations: a meta-analytic review of popular, rejected, controversial and average sociometric status. *Psychological Bulletin*. 1993; 113(1): 99-128.

²⁹ Sanson A, Hemphill SA, Smart D. Connections between temperament and social development: A review. *Social Development*. 2004; 13:142-170.

³⁰ Dougherty LR. Children's emotionality and social status: A meta-analytic review. *Social Development*. 2006;15(3):394-417.

No recent systematic reviews or meta-analyses were found which describes child or youth outcomes associated with peer relationships aside from those associated with bullying. Three studies are presented which explored peer relationships related to: aggressive and prosocial functioning, academic outcomes, and at-risk behavior.

KEYWORDS

Peer relationships, prosocial friendships

VOLUME REPORT FOR RELATIONSHIPS WITH PEERS AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
194	35	9	3
Excluded if not related to youth outcomes and relationship with peers	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Studies=3

SUMMARY REVIEW OF STUDIES FOR PEER RELATIONSHIPS AND CHILD HEALTH AND WELL-BEING

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
Chung-Hall (2010)	Aggressive and Prosocial Peer Group Functioning: Effects on Children's Social, School, and Psychological Adjustment	Ontario; N=330 (149 boys, 181 girls). \bar{X} age= 10.08 years	Cross-sectional; HLM	Prosocial behavior, Positive sociometric nominations, Teacher-rated competence, Self-perceptions of competence, Aggression, Peer rejection, Learning problems	Children in prosocial group contexts were likely to be accepted by their peers, do well in school, and report positive perceptions of their social and behavioral skills. Children in aggressive group contexts tended to experience high levels of peer rejection and have low school-related competence.
Welsh (2011)	Linkages Between Children's Social and Academic Competence: A Longitudinal Analysis The current study seeks to better understand the direction of influence between social and academic competence by analyzing a longitudinal data set across a 3-year period.	California, Riverside Social Development Project. N=163; 88 females; K-grade 3	Longitudinal: Structural equation modeling Data: Social acceptance, prosocial and aggressive behaviors assessed by teachers and peers	Academic achievement (language and math report-card grades and work skills).	Academic achievement directly influenced social competence from both first to second and second to third grade, and social competence was reciprocally related to academic achievement from second to

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
					third grade
Pokhrel (2010)	Peer group self-identification as a predictor of relational and physical aggression among high school students	California; N=1614; X age = 15 years; 52% female	Longitudinal, Self report peer group association at baseline and 1 year later Regression analyses	Relational and Physical aggression	Adolescents who self-identified with high-risk youth/deviants reported significantly higher levels of physical and relational aggression 1 year later even after controlling for baseline aggression levels and SES.

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Welsh M, Parke RD, Widaman K, O'Neil R. Linkages Between Children's Social and Academic Competence: A Longitudinal Analysis. *Journal of School Psychology*. 2011 Nov;39(6):463-82.

RESULTS FOR PEER RELATIONSHIPS

The results indicated that peer group affiliation is associated with behavior and self perception in both children and adolescents. Chung-Hall and Chen (2010) found that a child's peer group serves as an important context for their social, school, and psychological adjustment. Children in prosocial group contexts were likely to be accepted by their peers, do well in school, and report positive perceptions of their social and behavioral skills. Children in aggressive group contexts tended to experience high levels of peer rejection and have low school-related competence.

Pokhrel et al (2010) looked at how adolescents' self-identify in high school (goths, jocks, brains, popular) and their level of aggression one year later. The authors found that adolescents, who self-identified with high risks groups such as gang members, stoners, burnouts, druggies, or rappers, reported significantly higher levels of physical and relational aggression one year later, even after controlling for baseline aggression levels and SES. Interestingly, those adolescents self-identifying as 'elites/socials' or the popular kids, reported greater relational aggression one year later.

Welsh et al (2005) confirms the relationship between social and academic competencies found by Chung-Hall and Chen (2010). Welsh et al found that academic achievement directly influenced social competence from both first to second and second to third grade, and that social competence was reciprocally related to academic achievement from second to third grade. Positive social behaviors (as opposed to negative social behaviors) were directly related to later academic competence over time in this sample of young children. As well, poor academic performance as early as first grade led to poor social performance in later grades; reinforcing the authors' recommendation for early academic interventions in order to increase both academic and social competence in early grades.

DATA SOURCES FOR PEER RELATIONSHIPS

The McCreary Center Society's 2008 *Adolescent Health Survey* and *The National Longitudinal Study of Children and Youth* both collect data on peer relationships.

DISCUSSION

The study described earlier by Bushnik (2005)³¹ for Statistics Canada, also looked at peer relationships and mental health. The purpose of this report was to examine the link between changes in relationships with parents and

³¹ Bushnik T. *Youth depressive symptoms and changes in relationships with parents and peers*. Statistics Canada. 2005. See <http://www.statcan.gc.ca/pub/89-599-m/89-599-m2005002-eng.pdf>

peers during adolescence, and adolescent depressive symptoms, using data from the *National Longitudinal Survey of Children and Youth (NLSCY)*.

The youth in this study represented approximately 359,600 young Canadians who were 10 and 11 years old in 1994/95. By 2000/01 (Time 2), they were 16 and 17 years old. Table 1 presents the demographic profile of these youth. At Time 2, a little over half were male (51.3%), and 52.1% were 17 years old. The majority of these youth lived with both parents (85.1%) and in a household where the income was, on average, almost three times greater than the LICO. Two years previous, most of these same youth had lived with both parents (85.9%) and had a household income that was, on average, slightly less than that of 2000/01. When compared, male and female adolescents were found to be similar across all demographic characteristics at both Time 1 and Time 2. The following Table describes the mean scores of relationships with peers for youth aged 16 and 17 years for 2000/2001.

		All youth		Males		Females	
Possible range of Values		Mean (SE)	Population N	Mean (SE)	Population N	Mean (SE)	Population N
Time 1 (1998/99)							
Friendship score	0 to 16	13.5 (0.13)	359 600	13,1 (0.20)	184 400	13.9 (0.15)	175 300
Time 2 (2000/01)							
Friendship score	0 to 16	13.6 (0.13)	359 600	13.6 (0.19)	184 400	13.6 (0.18)	175 300
Stressful events	0 to 4	1.0 (0.05)	359 600	0.9 (0.06)	184 400	1.1 (0.08)	175 300
		% (SE)	Population N	% (SE)	Population N	% (SE)	Population N
Change from Time 1 to Time 2							
Friendship score	Increased	35.8 (2.52)	128 900	40,7 (3.65)	75 000	30.7 (3.48)	53 900
	No change	28.7 (2.22)	103 200	27,8 (3.44)	51 300	29.6 (2.95)	51 900

Decreased	35.5 (2.34)	127 600	31,5 (3.28)	58 000	39.7 (3.47)	69 500
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By Time 2, as many youth (35.8%) reported that their friendship score had increased as those who reported that it had declined (35.5%). As the bold numbers indicate, significant differences in the friendship score were noted between genders for time 1, with girls reporting higher scores. However, the gap in male and female perception of friendships that existed at ages 14 and 15 had closed by the time these youth were 16 and 17 years old.

The McCreary Center Society's 2008 *Adolescent Health Survey*³² also asks about peer relationships. According to the report,

Youth were asked whether their friends would be upset if they engaged in a number of behaviours including getting arrested, beating someone up, carrying a weapon, getting pregnant or getting someone pregnant, dropping out of school, getting drunk and using marijuana. Youth with friends who would disapprove of these behaviours were less likely to binge drink than students whose friends had fewer pro-social attitudes. Having peers with healthy attitudes about risky behaviours was the strongest protective factor for binge drinking and was even more apparent for females than it was for males (p 56). In the 2004 survey, 64% of youth in custody felt they got along with other students, compared to 85% of youth in the community sample.

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'Peer Relationships'.

Summary Assessment						
Peer Relationships						
			Magnitude	Significance / Impact	Modifiability	Data Availability/Validity
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among	Proportion of BC child /youth population to	Association between concept and	Degree the concept/indicator(s) be reasonably	Existence and validity of information for the

³² Smith, A., Stewart D., Peled, M., Poon, C., Saewyc, E. and the McCreary Centre Society (2009). *A Picture of Health: Highlights from the 2008 BC Adolescent Health Survey*. Vancouver, BC: McCreary Centre Society.

		<i>B.C. Children</i>	<i>which concept/indicator applies</i>	<i>health/well-being dimension</i>	<i>changed through public policy or other intervention</i>	<i>component indicator(s) for each concept</i>
Relationship with Peers	6-19	703,098	High	Low	High	High

The pediatric population **Magnitude** of the potential indicator is assessed as **High**. This is based on a pediatric population of 6-19 yrs or 703,098 children, which is above 10% of the total pediatric cohort of children in BC.

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual’s health and well-being is assessed as **Low**. Although it seems logical that close, caring friendships would be a protective factor for children, the evidence reviewed did not strongly support this. The data shows that most people get along with others at school but that friendships wax and wane over time. What appears to be more protective for children and adolescents is their self-identification with prosocial groups. Both children and adolescents who identify with prosocial peers have better social relationships and do better in school. Identification with non prosocial peers is associated with greater physical and relational aggression and poorer academic achievement. However, Boivin (2005)³³ suggests, peer relationships can serve as a risk factor; children who experience peer relationship difficulties tend to be more aggressive, hyperactive and oppositional, but also more socially withdrawn and less sociable. This will be addressed under the ‘Bullying’ concept.

The **Modifiability** of the potential indicator is assessed as **High**. Promoting positive peer relationships falls under the rubric of social-emotional learning. According to the Collaborative for Academic, Social, and Emotional Learning (CASEL), “Social-emotional learning (SEL) is the process of acquiring the skills to recognize and manage emotions, develop caring and concern for others, make responsible decisions, establish positive relationships, and handle challenging situations effectively and ethically”.³⁴ Research has shown that SEL is not only fundamental to children's social and emotional development but also their health, ethical development, citizenship, academic

³³ Boivin M. The origin of peer relationship difficulties in early childhood and their impact on children’s psychosocial adjustment and development. In: Tremblay RE, Barr RG, Peters RDeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development; 2005:1-7. Available at: <http://www.child-encyclopedia.com/documents/BoivinANGxp.pdf>. Accessed Feb. 25, 2011.

learning, and motivation to achieve. For example, Guerra and Bradshaw (2008)³⁵ found that SEL increases a student's positive sense of self, self control, decision-making skills, moral system of belief, and prosocial connectedness. Emotional disturbances such as anxiety, if not addressed, can result in poor social and coping skills, reduced social interactions, low self-esteem and lower academic achievement.^{36, 37} In a recent meta-analysis of 213 school-based universal SEL interventions (n=270,034 children), Durlak, Weissberg, Dymnicki, Taylor and Schellinger (2011)³⁸ found that compared to controls, children in SEL programs exhibited significantly improved social and emotional skills, attitudes, behavior and academic performance.

Data Availability/Reliability for the potential indicator is assessed as **High** due to the multiple sources of data being collected on peer relationships. Specifically, the NLSCY asks: 1) During the past 6 months, how well has this child gotten along with other kids, such as friends or classmates (excluding brothers or sisters)? 2) About how many close friends does he have? 3) About how many days a week does he do things with friends (outside of school hours)? The McCreary Centre Society *Adolescent Health Survey* queries "how your friends would feel if you got involved in risky or anti-social activities". Information describing both the NLSCY and the AHS has been presented previously and are also summarized in Annex H-1.

Based on the summary assessment of the 'Relationship with Peers' concept, it is **NOT** recommended that it be considered an indicator of child health and well-being in British Columbia. As a protective factor, the research evidence does not support the concept as having a significant impact on child health and well-being. Peer relationships as a risk factor will be addressed in the Safety theme.

³⁴ Definition of SEL. See <http://www.casel.org/basics/definition.php>. Accessed February 25, 2011.

³⁵ Guerra N, & Bradshaw C.P. Linking the prevention of problem behaviors and positive youth development: Core competencies for positive youth development. In N. G. Guerra, & C. P. Bradshaw (Eds.), *Core competencies to prevent problem behaviors and promote positive youth development. New Directions in Child and Adolescent Development*. 2008: 122; 1-17.

³⁶ Masia-Warner C, Nangle DW, & Hansen DJ. Bringing evidence-based child mental health services to the schools: General issues and specific. *Education and Treatment of Children*. 2006: 29 (2); 165–172.

³⁷ McLoone J, Hudson JL, & Rapee RM. Treating anxiety disorders in a school setting. *Education and Treatment of Children*. 2006: 29 (2); 219-242.

³⁸ Durlak JA, Weissberg RP, Dymnicki AB, Taylor RD & Schellinger KB. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*. 2011: 82(1); 405-432.

CONSTRUCTIVE USE OF TIME

BACKGROUND AND CONTEXT

'Constructive use of time' describes participation in out-of-school activities such as team sports, after school programs, community service and volunteering, mentoring programs, arts programs and school-based clubs. The Search Institute³⁹ includes constructive use of time as one of its building blocks of external assets that support positive development for youth. Based on their research, they recommend that youth spend time in: (1) creative activities (three or more hours per week in lessons or practice in music, theater, or other arts); (2) youth programs (three or more hours per week in sports, clubs, or organizations at school and/or in community organizations); (3) religious community (spends one hour or more per week in activities in a religious institution); and (4) time at home (out with friends "with nothing special to do" two or fewer nights per week). *The Harvard Family Research Project*⁴⁰ has been conducting research on the effectiveness of out-of-school programming since 1983. They describe the expanded learning opportunities for children as consisting of afterschool programming, summer learning opportunities, extended day and year schools, community schools, school-community networks, and online learning opportunities (Little, 2009).⁴¹

KEYWORDS

Constructive use of time, after school programs, out-of-school programs, extracurricular activities

VOLUME REPORT FOR CONSTRUCTIVE USE OF TIME AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
115	20	6	4
Excluded if not related to youth outcomes and constructive use of time	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=2; studies=2

³⁹ The Search Institute- see <http://www.search-institute.org/about> Retrieved February 6, 2009

⁴⁰ The Harvard Family Research Project- see <http://www.hfrp.org/> Retrieved February 5, 2009

⁴¹ Little, P. (2009). *Supporting Student Outcomes Through Expanded Learning Opportunities*. Harvard Family Research Project. See <http://www.hfrp.org/out-of-school-time/publications-resources/supporting-student-outcomes-through-expanded-learning-opportunities>. Retrieved February 5, 2009.

SUMMARY OF META-ANALYSES AND SYSTEMATIC REVIEWS FOR CONSTRUCTIVE USE OF TIME ON CHILD HEALTH AND WELL-BEING

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Durlak (2010)	A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents	68 studies	Compared to controls, participants in after school programs designed to address social-emotional learning demonstrated significant increases in their self-perceptions and bonding to school, positive social behaviors, school grades/academic achievement and, significant reductions in problem behaviors.
Lauer (2006)	Out-of school time programs: a meta-analysis of effects for at-risk students	35 studies	This review explored the influence of OST designed to assist at-risk students in reading and/or math. Compared to control or comparison groups, those who participated in OST showed significant but small positive effects for reading and math achievement. Programs designed for direct tutoring had larger effects. OST for reading benefited both elementary and secondary students but math benefits occur primarily for secondary students.

SUMMARY REVIEW OF STUDIES FOR CONSTRUCTIVE USE OF TIME ON CHILD HEALTH AND WELL-BEING

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
Mahoney (2005)	Afterschool program participation and the development of child obesity and peer acceptance	USA; N=439; at risk students (Hispanic and Black living in poverty); Grades 1-3	Longitudinal; 4 assessments over 2 years; teacher/parent surveys; student surveys in grade 4 re: peers	BMI taken 2 years before and 3 years after; peer relsps	Over time, the BMI of ASP participants was significantly less than those of non ASP students (21% vs. 33% controlling for baseline BMI). Also, ASP increased popularity ratings in grade 3
Fedricks	Developmental benefits of extracurricular involvement: do peer characteristics	USA; N=498 (54% female);	Longitudinal cohort study; 3	Risk behaviors, school	Results showed developmental

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
(2005)	mediate the link between activities and youth outcomes Explored the positive and negative associations for a wide range of ASP	middle class; 95% white	waves: gr.9, 10, 12. ANCOVAs	engagement, depression, self-worth, peer groups by activity involvement	benefits for adolescents involved in extracurricular activities such as greater school belonging, lower depression, and more prosocial friends.

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Durlak J, Weissberg R, Pachan M. A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology* 2010 Jun 1; 45(3):294-309.

Fredicks J, Eccles J. Developmental benefits of extracurricular involvement: do peer characteristics mediate the link between activities and youth outcomes? *Journal of Youth and Adolescence*. 2005; 34(6): 507-520.

Laurer P, Akiba M, Wilkerson SB, Snow D, Martin-Glen, ML. Out-of school programs: a meta-analysis of effects for at-risk students. *Review of Educational Research*. 2006; 76(2): 275-313.

Mahoney JL, Lord, H. Afterschool program participation and the development of child obesity and peer acceptance. *Applied Developmental Science*. 2005; 9(4): 202-215.

RESULTS FOR CONSTRUCTIVE USE OF TIME

The results indicate that both children and adolescents benefit from structured programming either after school or during the summer. The studies presented include children from both advantaged and disadvantaged backgrounds. As seen below, the benefits of these programs are associated with the following positive outcomes: physical health, mental health, prosocial behavior, peer relationships, and academic achievement.

Health outcomes

In a 3 year longitudinal study, Mahoney et al (2005) found that young children at-risk (grade 1-3) in an afterschool program (ASP) that focused on promoting academic and social competence and physical health had positive effects over time. The content of the ASP included a snack, homework, enriched learning (computers, music, etc), and supervised recreation. Participants of the program had significantly lower obesity rates and higher peer acceptance than nonparticipants at follow-up.

Academic achievement

Laure et al (2006) also looked at the effects of out-of school programs for at-risk students in their meta-analysis of 35 outcome studies. They found that those who participated in these programs had significant gains in reading or math achievement or in both for elementary, middle or high school students. Results did not differ on when the program was given, i.e., after school or during the summer.

Positive Developmental Outcomes

Programs which are designed to promote personal and social skills in children and adolescents were shown to result in a myriad of benefits based on a meta-analysis of 68 studies (Durlak et al, 2010). Compared to controls, participants in after school programs designed to address social-emotional learning demonstrated significant increases in their self-perceptions and bonding to school, positive social behaviors, school grades/academic achievement and, significant reductions in problem behaviors.

Fredricks and Eccles (2005) looked at the positive and negative developmental effects of adolescent participation in a number of different kinds of afterschool programs, including: 1) team sports; 2) school involvement activities (e.g., student government, cheer leading); 3) performing arts (band, dance, and drama) and 4) academically-orientated clubs. They found differences across types of participation activity. Athletic participation was associated with a higher sense of school belonging, greater alcohol use, more favorable attitudes toward school, lower rates of depression and a higher percentage of prosocial peers compared to non-athletes. Those who participated in school involvement activities had a higher sense of school belonging, sense of self-worth, prosocial peers and lower depression compared to nonparticipants. Those who participated in arts programs and academic clubs reported lower alcohol use and more favorable perceptions of their peers than nonparticipants. The amount of

time spent in organized school clubs was positively associated with school belonging, school affect and self-worth and negatively predictive of depression, risk behavior and alcohol use. Time in organized sports was positively associated with school engagement and negatively associated with depression and risk behaviors. Longer time in clubs and sports was positively associated with more prosocial peers.

DATA SOURCES FOR CONSTRUCTIVE USE OF TIME

Data for constructive use of time is available for both adolescents and middle school students from three sources:

1) *The British Columbia School Satisfaction Survey*. “At school, do you participate in activities outside class hours (for example, clubs, dance, sports teams, music?)”

2) *The Adolescent Health Survey*. “In the past 12 months, how often have you volunteered (helped others without pay) for example, helping a charity, unpaid babysitting, or yard work?”

3) *Middle Years Development Instrument* (for grade 4 students), Human Early Learning Partnership. “Where do you go after school? “; “During last week, after school (3-6 pm), did you participate in the following activities: individual sports with a coach or instructor, team sports with a coach or instructor, art or music lessons, educational lessons or activities, youth organizations?”.

DISCUSSION

For the younger children, *Our children’s voices: The Middle Years Development Instrument*⁴² describes the developmental health and well-being of children in middle childhood in Vancouver, British Columbia. The following table describes after-school activities between the hours of 3-6 pm for these grade 4 students. As seen by the table below, the majority of middle school children go home or to an after school program.

⁴² *Our children’s voices: The Middle Years Development Instrument* –see http://www.uwlm.ca/sites/default/files/webfm/Reports%20and%20Resources/MDI%20Report_low-rez_final.pdf

Where do children go after school?

How often do you go to these places after school until 6pm?	Never	Once or twice a week	Three or four times a week	Every Day
I go home.	9%	15%	24%	52%
I go someplace else, for example, a family member's home, or other places.	48%	35%	11%	6%
I go to a park, playground, or community centre.	49%	37%	10%	4%
I go to a friend's house.	47%	44%	7%	1%
I go to an afterschool program/daycare.	61%	19%	10%	10%
I stay at school to participate in afterschool activities.	67%	24%	6%	4%
I hang out at the mall or stores.	64%	28%	7%	1%

Source: *Our children's voices: The Middle Years Development Instrument, 2010*

The next table describes student's organized, supervised after-school programs and activities.

During last week, after school (3pm - 6pm), did you participate in:	No	Yes
Individual sports with a coach or instructor	60%	40%
Team sports with a coach or instructor	69%	31%
Art or music lessons	65%	35%
Education lessons or activities	67%	33%
Youth organizations (eg: Scouts, Boys & Girls Clubs)	88%	12%

Source: *Our children's voices: The Middle Years Development Instrument, 2010*

The *Adolescent Health Survey IV* also measures constructive use of time. In addition to being asked about their involvement in extracurricular activities, youth were asked to rate how meaningful their activities were to them and how much they felt their ideas were listened to and acted upon in these activities. Youth who were the most engaged in their activities were less likely to have seriously considered or attempted suicide in the past year, compared to those who were involved in activities that were not meaningful or those where they felt they had

little or no input. Regarding volunteering, 62% of youth reported that they volunteered in the past year, with girls volunteering more than boys (70% vs. 53%). Fifty-two percent of youth in care volunteered in the past year.

According to the *British Columbia School Satisfaction Survey* for 2009/2010, for the question, where do you do your physical activity (outside of school): with clubs or sports teams in the community, at recreation centres, with other groups, on my own). The percentage who responded to outside of school included:

Grade 3 and 4 (45%), Grade 7 (46%), Grade 10 (53%), Grade 12 (61%).

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator ‘Constructive Use of Time’.

SUMMARY ASSESSMENT						
Constructive Use of Time						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Constructive use of Time	6-19	386,703	High	High	High	High

The pediatric population **Magnitude** of the potential indicator is assessed as **High**. This is based on a pediatric population of 6-19 yrs or 703,098 children of whom 55% of students who answered British Columbia’s School Satisfaction Survey indicated they do not participate in after school activities (lowest report across grades). The resulting estimated prevalence amongst BC children is 386,703, which is above 10% of the total pediatric cohort of children in BC.

The **Significance** of the concept as indicated by the evidence of impact on an individual’s health and well-being is assessed as **High**. There is strong evidence from the controlled studies that participation in out-of-school activities is beneficial for increasing positive social relationships, school connectedness, a sense of self worth and academic

achievement. Strong evidence also supports constructive use of time with a decrease in delinquent and problem behaviors, particularly for at-risk children. Finally, youth who participated in the *Adolescent Health Survey IV* who reported being engaged in meaningful constructive use of time were less likely to consider or attempt suicide in the past year, compared to those who were involved in activities that were not meaningful or those where they felt they had little or no input.

The **Modifiability** of the potential indicator is assessed as **High**. The type of program, the amount of time spent participating and whether the activity is meaningful are important considerations. Structured programs that support physical activity and healthy eating have been shown to improve physical health. Durlak et al (2010) found significant reductions in problem behaviors for those who participated in after school programs designed to promote social emotional learning. As well, compared to controls, participants in after school programs designed to address social-emotional learning demonstrated significant increases in their self-perceptions and bonding to school, positive social behaviors, and academic achievement. Across all school ages, at-risk students who participated in out-of school programs had significant gains in reading or math achievement according to Laurer et al (2006).

Data Availability/Reliability for the potential indicator is assessed as **High**. Two sources of data are currently being collected that looks at different aspects of constructive use of time. For students in grades 4, 7, 10 and 12, The British Columbia *School Satisfaction Survey*, annually explores participation in activities outside class hours such as clubs, dance class, sports teams, or music. Volunteering such as helping a charity, unpaid babysitting, or doing yard work is explored by the McCreary Centre Society's *Adolescent Health Survey*. Even more detailed out-of-school activities are explored by the *Middle Years Development Instrument*, for grade 4 students. Although newly developed, this survey asks the following questions: "Where do you go after school? "; and, "During last week, after school (3-6 pm), did you participate in the following activities: individual sports with a coach or instructor, team sports with a coach or instructor, art or music lessons, educational lessons or activities, youth organizations?". As reported earlier and summarized in Annex H-1, the British Columbia *School Satisfaction Survey* and the McCreary Centre Society's *Adolescent Health Survey* are reliable and valid tools.

Based on the assessment of the 'Constructive Use of Time' concept summarized here, the indicator **percentage of students involved in extracurricular activities** is **recommended** for consideration as a **Core indicator** of child health and well-being in British Columbia. Since the British Columbia *School Satisfaction Survey* is conducted annually and covers a wider range of ages, it is recommended that this survey be primarily used to track constructive use of time but supplemented with *The Adolescent Health Survey*. The high rating across all evaluation

categories (magnitude, significance, modifiability, and data availability/validity) positions the indicator as a strong candidate for inclusion amongst the Social Relationship domain.

COMMUNITY SOCIAL CAPITAL

BACKGROUND AND CONTEXT

The purpose of this review was to find evidence of an association between community connectedness, neighborhood cohesion and child outcomes. Recently, the term social capital has been used to describe community connectedness and neighborhood cohesion. Social capital is a broad term that includes social networks, social cohesion, social support, collective efficacy, and community involvement. Kawachi et al (1999)⁴³ suggests that health can be influenced by social capital through the following ways: promotion of a more rapid diffusion of health information, an increased likelihood that healthy norms or behaviour are adopted, social control over deviant health-related behaviour (collective efficacy), increased access to local services and amenities and psychosocial processes such as affective support, self-esteem and mutual respect. Waterson et al (2003)⁴⁴ provides a useful description of how social capital relates to child health by describing a cohesive neighborhood.

In a socially cohesive neighborhood, people talk to and trust their neighbors. They have plenty of local friends whom they can turn to when in difficulties and they often volunteer to babysit for each other. Local people are concerned about the local environment and its governance. They participate in voluntary and community activities and vote in local elections. Relationships even between strangers are warm and friendly. Children can play out quite safely and there is a feeling of safety in the area. Crime and vandalism rates are low. (p. 456).

Thus, social capital addresses cohesive neighborhoods and community connections, as well as social support services, social networks, social diversity and a sense of safety. A great deal of research in this area has focused on the negative effects of poverty on children and adolescent health outcomes (e.g., see Leventhal & Brooks-Gunn, 2000)⁴⁵ and whether social capital mediates the negative effects of lower familial and community resources. For

⁴³ Kawachi I, Kennedy B P, Wilkinson RG. *Income inequality and health*, Vol. 1. 1999; New York: The New Press.

⁴⁴ Waterson T, Alperstein G, Brown SS. Social capital: a key factor in child health inequalities. *Arch Dis Child*. 2004; 89:456-459.

⁴⁵ Leventhal T, Brooks-Gunn J. The neighborhoods they live in: The effects of neighbourhood residence on child and adolescent outcomes. *Psychological Bulletin*. 2000; 126 (2): 309-337.

example, higher collective efficacy (willingness of adults to intervene in the lives of neighbourhood children, helping each other, having shared values and being close-knit) has shown to mediate delinquency (Sampson, 1997)⁴⁶ and adolescent depression in economically poor neighborhoods (Aneschensel & Sucoff, 1996).⁴⁷ This review will explore the most recent evidence associated with social capital and child health and well-being.

KEYWORDS

Neighborhood cohesion, community connectedness, community networks, social capital

VOLUME REPORT FOR COMMUNITY SOCIAL CAPITAL AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
187	57	11	5
Excluded if not related to youth outcomes and community social capital	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Studies=5

⁴⁶ Sampson R.J. Collective regulation of adolescent misbehavior: Validation results from eighty Chicago neighborhoods. *Journal of Adolescent Research*, 1997; 12: 227-244.

⁴⁷ Aneschensel CS, Sucoff CA. (1996). The neighbourhood context and adolescent mental health. *Journal of Health and Social Behavior*. 1996; 37: 293-310.

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR COMMUNITY SOCIAL CAPITAL AND CHILD HEALTH AND WELL-BEING

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Sellstrom (2006)	The significance of neighborhood context to child and adolescent health and well-being: a systematic review of multilevel studies	13 studies	Neighborhood social climates, i.e., social support and control, crime, voluntary associations, residential stability, neighborhood cohesion and collective efficacy, have a low to moderate effect on child health.
De Silva (2005)	Social capital and mental illness: a systematic review	21 studies	There was an inverse relationship between individual level and ecological level social capital and common childhood mental disorders (moderate).

SUMMARY REVIEW OF STUDIES FOR COMMUNITY SOCIAL CAPITAL ON CHILD HEALTH AND WELL-BEING

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
Witherspoon (2009)	<p>Connecting the dots: how connectedness to multiple contexts influence the psychological and academic adjustment of urban youth.</p> <p>Examined multiple connectedness contexts as well as gender and ethnic influences on academic (grades) and psychological adjustment (self-esteem, depressive symptoms)</p>	<p>N=437; six grade;</p> <p>\bar{X} age =11.3 yrs.</p> <p>Ethnically diverse; 95% receiving lunch program</p>	<p>Cohort study</p> <p>Cluster analyses</p>	<p>Depression, self-esteem, academic achievement</p>	<p>Profiles of family and school connectedness had significant associations with grades. Youth with one or more above average connections to any of the contexts was associated with higher self-</p>

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
					esteem and lower depression. Engagement in multiple contexts was associated with better outcomes.
Zelden (2001)	<p>Neighborhood experiences, community connection and positive beliefs about adolescents among urban adults and youth</p> <p>Does the experience of volunteering and living in a safe neighborhood relate to positive beliefs about teens? Is sense of community connectedness associated with these beliefs?</p>	Washington, DC; N=308 teens: 13-15 years-58%; 16-18-42%; 50% male	Cross-sectional; two surveys: adults and adolescents	Beliefs about adolescents; grades	Adolescent volunteering was significantly associated with school grades. As well, a sense of safety in the neighborhood was associated with school grades.
Druker (2003)	<p>Children's health-related quality of life, neighborhood socioeconomic deprivation and social capital. A contextual analysis.</p> <p>What is the role of informal social control, social cohesion and trust for children's health?</p>	Netherlands; 36 neighborhoods; N=7236 children; aged 11-12 years	<p>Longitudinal cohort study;</p> <p>Child Health Questionnaire</p> <p>Multilevel regression analysis</p>	General health, mental health, self-esteem, behavior, satisfaction	Social capital is associated with children's physical health; mental health and behavior associated with informal social

Lead author	Study Objective	Setting/ Participants	Design/ Data Collection	Outcomes	Results/ Conclusion
					control.

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Drukker M, Kaplan C, Feron F, Os van J. Children's health-related quality of life, neighborhood socioeconomic deprivation and social capital. A contextual analysis. *Soc Sci Med*. 2003; 7: 825-41

Sellstrom E, Bremberg S. The significance of neighbourhood context to child and adolescent health and well-being: A systematic review of multilevel studies. *Scand J Public Health* 2006;34(5):544-54.

Witherspoon D, Schotland M, Way N, Hughs D. Connecting the dots: how connectedness to multiple contexts influences the psychological and academic adjustment of urban youth. *Applied Developmental Science*. 2009; 13(4): 199-216.

Zeldin S, Topitzes D. Neighborhood experiences, community connections and positive beliefs about adolescents among urban adults and youth. *Journal of Community Psychology*. 2002; 30(6):647-669.

RESULTS FOR COMMUNITY SOCIAL CAPITAL

The results from the systematic reviews and studies show that social capital is associated with child and youth health and well-being. Across multilevel studies, Sellstrom and Bremberg (2006) found that neighborhood social climates, i.e., social support and control, crime, voluntary associations, residential stability, neighborhood cohesion and collective efficacy, have a low to moderate effect on child health (10% of the variance after controlling for family characteristics). Neighborhood disadvantage (i.e., poverty) was associated with increased risk of low birth rate, behavioral problems, injuries, and maltreatment.

Along with physical health consequences, social capital was also shown to influence mental and emotional health. De Silva et al (2005) reviewed 21 studies that addressed individual level social capital (e.g., membership in groups) and ecological social capital (aggregation of individual responses to the community level) on such mental health outcomes as: depression, behavior, anxiety, conduct disorder, oppositional defiant disorder, schizophrenia, and suicide. Six of these papers focused on children, adolescents or all ages. The authors concluded that there was moderate evidence of an inverse association between social capital and child mental illness. Druker et al (2003) found that social capital was associated with children's physical health while mental health and behavior was associated with measures of informal social control.

Academic achievement was also found to be associated with social capital. Zelden and Topitzes (2002) found that adolescent volunteering and a sense of safety in the neighborhood was associated with better school grades. Witherspoon et al (2009) explored the influence of family, school and community connectedness of youth's sense of self-esteem, depressive symptoms, and academic grades. Witherspoon defines connectedness as including feelings of support, safety, respect, belonging, attachment, and engagement. Five profiles resulted and included: high connectedness across all domains; low across all domains, and low connectedness for school or neighborhood or family. Higher grades were associated with low neighborhood and multi-high connectedness; suggesting that connection to school or family may be related to academic achievement. Youth with one or more above average connections to any of the contexts was associated with higher self-esteem and lower incidence of depression. As would be expected, high connectedness across multiple contexts was associated with better outcomes. The authors suggest that a high connection to one particular context may compensate for a lack of connectedness to other contexts; reinforcing the need to look at multiple contexts when investigating child development.

SOURCES OF DATA FOR COMMUNITY SOCIAL CAPITAL

The *National Longitudinal Study of Children and Youth* collects two measures related to community social capital: neighborhood safety and cohesion. They defined social capital as including: social cohesiveness, social support, the absence of social problems, the level of local economic prosperity, housing quality, and the level of services

provided by municipal, provincial, and federal levels of governments.⁴⁸ See below for a description of these indicators.

Neighbourhood cohesion scale. The purpose of the neighbourhood scales is to assess the extent of the presence/absence of certain neighbourhood characteristics. In particular, the neighbourhood cohesion scale can be used to measure the social unity of a neighbourhood (the extent to which the PMK feels that there is cohesion in the neighbourhood). Adult respondents are asked whether people in their neighbourhood are willing to help each other, deal with local problems, keep an eye open for possible trouble, and watch out for the safety of neighbourhood children, and whether they are people that their children can look up to. Responses to these questions are combined, resulting in a scale ranging from 0 (those reporting the lowest level of social cohesion) to 15 (those living in the most cohesive neighbourhoods). All questions about the neighbourhood are administered to the PMK or spouse/partner of the PMK. To identify low levels of neighbourhood cohesion, thresholds (or cutoff points) are established by taking the scale score that is closest to the 10th percentile based on Cycle 3 data for children in all provinces. The variable represents the proportion of children whose neighbourhoods exhibit lower levels of cohesion (as reported by the PMK) and those whose neighbourhoods do not.

The neighbourhood safety scale is used to measure the extent to which the PMK feels that there is a sense of safety in the neighbourhood. All questions about the neighbourhood were administered to the PMK or spouse/partner of the PMK. The scale ranges in value from 0 to 9 with higher scores indicating a greater sense of safety in the child's neighbourhood. The variable represents the proportion of children living in neighbourhoods with a lower sense of safety (as reported by the PMK) and those who do not.

The *Canadian Community Health Survey* also collects information on community social capital with the following question, 'How would you describe your sense of belonging to your local community?' Since 2000-2001, the *Canadian Community Health Survey* (CCHS) has compiled information on the health status, health care utilization, and health determinants of the Canadian population aged 12 and older. To support health surveillance programs and promote health research more generally, the CCHS assembles health data at the national, provincial, and intra-provincial levels. CCHS content reflects contemporary and emerging health issues, and from 2007 data is released annually.

⁴⁸ Jones C, et al. *Poverty, Social Capital, Parenting and Child Outcomes in Canada*. March 2002; Applied Research Branch: Human Resources Development Canada. See <http://www.hrsdc.gc.ca/eng/cs/sp/sdc/pkrf/publications/research/2002-002357/page04.shtml>

DISCUSSION

According to the *Labour Market Outcomes: A Cross-National Study*,⁴⁹ data from the NLSCY reported a mean neighbourhood safety score of 4.3 (out of a possible 6); which implies that the average person most knowledgeable (PMK- usually the mother) “agrees” but does not “strongly agree” that their neighbourhood is “safe to walk alone after dark” and “safe for children to play outside during the day”. The mean neighbourhood problem score is 1.3 out of a possible 10 which implies that the average PMK sees few neighbourhood problems such as garbage or burglary. The mean neighbourhood cohesion score of 10.8 out of a possible 15 implies that the average PMK “agrees” but does not “strongly agree” that the neighbours are people who “are willing to help their neighbours”, “watch out for others”, etc.

Neighbourhood cohesion is an indicator of a person’s perception of their neighbours and the sense of support they feel from those neighbours. The 2004/05 NLSCY data as reported in the *Report on the State of Public Health in Canada (2009)*⁵⁰ showed that 14% of primary caregivers of Canadian children aged 0 to 5 years report low neighbourhood cohesion. This indicator has been linked to higher levels of conduct disorder, hyperactivity, emotional disorder and non-sports related injuries among children aged 4 to 11 years.

According to the *Canadian Community Health Survey*,⁵¹ in 2005, 69% of residents of British Columbia reported a strong sense of belonging to their community, compared to the national average of 64%. Seventy-seven percent of youth aged 12 to 17 reported a strong sense of belonging, but this number dropped to 55% for those aged 18-29. A strong sense of community belonging was associated with more than twice the odds of reporting better physical and mental health.

⁴⁹ *Labour Market Outcomes: A Cross-National Study*-see http://papers.ssrn.com/sol3/papers.cfm?abstract_id=228739

⁵⁰ *Report on the State of Public Health in Canada (2009)*- see <http://www.phac-aspc.gc.ca/cphorsphc-respcacsp/2009/fr-rc/pdf/cphorsphc-respcacsp-eng.pdf>

⁵¹ *Community Belonging and Self-perceived Health: Early CCHS Findings (January to June 2005) (Your Community, Your Health: Findings from the Canadian Community Health Survey)*. See [http://www.statcan.gc.ca/cgi-bin/af-fdr.cgi?l=eng&loc=http://www.statcan.gc.ca/pub/82-621-x/82-621-x2005001-eng.pdf&t=Community Belonging and Self-](http://www.statcan.gc.ca/cgi-bin/af-fdr.cgi?l=eng&loc=http://www.statcan.gc.ca/pub/82-621-x/82-621-x2005001-eng.pdf&t=Community%20Belonging%20and%20Self-)

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'Community Social Capital'.

SUMMARY ASSESSMENT						
Community Social Capital						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Community Social Capital	0-19	300,714	High	Medium	Medium	High

The pediatric population **Magnitude** of the potential indicator is assessed as **High**. This is based on a pediatric population of 0-19 yrs or 970,048 of which 31% of the population responded that they did not have a strong sense of belonging to their community according to the *Canadian Community Health Survey*. The resulting estimated prevalence amongst BC children is 300,714, which is above 10% of the total pediatric cohort of children in BC.

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual's health and well-being is assessed as **Medium**. The evidence suggests a positive but moderate effect of community connectedness with child and adolescent physical and mental health. Feeling safe and part of a community positively influenced children's self-esteem, academic grades, and emotional health. Living in a community where residents are willing to watch out for and support children is associated with less behavioral problems. Giving back

perceived Health: Early CCHS Findings (January to June 2005) (Your Community, Your Health: Findings from the Canadian Community Health Survey (CCHS)

to the community through volunteering was found to be significantly associated with higher academic achievement in adolescents.

The **Modifiability** of the potential indicator is assessed as **Medium**. The rating of medium is given due to the feasibility but also the complexity of the task of enhancing social capital for child health and well-being. Specific interventions or programs were not identified for enhancing community social capital for children. However, in the last decade there has been a world-wide movement to create communities that support child health and well-being.⁵² Entitled the *Child Friendly Cities Movement*, it was launched in 1996 based on a resolution passed during the second United Nations Conference on Human Settlements⁵³ to make cities liveable places for all, particularly children. A Child Friendly City or Community (CFC) is a system of local governance which is committed to fulfilling the rights of the child where children's voices, needs and rights are integrated in laws, policies, regulations, programmes and budgets. Objectives of a CFC include ensuring children:

- Influence decisions about their city
- Express their opinion on the city they want
- Participate in family, community and social life
- Receive basic services such as health care and education
- Drink safe water and have access to proper sanitation
- Be protected from exploitation, violence and abuse
- Walk safely in the streets on their own
- Meet friends and play
- Have green spaces for plants and animals
- Live in an unpolluted environment
- Participate in cultural and social events
- Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender, or disability.

A Framework for Action⁵⁴ has been developed to assist communities in becoming child friendly and include the following nine elements: (1) ensure children's participation; (2) have a child friendly legal framework; (3) develop a city-wide children's rights strategy; (4) create a children's rights unit or have a coordinating mechanism; (5) ensure

⁵² *Building Child Friendly Cities: A Framework for Action*. (2004). Innocenti Publications. See <http://www.unicef-irc.org/cgi-bin/unicef/Lunga.sql?ProductID=416>. Retrieved April 2, 2007.

⁵³ United Nation's Conference on Human Settlements. See www.unhabitat.org. Accessed December 19, 2010.

⁵⁴ CFC Framework for Action. See <http://www.childfriendlycities.org/en/building-a-cfc/cfc-conceptual-framework>.

a child impact assessment and evaluation; (6) have an appropriate children's budget; (7) ensure a regular state of the city's children report; (8) make children's rights known among adults and children; and, (9) support independent advocacy for children. In British Columbia, this effort is being coordinated by the *Society of Children and Youth of BC*.⁵⁵

Data Availability/Reliability for the potential indicator is assessed as **High**. Two administrative data sources collect information on community social capital: the NLSCY and the *Canadian Community Health Survey*. The NLSCY has been previously described and is both reliable and valid. Since 2000-2001, the *Canadian Community Health Survey* (CCHS) has compiled information on the health status, health care utilization, and health determinants of the Canadian population aged 12 and older. To support health surveillance programs and promote health research more generally, the CCHS assembles health data at the national, provincial, and intra-provincial levels. CCHS content reflects contemporary and emerging health issues, and since 2007, data is released annually. The CCHS does not capture data for persons living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions.

Based on the summary assessment of **Community Social Capital**, it is recommended that the indicator ***percentage of children who report a strong sense of belonging to their community*** be considered as a **Core indicator** of child health and well-being in British Columbia, to be populated with routine data derived from the CCHS and the NLSCY. Following through with Canada's ratification of the United Nations Rights of the Child (1989) by developing public policy that promotes healthy communities for children is, by law, required and necessary. Although specific interventions for promoting social capital were not identified for children, developing Child Friendly Communities addresses this need and requires tracking to ensure health promotion and prevention efforts are effective.

⁵⁵ Society of Children and Youth of BC. See <http://www.scyofbc.org/>. Accessed Feb. 23, 2010.

CHILD WELFARE THEME

In contrast to the indicators describing protective factors for child health and well-being seen in the Social Connection Theme, the Child Welfare Theme focuses on indicators associated with risk factors. The first section describes child maltreatment which is generally grouped into four categories: physical abuse, sexual abuse, emotional abuse (including exposure to domestic violence), and neglect. Most maltreated children have experienced more than one type of trauma (Cohen et al. 2004).⁵⁶ Much of the research in this review combined multiple types of abuse in the same study or evaluation as typically there is overlap of different types of abuse occurring simultaneously. The data sources for child maltreatment will be presenting following the results of research for the different types of child maltreatment.

PHYSICAL ABUSE/NEGLECT

BACKGROUND AND CONTEXT

The purpose of this review is to find research evidence of the association between physical abuse and neglect and immediate and later child health and well-being outcomes. Previous research over the past 30 years has established deleterious effects of child physical abuse and neglect across physical, emotional, social, and cognitive health domains.⁵⁷ Mennen et al. (2010)⁵⁸ found that neglect was accompanied by other types of maltreatment in 95% of the cases they examined. Physical abuse is defined as a physical injury inflicted upon the child with cruel and/or malicious intent and can be the result of punching, beating, kicking, biting, burning, shaking, or otherwise harming a child physically. Neglect is defined as the failure to provide for the shelter, safety, supervision, and nutritional needs of the child.

⁵⁶ Cohen, J.A., E. Deblinger, A.P. Mannarino, and R.A. Steer. A Multisite, Randomized Controlled Trial for Children with Sexual Abuse-Related PTSD Symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2004; 43:393–402.

⁵⁷ Cicchetti D, Manly JT. Editorial: Operationalizing child maltreatment: Developmental processes and outcomes. *Developmental and Psychopathology* 2001; 13(4):755-757.

⁵⁸ Mennen FE, Kim K, Sang J, Trickett PK. Child neglect: Definition and identification of youth's experiences in official reports of maltreatment. *Child Abuse & Neglect*. 2010 Sep; 34(9):647-58.

KEYWORDS

Child physical abuse, child neglect, child maltreatment, parent & child interpersonal relations

VOLUME REPORT FOR PHYSICAL ABUSE/NEGLECT AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
483	48	10	6
Excluded if not related to outcomes and topic	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=4; studies=3

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR PHYSICAL ABUSE/NEGLECT ON CHILD HEALTH AND WELL-BEING

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Risk Factors			
Stith (2009)	Risk factors in child maltreatment: A meta-analytic review of the literature	155 studies (656 effect sizes)	This large and comprehensive meta-analysis examined child, parent, and family risk factors for child physical abuse and neglect. Large effect sizes were found between child physical abuse and parent anger/hyper-reactivity, high family conflict and low family cohesion. Moderate effect sizes included: the quality of the parent-child relationship, parent perception of the child as a problem, child social competence, and child's internalizing/externalizing behavior.
Immediate Effects			

Systematic Review of Social Relationships and Child Health and Well-being

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Kemp (2009)	Patterns of skeletal fractures in child abuse: systematic review	32 studies	Systematic review which explored the type and probability for fractures of children who did and did not sustain physical abuse. Multiple fractures were more common in cases of abuse. Once major trauma was excluded, rib fractures were more common in cases of abuse. Authors recommend that all fractures presenting in infants and toddlers, in the absence of a confirmed cause, be suspect and explored in relation to site, fracture type, and developmental stage of child.
Long term Effects			
Modallal et al. (2008)	Impact of physical abuse on adulthood depressive symptoms among women	35 studies	<p>1) 34/35 studies indicated that CPA was associated with depressive symptoms in adulthood.</p> <p>2) 12 of 13 studies found a positive dose response relationship (severity and frequency) between physical abuse in relation to depression.</p> <p>3) 34/35 studies found a relationship between adult depression and multiple risk factors (sexual, physical and IPV).</p>
Welch (2009)	Family relationships in childhood and common psychiatric disorders in later life: systematic review of prospective studies	23 studies	This review looked at child/ family relationships and later adult psychopathology using prospective, longitudinal cohort studies (minimum 10 year follow-up). Abuse relationships predicted depression (strong), anxiety (low/moderate) and post traumatic stress disorder (strong). Maternal emotional unavailability predicted suicide attempts in adolescents (moderate).

SUMMARY REVIEW OF STUDIES FOR PHYSICAL ABUSE/NEGLECT ON CHILD HEALTH AND WELL-BEING

Lead Author	Study Objective	Design	Setting/ Participants	Data Collection	Outcomes	Results	Conclusion
Effects on children							
Stipanovic et al. (2008)	Identify cognitive functioning of school-aged children with Shaken Baby Syndrome (SBS)	Clinical-controlled trial matched on age, gender, SES and family composition	Quebec; N=11 clinical, 11 matched children; \bar{X} = 87.6 and 90 months	Based on a medical chart review (1988-1999), 11 children with identified SBS were matched with controls. T-tests were used to compare cognitive test results between groups.	IQ, attention, verbal fluency, memory, comprehension by presence/absence of SBS	Significant weakness noted in the clinical group for IQ, working memory, mental organization, alternation and inhibition.	Subtle frontal lobe deficits were found in this high functioning clinical group. Authors recommend that regular monitoring is needed during elementary and high school to ensure needed interventions are provided.
Long-term effects							
Boden et al. (2007)	Examined the relationship between sexual and physical abuse in childhood and later educational achievement in adolescence and early adulthood.	Birth cohort study. Retrospective reports of CSA and CPA prior to 16 yrs.	Christchurch, New Zealand; N=1,265	Retrospective longitudinal survey (birth, 4 mos., every year to 16, 18, 21 and 25 years), using logistic regression modeling.	Self-reported data on educational outcomes at ages 18, 21 and 25 years; controlling for individual, family and social factors.	1) Increasing exposure to CSA and CPA was significantly associated with failing to achieve secondary school qualifications, gaining a Higher School Certificate, attending university and gaining a university degree. 2) Increasing	The effects of exposure to CSA and CPA on later educational outcomes are largely explained by the social, family, and individual context within which exposure to abuse takes place. Exposure to CSA and CPA in

Lead Author	Study Objective	Design	Setting/ Participants	Data Collection	Outcomes	Results	Conclusion
						<p>exposure to CSA was significantly associated with: lower maternal age, lower maternal educational qualifications, higher rates of family change, and increased rates of interparental violence. In addition, those exposed to CSA tended more often to be female and had lower IQ, and increased exposure to CPA.</p> <p>3) Exposure to CPA was associated with paternal education and family socio-economic status.</p> <p>4) Adjustment for confounding social, parental, and individual factors explained</p>	<p>childhood is a risk marker for poorer educational outcomes.</p>

Systematic Review of Social Relationships and Child Health and Well-being

Lead Author	Study Objective	Design	Setting/ Participants	Data Collection	Outcomes	Results	Conclusion
						most of these associations.	
Walsh et al. (2007)	Examined the relationship between a self-reported history of child physical and sexual abuse and chronic pain among women	Population survey targeting all individuals between ages 15 and 65 years.	Ontario, Canada N=3381; \bar{X} age = 36.5 yrs.	Retrospective community survey. Multinomial cumulative logit modeling.	Chronic pain associated with: physical and sexual abuse, anxiety, depression, SES, substance abuse and physical health status.	Chronic pain was significantly associated with physical abuse, education, and age of the respondents and was unrelated to child sexual abuse alone or in combination with physical abuse, anxiety, depression, or substance abuse, or low income.	The effect between chronic pain and past physical abuse was modest. However, chronic pain is associated with individual and societal impacts such as stress on the medical system and reduction in employment. Longitudinal research is recommended to unravel the causative effects of child maltreatment.

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Welch S, Patterson J, Shaw R, Stewart-Brown S. Family relationships in childhood and common psychiatric disorders in later life: systematic review of prospective studies. *British Journal of Psychiatry*. 2009; 194: 392-398.

RESULTS FOR PHYSICAL ABUSE

The effects of physical abuse can be immediate and lethal as well as last a life time. Stipanovic et al (2008) conducted a small clinical trial on children who had a history of Shaken Baby Syndrome (SBS), exploring cognitive outcomes in grade 2. Compared to the control group, children who had been shaken had significant weaknesses for IQ, working memory, mental organization, alternation, and inhibition six to seven years later. Of the original sample of children who had been admitted to the hospital that year with SBS (N=33), 2 had died, 13 were in a vegetative state or had severe neurological damage, 17 had moderate to mild disabilities and one child had no damage or disability.

Kemp et al (2009) conducted a systematic review of 32 studies in order to identify the characteristics that distinguish fractures in children who had been abused and those who had not been abused in order to calculate a probability of abuse from the type of fracture found. The authors found that infants and toddlers (1-3 years) who had been abused presented with fractures throughout the skeletal system. Multiple fractures were more common in cases of abuse and once major trauma had been excluded, rib fractures were more common in cases of abuse.

Physical abuse was also shown to be associated with negative impacts later in life. In a large Canadian community study, Walsh et al (2007) found that child physical abuse (CPA) was associated with chronic pain in adulthood. Al-Modallal et al (2008) in their meta-analysis of physical abuse and adulthood depressive symptoms found that 97% of the studies linked CPA with depressive symptoms in adulthood. Additionally, 12 of 13 studies found a positive dose response relationship (severity and frequency) between physical abuse and depression. Welsh et al (2009) confirmed this finding, showing that abusive parents predicted depression (strong), anxiety (low/moderate) and post traumatic stress disorder (strong) in later life for their children. Maternal neglect moderately predicted suicide attempts in adolescents.

Boden et al (2007) confirmed previous research of the negative effects of child physical abuse (CPA) on later educational achievement. Their large longitudinal birth cohort provided the opportunity to control for individual, family, and social risk factors. Exposure to CPA was significantly associated with failing to achieve secondary school qualifications, gaining a Higher School Certificate, attending university, and gaining a university degree. The authors recommend that interventions designed to improve the social and family-related factors that contribute to the incidence of CPA may also provide the benefit of increasing educational achievement for children in at-risk families.

Risk factors of CPA were examined in a very large meta-analysis (155 studies) by Stith et al (2009). This comprehensive meta-analysis examined child, parent, and family risk factors for child physical abuse and neglect. Large effect sizes were found between child physical abuse and parent anger/hyper-reactivity, high family conflict

and low family cohesion. Moderate effect sizes included: the quality of the parent-child relationship, parent perception of the child as a problem, child social competence, and the child’s internalizing/externalizing behavior.

SEXUAL ABUSE

BACKGROUND AND CONTEXT

The purpose of this review is to find research evidence of the association between sexual abuse and immediate and later health and well-being child outcomes. According to Trocme (2005)⁵⁹, sexual abuse includes intercourse, fondling, acts of exposure, sexual soliciting, and sexual harassment; with Canadian prevalence rates at 12.8% for females and 4.3% for males. Previous research indicates that of children who have been sexually abused: 17% exhibit age inappropriate sexual behaviour, 14% exhibit behaviour problems, 29% exhibit depression or anxiety, 13% exhibit negative peer involvement, and 10% of children have irregular school attendance (Trocme & Wolfe, 2001).⁶⁰ Sexual abuse is clearly a serious social and health problem.

KEYWORDS

CHILD sexual abuse, parent & child interpersonal relations, health status

VOLUME REPORT FOR SEXUAL ABUSE AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
527	48	10	6
Excluded if not related to youth outcomes and sexual abuse	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=3; studies=3

⁵⁹ Trocme N. Child maltreatment and its impact on psychosocial child development epidemiology. In: Tremblay RE, Barr RG, Peters RDeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development; 2005:1-5. Available at: <http://www.child-encyclopedia.com/documents/TrocmeANGxp.pdf>.

⁶⁰ Trocme, N., & Wolfe, D. (2001). *Child maltreatment in Canada: Canadian incidence study of reported child abuse and neglect: Selected results*. Ottawa: National Clearinghouse on Family Violence, Health Canada.

DETAILED RESULTS

SYSTEMATIC REVIEW AND META-ANALYSIS FOR SEXUAL ABUSE ON CHILD HEALTH

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
Long-term effects			
Wegman & Stetler (2009)	A meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood.	24 studies (78 effect sizes)	A meta-analysis which examined the relations between childhood abuse and physical health outcomes in adulthood and the role of the following potential moderators: type of outcome assessed, gender, age and type of abuse. Overall, the association between childhood abuse and adult medical outcomes resulted in a moderate effect size (.42). Childhood abuse was most strongly associated with neurological and musculoskeletal problems followed by respiratory, cardiovascular, and gastrointestinal disorders. The effects were larger for female only studies than studies that included males and females. The age moderator was inclusive in this evaluation as was the type of abuse (sexual, emotional, neglect and physical). The authors recommend that studies explore: age at time of abuse; duration and severity, frequency of abuse, diagnosis of post-traumatic stress disorder and perceived sense of control. Further, data that uses objective measurement (e.g., hospitalization rates, number of deaths) and longitudinal designs would provide important information for understanding the impact of abuse on adult health outcomes.
Maniglio (2009)	The impact of child sexual abuse on health: a systematic review of reviews.	14 Reviews (587 studies; 270,000 subjects)	Systematic review explored the effects of childhood sexual abuse on health outcomes for children/adolescents, adults and males/females. Health outcomes included: chronic pelvic pain, non-epileptic seizures, genital herpes, revictimization and a variety of psychological, behavioral and sexual disorders. Survivors of childhood sexual abuse are at a small to moderate rate of risk for a wide range of health issues, including: psychotic symptomology, depression, anxiety, PTSD, dissociation, eating disorders, somatization, personality disorders (esp. borderline personality disorder), self-esteem and self-concept impairment, suicide or self-injurious ideation and behavior, substance abuse, sexual dysfunction, engaging in high risk sexual behaviors, social impairment, interpersonal problems, hostility, anger, perpetration

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
			of sexual abuse, intelligence or learning impairment, revictimization, chronic non-cyclical pelvic pain and non-epileptic seizures.
Irish et al. (2010)	Long-term physical health consequences of childhood sexual abuse: a meta-analytic review.	31 studies that included a comparison group for those with a history of child sexual abuse. Focused on six health outcomes: general health, gastrointestinal (GI) health, gynecologic or reproductive health, pain, cardiopulmonary symptoms, and obesity.	Results suggested that a history of CSA was associated with small to moderate group differences on almost all health outcomes assessed, such that individuals with a history of CSA reported more complaints for each health outcome.
Effects on adolescents			
Noll et al. (2008)	Childhood sexual abuse and adolescent pregnancy: A meta-analytic update	21 studies	This review supports previous research indicating that childhood sexual abuse (CSA) is associated with the increased risk of adolescent pregnancy. Compared to females who had not experienced CSA, those who had were more than two times likely to get pregnant in adolescence.

SUMMARY OF STUDIES ASSOCIATED WITH SEXUAL ABUSE AND CHILD HEALTH AND WELL-BEING

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
Martin et al. (2004)	Cross-sectional study of gender specific relationships between self-reported child sexual	N=2,485 students (X _{age} = 14 years); Western	Three-year repeated measures (grades 8,9,10) longitudinal study of adolescents focusing on risks	Questionnaire exploring sexual abuse, suicidality, and measures of depression,	Girls who report high distress over CSA are at threefold increased risk of suicidal thoughts and plans compared to non-abused girls. Boys who	A history of childhood sexual abuse is a risk factor for suicidal behavior and attempts in adolescents; and for boys even without symptoms of

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
	abuse and suicidality in a community sample of adolescents.	Australia	and protective factors associated with suicide.	hopelessness, and family functioning.	report distress about CSA have a 10-fold increased risk for suicidal plans and threats and 15-fold increased risk of suicide attempts.	depression and hopelessness.
Jankowski et al. (2002)	This study examined whether parental caring provides a buffer against revictimization.	New England, US N=974; College sample; \bar{X} age = 19 years	First year Psychology class at the University of Vermont. Used only female responses. Retrospective survey of community sample Logistic regression	Child sexual abuse, physical abuse, domestic violence in relation to: incidence of revictimized and perceptions of the degree of care they received as a child from each parent.	Results indicated that women who had been sexually abused in childhood were twice as likely to be sexually assaulted in adulthood and that women with 2 or more types of childhood trauma were 3 times as likely to be sexually revictimized. Parental caring was not found to buffer against the revictimization effect.	This study found a robust sexual revictimization effect; that is, women who were sexually abused in childhood were significantly more likely to be the victim of sexual assault during older adolescence or young adulthood than were women without a history of child sexual abuse.

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RESULTS FOR SEXUAL ABUSE

Effects on children

Although this review did not find recent evaluations (in the past decade) of the effects of sexual abuse on children, Hornor (2010)⁶¹ summarizes the consequences of sexual abuse in childhood in a recent literature review. She notes that boys tend to present more externalizing behavior (e.g., aggression) while girls tend to internalize with symptomology such as depression or anorexia. Further symptoms associated with childhood sexual abuse include: sexualized behavior, post traumatic stress disorder, depression, suicide ideation, substance abuse, and obesity.

Effects on adolescents

Within the timeframe of this review, one meta-analysis was found which explored the effect of CSA on adolescent pregnancy and a longitudinal study exploring CSA and suicide. In both cases, CSA increases the likelihood of adverse adolescent outcomes; be it teenage pregnancy (Noll et al., 2008) or thinking about, planning or attempting suicide (Martin et al., 2004). Quite disturbing was finding by Martin et al that girls who report high distress over CSA are at a threefold increased risk of suicidal thoughts and plans compared to non-abused girls. Boys who report distress about CSA have a 10-fold increased risk for suicidal plans and threats and 15-fold increased risk of suicide attempts.

Long-term effects

This review found three recent meta-analyses that examined the effect of child sexual abuse on later health outcomes. The most comprehensive analyses explored the association between childhood sexual abuse and later psychological, behavioral, medical and sexually related outcomes (Maniglio, 2009). Irish et al (2010), in their meta-analysis, focused on six health outcomes: general health, gastrointestinal health, gynecological or reproductive health pain, cardiopulmonary symptoms and obesity. In the final meta-analyses, Wegman and Stetler (2009) focused on later health outcomes of childhood abuse that included studies of childhood physical, sexual and emotional abuse. Health outcomes included: number of surgeries, cardiovascular problems, respiratory problems, and gastrointestinal problems, metabolic disorders, and gynecological problems, neurological and musculoskeletal problems. These analyses included both clinical and community samples, males and females, objective and

⁶¹ Hornor G. Child sexual abuse: consequences and implications. *Journal of Ped. Health Care.* 2010; 24(6):358-364.

subjective assessments and a large variety of health outcomes assessed. All three meta-analyses yielded similar results. Childhood sexual abuse is associated with an increased risk of negative health outcomes in adulthood. Small to moderate group differences were found for all three meta-analyses; highlighting the long-term health consequences of childhood sexual abuse. This review indicated a wide range of health consequences of sexual abuse, including: psychotic symptomology, depression, anxiety, PTSD, dissociation, eating disorders, somatization, personality disorders (esp. borderline personality disorder), self-esteem and self-concept impairment, suicide or self-injurious ideation and behavior, substance abuse, sexual dysfunction, engaging in high risk sexual behaviors, social impairment, interpersonal problems, hostility, anger, perpetration of sexual abuse, intelligence or learning impairment, revictimization, chronic non-cyclical pelvic pain and non-epileptic seizures, general health, gastrointestinal health, gynecologic or reproductive pain, cardiopulmonary symptoms, obesity, and neurological, musculoskeletal and respiratory problems.

Moderator variables such as individual, family and community factors were theorized to account for the additional variance. Further recommendations by Wegman and Stetler (2010) include exploring: age at time of abuse; duration and severity, frequency of abuse, diagnosis of post-traumatic stress disorder and perceived sense of control. Also, data that uses objective measurement such as hospitalization rates, and number of deaths as well as longitudinal designs would provide important information for understanding the impact of childhood sexual abuse.

EXPOSURE TO DOMESTIC VIOLENCE

BACKGROUND AND CONTEXT

The purpose of this review is to find research evidence of the association between exposure to domestic violence and child health and well-being outcomes. Domestic or intimate partner violence (IPV) is defined as any behavior within an intimate relationship that causes physical, psychological, or sexual harm.⁶² Children exposed to this violence have been defined as emotionally abused and may show problems similar to children physically abused.

⁶² Taft et al. MOSAIC (Mothers' Advocates in the Community): protocol and sample description of a cluster randomized trial of mentor mother support to reduce intimate partner violence among pregnant or recent mothers. *BMC Public Health*. 2009; 9: 159.

Past research has shown children exposed to IPV are at risk for psychological, emotional, behavioral, social, and academic problems.⁶³

KEYWORDS

Intimate partner violence, domestic violence, violence in the home, emotional abuse, parent-child relations

VOLUME REPORT FOR EXPOSURE TO INTIMATE PARTNER VIOLENCE AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
740	46	11	3
Excluded if not related to youth outcomes and exposure to intimate partner violence	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=3

⁶³ MacMillan H. *Synthesis on prevention of child maltreatment (abuse and neglect)*. 2008; Encyclopedia on Early Childhood Development. see <http://www.child-encyclopedia.com/en-ca/prevention-child-maltreatment/what-do-we-know.html>

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR EXPOSURE TO INTIMATE PARTNER VIOLENCE AND CHILD HEALTH AND WELL-BEING

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
Rhoades (2008)	Children's Responses to Interparental Conflict: A Meta-Analysis of Their Associations With Child Adjustment	71 studies from 67 articles	A meta-analysis examined the relations between children's adjustment and children's cognitive, affective, behavioral, and physiological responses to interparental conflict. Studies included children between 5 and 19 years of age. Moderate effect sizes were found for the associations between cognitions and internalizing and externalizing behavior problems and self-esteem problems, negative affect and behavioral responses and internalizing behavior problems, and behavioral responses and self-esteem problems. Small to moderate effect sizes were found for the associations between cognitions and relational problems, negative affect and behavioral responses and externalizing behavior problems, and physiological reactions and internalizing and externalizing behavior problems. Effect sizes were, with 1 exception, larger for internalizing than for externalizing behavior problems. Age significantly moderated the majority of effect sizes.
Bair-Merritt et al. (2006)	Physical Health Outcomes of Childhood Exposure to Intimate Partner Violence: A Systematic Review	22 studies	This review focused on the <i>physical</i> health sequelae of children exposed to IPV. IPV exposure is associated with increases in the likelihood of adolescent and adult risk-taking behaviors: alcohol abuse, substance abuse/dependency, engaging in sexually risky behavior.
Murphy at al. (2001)	Abuse: a risk factor for low birth weight? A systematic review and meta-analysis	14 studies for systematic review; 8 studies used for meta-analysis.	Women who reported physical, sexual or emotional abuse during pregnancy were more likely than non-abused women to give birth to a baby with low birth rate.

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Murphy CC, Schei B, Myhr TL, DuMont J. Abuse: a risk factor for low birth weight? A systematic review and meta-analysis. *Can Med Assoc J*. 2001; 164:1567–1572.

RESULTS FOR EXPOSURE TO DOMESTIC VIOLENCE

Domestic violence affects children, starting prenatally and continues throughout life. For example, as the systematic review by Murphy et al (2001) found, abuse in pregnancy is associated with the increased likelihood of giving birth to a low birth-weight infant; which in turn may result in neurodevelopmental disabilities (Hack & Fanaroff, 1999).⁶⁴

Violence in the home can also influence children's emotional reactions, cognitions, behavioral responses and physiological reactions. This review found a comprehensive meta-analysis that examined the effect of interparental violence on children's health and well-being (Rhoades, 2008) and a systematic review that examined later behavioral outcomes of children who had experienced violence in the home (Bair-Merritt et al., 2006). Rhoades (2008) found in her meta-analysis that exposure to parental violence negatively influences children's emotions, cognitions, behavioral responses and physiological reactions (overall moderate effect sizes); with the strongest relations between exposure and negative cognitions and affect. Internalizing behavior (e.g., anxiety, fearful, sad) problems and IPV showed the strongest effects. Although no gender differences were found between boys and girls for internalizing vs. externalizing behavior problems, age was identified as a significant moderator. Children over 10 years reported more negative influences of IPV than younger children.

The physical health consequences of IPV were identified in a systematic review by Bair-Merritt, Blackstone and Feudtner (2010). These authors found that childhood exposure to IPV was associated with a greater likelihood of the following adolescent and adult risk-taking behaviors: alcohol abuse, substance abuse/dependency, and engaging in sexually risky behavior. The authors recommend that future research explore potential confounders and use community-based samples.

⁶⁴ Hack M, Fanaroff AA. Outcomes of children of extremely low birthweight and gestational age in the 1990s. *Seminars in Neonatology*. 2000 May;5(2):89-106.

DATA SOURCES ON CHILD MALTREATMENT

The British Columbia Ministry of Children and Family Development collects data on child maltreatment as does the *Adolescent Health Survey* from the McCreary Centre Society and *The Canadian Incidence Study (CIS) of Reported Child Abuse and Neglect*.

DISCUSSION

The Canadian Incidence Study (CIS) of Reported Child Abuse and Neglect for 2008⁶⁵ is a national study of official reports of child abuse and neglect cases. According to this report, exposure to intimate partner violence accounted for 34% (29,259 cases) of substantiated maltreatment cases in Canada; neglect was at 35% (28,939 cases), physical abuse at 20% (17,212 cases); emotional maltreatment at 9% (7,423) and sexual abuse at 3% or 2,607 cases.

The *2008 Adolescent Health Survey*⁶⁶ indicated that 19% of females and 14% of males reported being physically abused. Students reported much higher percentages of sexual abuse than the CIS; where 13% of females and 3% of males reported being sexually abused. The percentage of students reporting they had been both physically and sexually abused was 7% for females and 2% for males. The AHS also tracks the effects of abuse on health. Experiencing either physical or sexual abuse was strongly related to negative health outcomes. For example, compared to youth who had not been abused, those who had been physically abused were nearly twice as likely to report poor or fair health (as opposed to good or excellent health). Youth who reported physical or sexual abuse were nearly three times more likely to have considered suicide, compared to those who had not been abused. When youth experienced both forms of abuse they were even more likely than youth who were not abused to report poor or fair health. Youth who had been both physically and sexually abused were also 8 times more likely to skip school on 11 or more occasions in the past month (8% vs. 1%) and 4 times more likely to carry a weapon to school (12% vs. 3%). Youth with a history of both types of abuse were also less likely to think they would graduate from college or university (48% vs. 60%).

⁶⁵ Public Health Agency of Canada. *Canadian Incidence Study of Reported Child Abuse and Neglect – 2008: Major Findings*. Ottawa, 2010.

⁶⁶ Smith, A., Stewart D., Peled, M., Poon, C., Saewyc, E. and the McCreary Centre Society (2009). *A Picture of Health: Highlights from the 2008 BC Adolescent Health Survey*. Vancouver, BC: McCreary Centre Society.

According to the AHS, youth with a disability are particularly vulnerable to abuse. Students who reported having a limiting health condition or disability were more than twice as likely as their peers to report being physically abused (31% vs. 15%) or sexually abused (19% vs. 7%). These students were also three times more likely to report having experienced both physical and sexual abuse than students who did not have such a disability or health condition (12% vs. 4%). Among disabled students, those whose disability or debilitating health condition was visible to others were more likely to report physical abuse and sexual abuse, and were twice as likely to report being both physically and sexually abused (15% vs. 7%). (p. 42)

In a recent Canadian survey, *The Women's Health Surveillance Report*, Cohen and Maclean (2004)⁶⁷ indicate that British Columbia has the second highest rate of partner violence in Canada at twenty-three percent. Across Canada, women aged 15–24 had the highest rates and Aboriginal women were more affected than non-Aboriginal women.

CONCLUSIONS FOR CHILD MALTREATMENT

Physical abuse and neglect

This review found significant negative effects for child physical abuse/neglect and child health and well-being. Of the 33 infants brought into hospital and diagnosed with Shaken Baby Syndrome, only one child survived without damage or disability, with the rest exhibiting varying degrees of neurological and cognitive deficits seven years later. A review of hospital x-rays of children identified as physically abused typically shows multiple fractures throughout the infant or toddler's body. Moderate effect sizes were found for childhood physical abuse and adult physical health problems (e.g., chronic pain, neurological and musculoskeletal problems, and respiratory, cardiovascular, and gastrointestinal problems). Strong evidence was found for childhood physical abuse and later mental health, especially depression and post-traumatic stress disorder; with moderate effects for anxiety

⁶⁷ Cohen M, Maclean H. Violence against Canadian women. *BMC Health*. 2004; 4 (Suppl 1): S22. Published online 2004 August 25. doi: [10.1186/1472-6874-4-S1-S22](https://doi.org/10.1186/1472-6874-4-S1-S22).

disorders. Maternal neglect moderately predicted suicide attempts in adolescents. Being physically abused as a child was also associated with less of a chance of passing secondary school or going to university.

Sexual abuse

There is strong evidence of immediate and long term negative effects of sexual abuse. Young boys are likely to exhibit externalizing behavior such as aggression while girls exhibit more internalizing symptoms such as depression or anorexia. Sexual abuse increases the likelihood of early sexualized behavior, PTSD, depression, substance abuse, obesity and suicide ideation and completion. Small to moderate effects were found for the long-term negative effects of CSA for physical and mental health. Childhood sexual abuse is associated with an increased likelihood of adult: psychotic symptomology, depression, anxiety, PTSD, dissociation, eating disorders, somatization, personality disorders (esp. borderline personality disorder), self-esteem and self-concept impairment, suicide or self-injurious ideation and behavior, substance abuse, sexual dysfunction, engaging in high risk sexual behaviors, social impairment, interpersonal problems, hostility, anger, perpetration of sexual abuse, intelligence or learning impairment, revictimization, chronic non-cyclical pelvic pain and non-epileptic seizures, and negative general health (gastrointestinal health, gynecologic or reproductive pain, cardiopulmonary symptoms, obesity, and neurological, musculoskeletal and respiratory problems).

Exposure to violence in the home

Women who are victims of violence are more likely to have low birth-weight infants. Children's exposure to violence is strongly associated with negative cognitions and affect and moderately associated with behavioral and physiological problems. Exposure to violence has also been associated with later alcohol abuse, substance abuse/dependency, and engaging in sexually risky behaviors.

Systematic Review of Social Relationships and Child Health and Well-being

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'Child Maltreatment'.

SUMMARY ASSESSMENT						
Child Maltreatment						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Physical Abuse/neglect	0-19	194,085	High	High	High	Medium
Sexual Abuse/neglect	0-19	67,929	Medium	High	High	Medium
Domestic Abuse exposure/neglect	0-19	329,945	High	High	High	Medium

The pediatric population **Magnitude** of the potential indicator 'child maltreatment' is assessed as **High** for physical abuse and domestic violence and **Medium** for sexual abuse. All estimates are based on a pediatric population of 0-19 yrs or 970,048 children. Of this population, 20% of children experience physical abuse according to the *Canadian Incidence Study (CIS) of Reported Child Abuse and Neglect*⁶⁸ or 194,085 children; this is above 10% of the total pediatric cohort of children in BC. The study also indicated that 34% of children are exposed to domestic violence or 329,945 children aged 0-19 years. Finally, it reported that 3% of the population experience sexual abuse or an estimated 67,929 BC children (falling within the 2-10% of the total pediatric cohort).

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual's health and well-being is assessed as **High** for all types of child maltreatment. The evidence indicates serious immediate and long term consequences for all forms of abuse including suicide, negative cognitions and affect, psychotic symptomology, PTSD, and major physical health problems.

The **Modifiability** of the potential indicator is assessed as **High**. Family support services such as home visitation programs have been shown to reduce the incidence of child maltreatment. According to the Promising Practices Network which stringently evaluates child and youth interventions, *Healthy Families New York (HFNY)*⁶⁹ is an example of a proven intervention. HFNY is a community-based prevention program that seeks to improve the health and well-being of children at risk for abuse and neglect by providing intensive home visitation services. Through community health and social service agencies and hospitals, the HFNY program screens expectant parents and parents with an infant less than three months of age for risk factors that are predictive of child abuse and neglect, including, but not limited to: single parenthood, teen pregnancy, poverty, poor education, unstable housing, substance abuse, and mental health problems. Specially trained paraprofessionals are assigned to the participating families to deliver home visitation services until the child reaches five or is enrolled in Head Start or kindergarten. Home visitors provide families with support, education, and referrals to community services aimed at addressing the following goals: (1) to promote positive parenting skills and parent-child interaction; (2) to prevent child abuse and neglect; (3) to ensure optimal prenatal care and child health and development; and (4) to increase parents' self-sufficiency.

Other programs which have been identified as effective preventive strategies include: high-quality child care and preventive early-childhood programs, public education, professional education (better training in identifying

⁶⁸ Trocmé N, et al. Canadian Incidence Study of Reported Child Abuse and Neglect-2008: Major Findings. Ottawa, Ontario: Minister of Public Works and Government Services Canada; 2010. Available at: http://www.phac-aspc.gc.ca/cm-vee/csca-ecve/pdf/childabuse_final_e.pdf. Accessed March 1, 2011.

⁶⁹ Promising Practices Network. See <http://www.promisingpractices.net/program.asp?programid=147>. Accessed March 1, 2011

maltreatment and better screening tools), and community improvements such as better housing.⁷⁰ Along with interventions that target prevalent and neglected risk factors such as poverty, partner violence, teenage pregnancy, Klevens and Whitaker (2007)⁷¹ also suggest addressing social norms tolerating violence toward children. Higgins et al (2000)⁷² found a strong association across all forms of child maltreatment (sexual abuse, physical abuse, psychological maltreatment, neglect, witnessing family violence) and recommend that health professionals assess all forms of maltreatment when exploring treatment options.

Data Availability/Reliability for the potential indicator is assessed as **Medium**. Although multiple sources collect data on child maltreatment, the rating of medium was given due to the lack of a measure that collects data on a regular and consistent basis, covers all types of abuse/neglect and is associated with children of all ages. In BC, child welfare definitions, reporting laws, and investigation procedures are outlined in the *Child, Family and Community Service Act* (1995), which is the responsibility of the provincial Ministry of Children and Family Development (MCFD). The minister delegates responsibility for child protection services to trained social workers throughout the province. The police are also involved in cases associated with failure to provide necessities of life, assault, and sexual interference. Presumably statistics are collected on the number of children affected by different types of abuse/neglect, however this isn't evident. The only publically available statistics on MCFD's web site relates to fatalities of children in care and the number of protection reports opened. Protection reports are calls the ministry receives from the public about children possibly at risk. Thus, an assessment of the reliability and validity of data collected by MCFD is not possible.

The *Canadian Incidence Study (CIS) of Reported Child Abuse and Neglect* collects information on substantiated child abuse and neglect investigations conducted across Canada. This study has been conducted every 5 years since

⁷⁰ MacMillian H. *Synthesis of experts' on the prevention of child maltreatment (abuse/neglect)*. Encyclopedia of Early Childhood Development. See <http://www.child-encyclopedia.com/en-ca/prevention-child-maltreatment/what-can-be-done.html>. Accessed March 1, 2011

⁷¹ Klevens J, Whitaker DJ. Primary prevention of child physical abuse and neglect: gaps and promising directions. *Child Maltreatment*. Nov2007; 12(4): 364-377.

⁷² Higgins D, McCabe M. Relationships between different types of maltreatment during childhood and adjustment in adulthood. *Child Maltreatment*. June 2000; 5(3): 261-273.

1998. While extensive (112 child welfare sites selected from a national list of 412 child welfare organizations, stratified by size, province/territory, and Aboriginal status), the study does not include information about unreported maltreatment, cases that were investigated only by the police, nor reports that were made to child welfare authorities but screened out (referrals that were not opened for investigation). The McCreary Centre Society's *Adolescent Health Survey IV* may address these gaps by directly asking adolescents to report maltreatment. In fact, similar incidence rates were found between the two measures with the exception of adolescents in the *Adolescent Health Survey IV* reporting higher rates of sexual abuse. Another important addition found in the *Adolescent Health Survey IV* is that youth with a disability or debilitating illness are twice as likely to experience physical or sexual abuse. In this case, it appears that a self-report measure is providing more information than an administrative source for adolescent reports of physical or sexual abuse. However, the *Adolescent Health Survey IV* does not directly address exposure to domestic violence, neglect, or emotional abuse and is targeted to adolescents. The *Canadian Incidence Study (CIS) of Reported Child Abuse and Neglect* provides information on younger children as well as adolescents and addresses more types of abuse but it measures only officially substantiated cases and is conducted less frequently. Thus, having both measures provides a more complete picture of child maltreatment.

Based on the summary assessment of the Child Maltreatment concept, it is recommended that the indicator **percentage of children reporting "being physically abused or mistreated by anyone in their family or by anyone else"** as indicated from the McCreary Centre Society *Adolescent Health Survey IV* and **the incidence rate of physical abuse, neglect, sexual abuse, and exposure to domestic violence** as indicated from either the BC Ministry of Children and Family Development or the *Canadian Incidence Study (CIS) of Reported Child Abuse and Neglect*, as consideration as a **Core indicator** of child health and well-being in British Columbia. With the large number of potential consequences and serious implications of childhood maltreatment, having indicators tracking abuse/neglect are warranted.



CHILDREN IN CARE

BACKGROUND AND CONTEXT

The purpose of this review is to find research evidence of the association between out-of-home care and child health and well-being. Child maltreatment is the main reason children are placed in care outside of their familial home. According to the *Canadian Child Welfare Research Portal*,⁷³ out-of-home care includes voluntary care agreements and placements in residential, foster, and community or kinship care. A foster home is a private home approved by child welfare services for the placement of children, and includes kinship care. In its broadest sense, kinship care is any living arrangement in which children live with neither of their parents but instead are cared for by a relative or someone with whom they have an emotional bond. “Kin” means “family” or “relative” although many child welfare agencies use the term to refer to godparents, family friends, or others.

KEYWORDS

Foster care, residential care, kinship care

VOLUME REPORT FOR CHILDREN IN CARE AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
262	18	14	8
Excluded if not related to youth outcomes and children in Care	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=3; studies=5

⁷³ *Canadian Child Welfare Research Portal*. See <http://www.cccw-cepb.ca/children-youth-care>. Accessed March 14, 2011.

DETAILED RESULTS

SYSTEMATIC REVIEWS AND/OR META-ANALYSES FOR CHILDREN IN CARE AND CHILD OUTCOMES

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Foster Care			
Scherr (2007)	Educational experiences of children in foster care	31	Students living in out-of-home care are disproportionately represented in special education. They are also overly represented in grade retention and compared to peers; receive higher rates of discipline and expulsion.
Residential Care			
Knorth (2008)	Under one roof: A review and selected meta-analysis on the outcomes of residential child and youth care	27	On average, stays in residential care with treatment programs improve children’s psychosocial functioning (medium-large effect) for those with internalizing (.45) and externalizing (.60) problem behavior.
Bakermans-Kranenburg (2008)	Earlier is better: A meta-analysis of 70 years of intervention improving the cognitive development of institutionalized children	14	Children in orphanages have poorer physical, social-emotional, and cognitive development. Probably due to the extremely negative child rearing environment associated with orphanages, all interventions reviewed positively improved children’s cognitive outcomes; especially adoption. Interventions before 12 months are more effective.

SUMMARY REVIEW OF STUDIES FOR CHILDREN IN CARE AND CHILD OUTCOMES

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
Kinship Care						
Rubin (2008)	To examine the influence of kinship care on behavioral	National Survey of Child and Adolescent	Prospective cohort study	Predicted probabilities of behavioral problems	Fifty percent of children started in kinship care and 17% of children who started in foster care later moved to	Children placed into kinship care had fewer behavioral problems 3 years after

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
	problems after 18 and 36 months in out-of-home care. Growth in placement of children with kin has occurred despite conflicting evidence regarding its benefits compared with foster care.	Well-Being, October 1999 to March 2004 N= 1,309 entering out-of-home care following a maltreatment report		derived from Child Behavior Checklist scores.	kinship care. Children in kinship care were at lower risk at baseline and less likely to have unstable placements than children in foster care. Controlling for a child's baseline risk, placement stability, and attempted reunification to birth family, the estimate of behavioral problems at 36 months was 32% if children in the cohort were assigned to early kinship care and 46% if children were assigned to foster care only ($p = .003$). Children who moved to kinship care after a significant time in foster care were more likely to have behavioral problems than children in kinship care from the outset.	placement than children who were placed into foster care. This finding supports efforts to maximize placement of children with willing and available kin when they enter out-of-home care
Hegar (2009)	Kinship care and sibling placement: Child behavior, family relationships and school outcomes	USA; National Study of Child and Adolescent Well-being (NSCAW); N=1415 children (4-14 yrs; 52% girls)	Data from youth, teachers, caseworkers and caregivers. Caregivers were either kinship or not ; Multiple regression	Internalizing/ Externalizing behavior; relatedness scale; school performance.	Kinship care is associated with fewer internalizing/externalizing behavior problems. Having a sibling in foster care is associated with lower reports of internalizing problems (e.g., depression, self-blame) and mitigates externalizing problems in Hispanic and Black youth. As well, siblings placement is associated with increased emotional support report between children and caregivers. Kinship care and sibling placement predicted lower academic achievement in White children and the opposite effect in Black and Hispanic children.	Teacher responses conflicted youth, caseworker and caregiver responses. Modest benefits for kinship foster care and sibling placement.
Residential Care						

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
Burge (2007)	To identify the prevalence rate of mental disorders among Ontario children who are permanent wards and also the key practice and descriptive variables associated with their diagnostic status.	Ontario N= 429 children who were permanent wards with no access to biological parents on December 31, 2003	Stratified random sample	Descriptive variables (such as age, sex, and type of permanent ward), all disorders (that is, mental and other current medical diagnoses and disabilities), family history, maltreatment experiences, service history (such as age at admission to care and current residential placement type), and permanency plans	The prevalence of mental disorders was 31.7%. A significantly higher proportion of children with mental disorders experienced maltreatment. Children with mental disorders were almost 3 times more likely than those without mental disorders to be placed by Children’s Aid Societies in privately operated resources, such as group homes, and almost 10 times less likely to be living in a probationary adoption home. Although children with mental disorders were less likely to have a permanency plan of adoption than were children without mental disorders, regression analysis found that only 2 variables—age on becoming a permanent ward and age at the time of the study—were predictive of children’s adoption plans.	The findings support the need for improved monitoring of the aggregate mental health needs of children who are permanent wards
Foster Care						
Fernandez (2009)	Explores child outcomes of long term foster care	Australia N=59 children; X age = 12 years (29 boys, 30 girls)	Longitudinal repeated measures	Level of attachment, relationship building skills, anxiety problems, behavior problems	Contact with birth mother was negatively associated with foster parent cohesion. Children in the sample exhibited clinical levels of behavioral problems compared to normative data. However, over time (18 months), their problems decreased although still higher than non-foster care kids. The greater the length of time in the foster home, the better the ratings of adjustment, satisfaction, integration, academic and behavioral	Strengths are the longitudinal design which showed general improvement in child outcomes over time. Small sample and no comparison group.

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
					outcomes. Children under 12 years reported better outcomes and the older the child at entry the less positive the outcomes on anxiety, emotional, health, adjustment, satisfaction and integration.	
McCue (2001)	Examined behavioral ratings over 12 months and associated predictors in a sample of young children in foster care	Connecticut USA, N=120; Aged 11-74 months.	Longitudinal cohort	Vineland Adaptive Behavior Scale as assessed by foster mothers.	At entry into foster care, VAS scores were below average and reached the average norms by 12 months.	Important considerations to track include: child and family characteristics, reason for placement, length of time in foster care, needed services.

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Hegar RL, Rosenthal JA. Kinship care and sibling placement: Child behavior, family relationships and school outcomes. *Children and Youth Services Review*. 2009; 31: 670-679.

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Knorth EJ, Harder AT, Zandberg T, Kendrick AJ. Under one roof: A review and selective meta-analysis on the outcomes of residential child and youth care. *Children and Youth Services Review*. 2008 Feb;30(2):123-40.

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Rubin DM, Downes KJ, O'Reilly A.L.R., Mekonnen R, Luan X, Localio R. Impact of kinship care on behavioral well-being for children in out-of-home care. *Arch Pediatr Adolesc Med*. 2008;162(6):550-556.

Scherr T. Educational experiences of children in foster care: Meta-analyses of special education, retention and discipline rates. *School Psychology International* [serial on the Internet]. (2007, Oct), [cited November 24, 2010]; 28(4): 419-436.

RESULTS FOR CHILDREN IN CARE

Foster Care

A series of meta-analyses conducted by Scherr (2007) confirmed that children in foster care have greater negative educational outcomes. She found that 31% of fostered youth qualify for or receive special education placement; a rate almost five times higher than children not in care. Thirty-three percent of children in foster care were retained in their grade level at least once. Finally, 24% of students in foster care had been suspended or expelled from school, a rate three times higher than their non-fostered peers. Potential explanations for these results include more frequent moves and attendance problems and the effects of unfavorable backgrounds which necessitated foster care. The author recommends that children in care be tracked as a group to measure their educational achievement and provide information for developing programs and behavioral and/or mental health supports. More comparative studies are needed to identify educational outcomes for children who are and are not in foster care; with studies controlling for individual factors such as history of abuse. The results of these analyses confirms the study conducted in British Columbia (Mitic & Rimer, 2002) where 50% of children in care were behind at least one grade level compared to children in the general population.

Mental disorders among fostered children were explored in a stratified random sample study of 429 children in care in Ontario. Burge (2007) posits three possible explanations for the higher incidence of psychopathology found in children in care: 1) the biological parent's own mental health from genetic or environmental perspectives; 2) the child's mental health sequelae as a result of maltreatment; and, 3) the negative effect of child separation from families of origin. From this sample, 32% of the children presented with a mental disorder. Seventy-eight percent of these children had experienced a least one type of maltreatment before entering care and 9 % experienced maltreatment in care. A significantly higher proportion of children with a mental disorder had experienced maltreatment compared to those without a diagnosed mental disorder. Tracking the mental health status of children in care was recommended as an important public health measure.

Both longitudinal studies of children in foster care showed the importance of placement stability for bettering children's outcomes. Fernandez (2009) found that children in her sample exhibited greater clinical levels of behavioral and emotional problems compared to normative data. However, over time (18 months), their problems decreased although were still higher than children not in care. The greater the length of time in the foster home, the better the ratings of adjustment, satisfaction, integration, academic and behavioral outcomes. Children under 12 years reported better outcomes and the older the child at entry, the less positive the outcomes on anxiety, emotional health, adjustment, satisfaction and integration. Similar results were found in the longitudinal study of 120 younger children conducted by McCue et al (2001). Children's adaptive behavior functioning was initially

below average and generally improved over the 12 months of the study. As well, both studies found that the greater the amount of time in foster care, the better the outcomes. In both cases, modest improvements were found over time. Important considerations to track include: child and family characteristics, reason for placement, length of time in foster care, needed services, and number of foster care placements.

Residential Care

Knorth et al. (2008) explored child outcomes of children placed in residential settings, which had interventions to address externalizing and internalizing problem behaviors. Overall, residential settings provided a moderate effect (.45) on internalizing problem behavior and a larger effect (.60) for externalizing behavior problems. Those programs which applied behavior-therapeutic methods, had a social-cognitive and social-emotion training component, and focused on family involvement were the most effective.

A meta-analysis of international residential settings was conducted by Bakermans-Kranenburg et al (2008) that explored interventions for improving cognitive development. The authors reviewed the outcomes of children in orphanages across 70 years; noting deleterious effects on physical health (e.g., growth deficiencies), socio-emotional health (e.g., attachment) and cognitive development (e.g., IQ). The authors note that adoption or foster care is preferable to institutional care for children's cognitive development.

Kinship Care

Rubin et al (2008) compared behavioral problem scores between children in foster care to those in kinship care after 18 and 36 months, in a nationally representative cohort study. The authors found that children placed into kinship care had fewer behavioral problems and were more likely to be identified as stable (58% kinship; 32% foster care) three years after placement than children who were placed into foster care. This finding supports efforts to maximize placement of children with willing and available kin when they enter out-of-home care following child maltreatment. Initial placement in kinship (vs. foster care) was also shown to be important. The authors highlight the fact that the below poverty level of the kinship placements was 44% (compared to 23% of foster families) and additional services and supports are needed.

Likewise, Hegar and Rosenthal (2009) identified modest significant effects for children in kinship care and sibling placement compared to non-kinship foster care. Specifically, kinship care was associated with fewer internalizing/externalizing behavior problems. Having a sibling in care was associated with lower reports of internalizing problems (e.g., depression, self-blame) and mitigated externalizing problems in Hispanic and Black youth. As well, sibling placement was associated with increased emotional support report between children and

caregivers. Kinship care and sibling placement predicted lower academic achievement in White children and had the opposite effect for Black and Hispanic children.

DATA SOURCES ON CHILDREN IN CARE

The British Columbia Ministry of Children and Family Development sources data on the rates of children in care.

DISCUSSION

According the British Columbia Ministry of Children and Family Development, in their public reporting of performance measures for 2010, the number of children in nonparental care for 2008/09 was 8,908 (see below).⁷⁴

Measure	2005	2006	2007	2008	2009 (Jun. 2009)
Fatalities of Children and Youth in Care	9	13	9	15	7
Number of Children in Care (June data)	9,056	9,189	9,274	9,240	8,908

According to the British Columbia Report, *Kids, Crime and Care- Health and Well-Being of Children in Care: Youth Justice Experiences and Outcomes*⁷⁵ about 4,500 B.C. children reside with relatives under the ‘Child in the Home of a Relative program’, 300 children are in kinship and out of care placements, another 1,500 First Nations children in the home of a relative in the federally administered Guardianship Financial Assistance program on reserves, and over 600 youth per year living independently on ‘Youth Agreements’. Further, Aboriginal children and youth are

⁷⁴ Ministry of Children and Family Development’s Performance Measures. See http://www.mcf.gov.bc.ca/about_us/pdf/performance_2010.pdf. Accessed March 9, 2011.

⁷⁵ *Kids, Crime and Care- Health and Well-Being of Children in Care: Youth Justice Experiences and Outcomes*. See <http://www.rcybc.ca/Images/PDFs/Reports/Youth%20Justice%20Joint%20Rpt%20FINAL%20.pdf>. Accessed March 9, 2011.

over-represented in many of the above vulnerable at-risk groups, where more than one in five Aboriginal youth had either been in care, in the home of a relative or both, in contrast to less than one in 30 non-Aboriginal youth.

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator ‘Children in Care’.

SUMMARY ASSESSMENT						
Children in Care						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Children In Care	0-18	8,908	Low	High	High	Low

The pediatric population **Magnitude** of the potential indicator is assessed as **Low**. This is based on data from the British Columbia’s Ministry of Children and Family Development which reported 8,908 children in care in 2009; which is below 2% of the total pediatric cohort of children in BC.

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual’s health and well-being is assessed as **High**. As child maltreatment is the most often reason that children are removed from their parental home, the deleterious effects of abuse is an important consideration for assessing impact. Children in foster care are more likely to experience negative educational outcomes (special educational placement, grade retention or suspended or expelled), mental health issues, behavioral and emotional problems, developmental

delay, and/or a disability.⁷⁶ Institutionalized care was shown to have a large association with externalizing behavior and a moderate effect on internalizing problems. As well, negative effects on the physical and emotional health and cognitive development of institutionalized children have been recorded around the world.

The **Modifiability** of the potential indicator is assessed as **High**. Due to the complexity and variation of difficulties facing children in foster care, Vandiver, Chalk and Moore (2003)⁷⁶ recommend a multifaceted approach. The range of potential interventions for children in care include: (1) broad policy change such as reducing poverty and providing supportive systems of care for birth and foster parents; (2) early prevention programs for reducing child maltreatment and nurturing children; and, (3) interventions targeted directly at difficulties facing the child such as mental health issues, problem behaviors, or educational difficulties. Below are a few examples of effective interventions.

An early preventative program, *The Nurse Family Partnership Program* (NFP) has decades of evidence supporting its effectiveness. NFP focuses solely on first-time mothers and has the following goals: (1) to improve pregnancy outcomes by promoting health-related behaviors; (2) improve child health, development and safety by promoting competent care-giving; (3) enhance parent life-course development by promoting pregnancy planning, educational achievement, and employment; (4) enhance families' material support by providing links with needed health and social services; and, (5) promote supportive relationships among family and friends. Through home visits with a registered nurse, the program has shown to be effective for better prenatal care (e.g., attended childbirth classes, accessing community services, and reduced smoking),⁷⁷ and safer home environments, and less emergency room visits for the child.^{78,79} At age 15 years, the child whose mother participated in NFP had significantly fewer arrests,

⁷⁶ Vandivere S, Chalk R, Moore KA. Children in foster homes: How are they faring? *Child Trends*, 2003; 23.

⁷⁷ Olds D, Henderson CR Jr, Tatelbaum R, & Chamberlin R. Improving the delivery of prenatal care and outcomes of pregnancy: A randomized trial of nurse home visitation. *Pediatrics*. 1986; 77: 16-28.

⁷⁸ Olds D, Henderson CR Jr, & Kitzman H. Does prenatal and infancy nurse home visitation have enduring effects on qualities of parental caregiving and child health at 25-50 months of life? *Pediatrics*. 1994; 93: 89-98.

⁷⁹ Kitzman H, Olds D, Henderson CR, et al. Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing: A randomized controlled trial. *Journal of the American Medical Association*. 1997; 278 (8): 644-652.

convictions, and violations of probation. As well, they were less likely to run away, have fewer sexual partners and drink less alcohol.^{80, 81}

The Primary Project is a targeted mental health intervention for children (aged 4-9 years) who have been screened and found to have early school adjustment difficulties such as mild aggression, withdrawal, and learning difficulties. A series of one-on-one sessions are provided for 30-40 minutes for up to 14 weeks. The curriculum consists of developmentally appropriate child-led play and relationship techniques to learn increased task orientation, behavior control, assertiveness, and peer social skills. Evaluations of the program^{82, 83, 84} have indicated its effectiveness for improving:

- Task orientation (e.g., learning difficulty, tolerance for frustration, willingness to follow school rules, and disruptive behavior);
- Behavior control (aggression, tolerance for frustration, willingness to follow school rules, and disruptive behavior);
- Peer sociability, and;
- Adaptive assertiveness in social situations (including sharing opinions) and in comparison with shyness and anxiety.

Multidimensional Treatment Foster Care is a behavioral treatment alternative to residential placement, incarceration, and hospitalization for adolescents with chronic antisocial behavior, emotional disturbance, and delinquency. The program seeks to avoid incarceration or psychiatric hospitalization for at-risk youth. Adolescents

⁸⁰ Olds D, Eckenrode J, Henderson CR Jr, Kitzman H, Powers J, Cole R, et al. Long-term effects of nurse home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial. *Journal of the American Medical Association*. 1997; 278(8): 637-643.

⁸¹ Olds D, Henderson C R Jr, Cole R, Eckenrode J, Kitzman H, Luckey D., et al. Long-term effects of nurse home visitation on children's criminal and antisocial behavior: 15-Year follow-up of a randomized controlled Trial. *Journal of the American Medical Association*. 1998; 280(14): 1238-1244.

⁸² Weissberg R P, Cowen EL, Lotyczewski BS, & Gesten EL. The Primary Mental Health Project: Seven consecutive years of program outcome research. *Journal of Consulting and Clinical Psychology*. 1983; 51: 100-107.

⁸³ Nafpaktitis M, & Perlmutter BF. School-based early mental health intervention with at-risk students. *School Psychology Review*. 1998; 27: 420-432.

are placed in trained community families for 6-9 months to receive treatment and intensive supervision, while at the same time, their birth families receive therapy and parent training. Both the Centre for the Study and Prevention of Violence⁸⁵ and The Office of Juvenile Justice and Delinquency Prevention's Model Programs⁸⁶ have identified this program as effective for reducing incarceration, arrests, running away and hard drug use; with better school attendance and homework completion at 1 year follow-up.

As these examples indicate, interventions are available to address various problems that children in care may experience. Other policy recommendations that have been suggested but not tested include: higher reimbursement for foster families, ensuring health surveillance, training and support for foster parents and kinship families, and reducing bureaucratic delays through improved service coordination.⁷⁶

Data Availability/Reliability for the potential indicator is assessed as **Low**. In BC, recording the number of children in different types of care is done under the auspices of the provincial Ministry of Children and Family Development (MCFD). Similar to results found in the child maltreatment section, the only publically available statistics on MCFD's web site relates to fatalities of children in care and the number of protection reports opened. Protection reports are calls the ministry receives from the public about children possibly at risk. Thus, an assessment of the reliability and validity of data collected by MCFD is not possible.

Based on the summary assessment of the 'Children in Care' concept, it is recommended that the indicator **rates of children in care (foster, kinship, institutionalized)** be considered as a **Core indicator** of child health and well-being in British Columbia, as sourced from the MCFD. As the evidence indicated, important considerations to track include: child and family characteristics, reason for placement, length of time in care, needed services, and the

⁸⁴ Crean HF, & Lotyczewski BS. *An evaluation of the Early Mental Health Initiative's Primary Intervention Program and Enhanced Primary Intervention Program for the 1994-95 academic year. Technical Report T95-428.1*. 1995. Rochester, NY: Children's Institute.

⁸⁵ Centre for the Study and Prevention of Violence. See <http://www.colorado.edu/cspv/blueprints/modelprograms/MTFC.html>. Accessed March 11, 2011.

⁸⁶ The Office of Juvenile Justice and Delinquency Prevention's Model Programs. See <http://www.ojjdp.gov/mpg/mpgProgramDetails.aspx?ID=362>. Accessed March 11, 2011.

number of care placements. It is also recommended that transparent, regular data about children in various forms of care from the MCFD be made publically available.

SOCIAL SUPPORT FOR PARENTS

BACKGROUND AND CONTEXT

The purpose of this review was to identify the evidence of an association between social support programs for parents and child outcomes. Living in poverty is one of the leading causes of poor child development and health. Children living in socio-economically depressed neighbourhoods have a myriad of disadvantages facing them and their families. These include: poorer physical health, increased social stressors, greater incidences of emotional, behavioral, and cognitive problems and more difficulties in school.^{87 88 89 90 91}

One of the most widely used public health methods for ameliorating the effects of poverty on child health and development is through the use of family support services. Typically, family support programs are preventive in nature and focus on the parent (knowledge, behavior, attitudes, mental health, substance abuse, child maltreatment) and/or the child (social, emotional, behavioral, health, or academic competencies). Programs to support parents have been around for a long time and their efficacy is now being systematically measured. As Goodson (2005)⁹² notes, debate exists on whether parenting programs are effective for children. Some show

⁸⁷ Evans G. The environment of childhood poverty. *American Psychologist*. 2004; 59(2): 77-92.

⁸⁸ National Institute of Child Health and Human Development Early Child Care Research Network. Poverty and patterns of child care. In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 100–131). 1997: New York: Russell Sage Foundation.

⁸⁹ Emery RE, Laumann-Billings L. An overview of the nature, causes, and consequences of abusive family relationships. *American Psychologist*. 1998; 53: 121–135.

⁹⁰ Duncan GJ, Yeung W, Brooks-Gunn J, Smith J. How much does poverty affect the life chances of children? *American Sociological Review*. 1998; 63: 406–423.

⁹¹ Coley RJ. *An uneven start: indicators of inequality in school readiness*. 2002: Princeton, NJ: Educational Testing Service.

⁹² Goodson BD. Parent support programs and outcomes for children. 2005: *Encyclopedia of Early Child Development*. See <http://www.child-encyclopedia.com/en-ca/parenting-skills/according-to-experts/goodson.html>.

efficacy while others do not; perhaps due to the lack of carefully controlled studies, differences in sample populations, program implementation or the type of child or parent being served.

The past decade has seen a number of systematic reviews and meta-analyses on parent support programs, which can assist in disentangling these potential confounds. This review found three meta-analyses addressing: home visiting, child skills training and a review of systematic reviews/meta-analyses related to programs for infant mental health, emotional and behavioral difficulties, autism spectrum disorder and attention deficit hyperactivity disorder, abuse/neglect, alcohol/substance abuse and 'vulnerable parents'.

KEYWORDS

Social support, parents, parenting programs

VOLUME REPORT FOR SOCIAL SUPPORT FOR PARENTS AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
171	23	9	3
Excluded if not related to youth outcomes and social support for parents	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=3

SYSTEMATIC REVIEWS AND META-ANALYSES FOR SOCIAL SUPPORT FOR PARENTS ON CHILD HEALTH AND WELL-BEING

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Sweet (2004)	Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children	60 programs	Home visiting was shown to have significant but small effects on child outcomes; cognitive and socioemotional scores better than controls. Parents also benefited in terms of attitudes and behavior. As well, the actuality and possibility of abuse were lower for home visited families than controls.
Losel (2003)	Effects of child skills training in preventing antisocial behavior: a systematic review of randomized evaluations	84 reports; 135 comparisons	A highly significant post intervention effect of child skills training was found. Although it was a small effect size, it is comparable to other prevention program effects in magnitude.
Law (2009)	Developing policy in the provision of parenting programmes: integrating a review of reviews with the perspective of both parents and professionals	20 systematic reviews or meta-analyses	Evidence of effective programs for infant mental health, children with emotional and behavioral problems, adolescent substance abuse, and one-to-one visiting for teen parents. Mixed evidence for addressing physical abuse, autism and ADHD. Little or no evidence for preventing neglect and adolescent alcohol abuse.

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Law J, Plunkett C, Taylor J, Gunning M. Developing policy in the provision of parenting programmes: Integrating a review of reviews with the perspective of both parents and professionals. *Child: care, health and development*. 2009; 35(3): 302-312.

Losel F, Beelmann A. Effects of child skills training in preventing antisocial behavior: a systematic review of randomized evaluations. *Annals of the American Academy of Political and Social Science*. 2003; 587: 84-109.

Sweet MA, Appelbaum MI. Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families of young children. *Child Development*. 2004.; 75(5): 1435-1456.

RESULTS FOR SOCIAL SUPPORT FOR PARENTS

Sweet and Appelbaum (2004) in their meta-analysis of 60 home visiting programs found an overall positive but small effect for this social service. Home visiting was effective for increasing children's cognitive and socioemotional outcomes. Further, home visiting positively influenced parents' attitudes and behaviors and the potential and actuality of child abuse was lower in families receiving this service compared to controls.

Social skills training for children is typically a structured program, often led by a teacher, that focuses on nonaggressive modes of social perception, attribution, self-control, anger management, victim empathy, and interpersonal problem solving. Losel and Beelmann (2003) conducted a meta-analysis of 135 comparisons between treated and untreated children (N=16, 723) in order to compare the effectiveness of these programs for preventing antisocial behavior. These authors found a highly significant post intervention effect of child skills training from these randomized controlled studies. Although it was a small effect size ($d = .38$), it is comparable to other prevention program effects in magnitude.

A review of systematic reviews and meta-analyses of 20 different parenting programs was conducted by Law et al (2009). Included in the types of programs examined were those targeting infant mental health, emotional and behavioral difficulties, autism spectrum disorder and attention deficit hyperactivity disorder, abuse/neglect, alcohol/substance abuse and 'vulnerable parents'. Their results found evidence to support programs designed for promoting infant mental health, i.e., child-infant attachment. Behavioral and cognitive behavioral parenting groups were also shown to be effective for improving child emotional and behavioral adjustment.

Some programs were shown to be effective for reducing the risk of delinquency, incarceration and arrest for youth with conduct disorders while others showed no effects for parental mental health, family functioning, risk of incarceration and peer relations. Parent training was not considered effective for hyperactivity, impulsivity or autism spectrum disorder but some programs did positively impact children's attention, communication and general cognition. The authors note that there is little evidence to support interventions aimed at preventing child neglect. Contradictory evidence was found regarding the effectiveness of preventing child physical abuse. Some found the programs ineffective while others indicate that parenting programs which deal with physical discipline practices or responsive parenting do work. Multi-dimensional family therapy or brief strategic family therapy was shown to be effective for reducing adolescent substance abuse and for improving family functioning. For teenage parents, one-to-one parenting programs were shown to significantly improve mother-infant interactions, maternal sensitivity and maternal attitudes and behaviors; however group-based parenting programs were not shown to be effective for this sample.

DATA SOURCES OF SOCIAL SUPPORT NEEDED FOR PARENTS

Indicators of poverty and families needing social support include children living in low-income families and families receiving income assistance. The Ministry of Housing and Social Development collects data on the number of children in families receiving Income Assistance. The *Survey of Labour and Income Dynamics* collects data on persons and families of low income. Food security is determined by The *Canadian Community Health Survey* and The McCreary Centre Society's *Adolescent Health Survey*.

DISCUSSION

According to the 2010 BC Report Card on Child Poverty⁹³

- There was an average of 28,958 children in families on welfare in 2008. Many of the children were in lone-parent families, mostly families led by lone-parent mothers. The number of people on welfare has been rising in 2009 and 2010, and the number of children on welfare as of August 2010 was 37,282.
- British Columbia's child poverty rate fell for the second consecutive year to 14.5 percent in 2008, using Statistics Canada's Low Income Cut-Offs before-tax as a measure of poverty. The BC rate was just above the national rate for all ten provinces of 14.2 percent. The number of poor children in BC was 121,000.
- The 2008 figure before-tax followed six consecutive years when British Columbia had the worst child poverty record of any province in Canada. Sadly, BC still had the highest child poverty rate in 2008 using the Low Income Cut-Offs after income taxes. The after-tax rate was 10.4 percent, compared to the national rate of 9.1 percent.
- The poverty rate for BC children living in families headed by lone-parent mothers was a record low of 30.9 percent in 2008, down from 43.4 percent in 2007. Despite this drop, lone-parent mother-led families still have one of the higher poverty rates for any family type in BC. The poverty rate for BC children in two-parent families was 12.2 percent in 2008, down slightly from 12.8 percent a year earlier.

⁹³ 2010 Report Card on Child Poverty. First Call and Sparc BC. See <http://www.campaign2000.ca/reportCards/provincial/BritishColumbia/2010ReportCard.pdf>. Accessed March 14, 2011

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator ‘Social Support for Parents’.

SUMMARY ASSESSMENT						
Social Support for Parents						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Social Support for Parents	0-19	121,000	High	High	Medium	High

The pediatric population **Magnitude** of the potential indicator is assessed as **High**. This is based on a pediatric population of 0-19 yrs, where 14.5 % of children in BC lived in poverty according to Statistics Canada’s low income cut-off rate in 2008.⁶³ The resulting estimated prevalence amongst BC children is 121,000, which is above 10% of the total pediatric cohort of children in BC.

The **Significance/Impact** of the need for the potential indicator on an individual’s health and well-being is assessed as **High**. Living in poverty is by far one of the most deleterious influences on child health and well-being and the impetus for most of the social support programs provided to families. Children living in poverty have shown to have worse health outcomes compared to other children when functional health (a combination of vision, hearing, speech, mobility, dexterity, cognition, emotion, pain, and discomfort) is evaluated.⁹⁴ As well, children in lower SES

⁹⁴ Ross DP, & Roberts P. *Income and Child Well Being. A New Perspective on the Poverty Debate*. 1999; Ottawa, Ontario: Canadian Council on Social Development.

neighbourhoods are more likely to experience injuries,^{95,96} likely due to poorer quality housing, fewer safe play areas, and a proximity to high traffic and/or industrial areas.⁹⁷

Social stressors such as increased drug use, a higher incidence of child abuse and domestic conflicts, a higher prevalence of mental health problems, threats to physical safety and an increased incidence of teenage pregnancy and illiteracy have been reported for low income areas.⁹⁸ As well, Evans and colleagues found in their longitudinal study of 339 children (initially in grades 3-5), that poorer neighbourhoods are noisier, more crowded and frenetic; where children experience less family structure and predictable daily routines. As result, children from these environments exhibit greater psychological distress, learned helplessness and poorer self-regulated behavior.⁹⁹

The **Modifiability** of the potential indicator is assessed as **Medium**. The evidence for prevention programs to ameliorate the negative effects of poverty and associated risks are generally positive, although not consistently effective across the range of risk factors. Home visiting programs that focus on providing information and skills for parents and those focused on teaching children social emotional skills showed significant but small effects on child health and well-being (effect sizes consistent with other prevention programs). Behavioral and cognitive behavioral parenting programs designed to address parent-child attachment and improve children's emotional and behavioral adjustment have proven useful. The evidence is mixed for the efficacy of programs designed to change parental behavior and family functioning. Multi-dimensional family therapy or brief strategic family therapy has been shown to be effective for reducing adolescent substance abuse and for improving family functioning. For teenage parents, one-to-one parenting programs were shown to significantly improve mother-infant interactions, maternal sensitivity and maternal attitudes and behaviors; however group-based parenting programs were not

⁹⁵ Dougherty G, Pless IB, & Wilkins R. Social class and the occurrence of traffic injuries and deaths in urban children. *Canadian Journal Public Health*. 1990; 81: 204–9.

⁹⁶ Durkin MS, Davidson LL, Kuhn L, et al. Low-income neighborhoods and the risk of severe pediatric injury: a small-area analysis in northern Manhattan. *American Journal of Public Health*. 1994; 84: 587–92.

⁹⁷ Faelker T, Pickett W, & Brison RJ. Socio-economic differences in childhood injury: a population based epidemiologic study in Ontario, Canada. *Injury Prevention*. 2000; 6(3): 203-8.

⁹⁸ Romaz T, Kantor J, & Elias, M. Implementation and evaluation of urban school-wide social-emotional learning programs, *Evaluation and Program Planning*. 2004; 27: 89-103.

⁹⁹ Evans, G., Gonnella, C., Marcynyszyn, L.A., Gentile, L., & Salpekar, N. The role of chaos in poverty and children's social-emotional development. *Psychological Science*, 16(7), 560-565.

shown to be effective for this sample. Programs designed to address child maltreatment have been less successful.

Data Availability/Reliability for child poverty in BC is assessed as **High**. Multiple sources of data are available that measure child poverty rates including Statistics Canada, The Ministry of Housing and Social Development, and The *Survey of Labour and Income Dynamics*. Data for children in families in the province receiving Income Assistance are collected by the Ministry of Housing and Social Development. Listed are end of month counts of families receiving Income Assistance, and end of month counts of children in families receiving Income Assistance. Income Assistance cases are an aggregate of two specific case categories: Temporary Assistance Cases, and Disability Assistance Cases. The former case category is further delineated into subcategories based upon the individual's readiness to work.

The Survey of Labour and Income Dynamics (SLID) is a longitudinal survey administered by Statistics Canada. The SLID targets all persons living in Canada, and since 1993 has collected information on economic well-being and its determinants. The SLID is designed to support reliable statistical inference at the provincial level and for certain Central Metropolitan Areas, but the survey excludes the following groups: persons living in the Yukon, the Northwest Territories, and Nunavut, persons living on Reserves, persons living in institutions, and military personnel living in barracks. The SLID, unlike the *Labour Force Survey* for example, does not have explicit guidelines surrounding the release of low quality estimates. However, documentation suggests that the sampling variability of estimates for British Columbia, as measured by the coefficient of variation, is well within the acceptable bounds Statistics Canada has defined for estimates sourced from other surveys.

Based on the summary assessment of the Social Support for Parents concept, it is recommended that the indicators ***incidence of low income and families receiving financial assistance*** be considered **Core indicators** of child health and well-being in British Columbia, populated from data from the Ministry of Housing and Social Development. With one in five children in BC living in poverty and the large deleterious effects of poverty on child health and development, there is a need to ensure indicators that track family economic well-being.

SAFETY THEME

The safety theme addresses the impact of bullying, parental alcohol/substance abuse and neighborhood safety on child health and well-being.

BULLYING

The purpose of this review was to examine the evidence of an association between bullying and child health and well-being. The Center for the Study and Prevention of School Violence ¹⁰⁰ defines bullying as: (1) aggressive behavior or intentional harm-doing; (2) carried out repeatedly and over time; and, (3) occurring within an interpersonal relationship characterized by an imbalance of power. There are two categories of bullying: direct and indirect. Direct bullying can be physical such as hitting, choking, kicking, or verbal that includes name calling, threatening, taunting, and malicious teasing. Indirect bullying involves relational aggression such as social isolation, intentional exclusion, rumor-spreading, damaging someone’s reputation, making faces or obscene gestures behind someone’s back, and manipulating friendships and other relationships. Cyberbullying is a form of indirect bullying where electronic devices are used to threaten or embarrass people.

KEY WORDS

Peer victimization, peer harassment, peer aggression, bullying

VOLUME REPORT FOR BULLYING AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
547	123	11	6
Excluded if not related to youth outcomes and bullying	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=2; studies=4 (one paper has 3 studies)

¹⁰⁰ The Center for the Study and Prevention of School Violence. See <http://www.safeschools.state.co.us/docs/Fact%20Sheet%20Bullying%20CSPV.pdf>. Accessed March 9, 2011,

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR BULLYING AND CHILD HEALTH AND WELL-BEING

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
Reijntjes (2010)	Peer victimization and internalizing problems in children: a meta-analysis of longitudinal studies	18 studies	Longitudinal studies were examined in order to explore the extent to which peer victimization at baseline predicts changes in internalizing problems, as well as the extent to which internalizing problems at baseline predict changes in peer victimization. Results revealed significant associations between peer victimization and subsequent changes in internalizing problems, as well as significant associations between internalizing problems and subsequent changes in peer victimization. Internalizing problems function as both antecedents and consequences of peer victimization.
Nakamoto (2009)	Is peer victimization associated with academic achievement? A meta-analytic review	33 studies	There was a small but significant negative effect of peer victimization and academic achievement ($r=-.12$, $p<.001$). No differences were found by gender.

SUMMARY OF STUDIES FOR BULLYING AND CHILD HEALTH AND WELL-BEING

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results Conclusion/Comment
Tharp-Taylor (2009)	Victimization from mental and physical bullying and substance abuse in early adolescence	California; N=926; \bar{X} age = 12.4 (grades 6,7,8); 55% female	Longitudinal Self-report survey of last 30 days use of substance use and bullying; 2 waves Logistic regression analyses	30-day alcohol, cigarette, marijuana and inhalant use	Youth who experienced mental or physical bullying or both were significantly more likely to use each substance 1.5 years later, even after controlling for gender, grade level, ethnicity and previous substance use.
Houbre	Bullying among	<u>Study 1</u>			

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results Conclusion/Comment
		<u>Study 3</u> (N=162; 70 regular school, 92 special education school); grade 6-9 (\bar{x} age = 14 years)	Same as above	post-traumatic stress, self-concept, aggressive acts	

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Nakamoto J, WestEd, Schwartz D. Is peer victimization associated with academic achievement? A meta-analytic review. *Social Development*. 2010; 19 (2): 221-242.

Reijntjes A, Kamphuis JH, Prinzie P, Telch MJ. Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect*. 2010 Apr; 34(4):244-52.

Tharp-Taylor S, Haviland A, D'Amico EJ. Victimization from mental and physical bullying and substance abuse in early adolescence. *Addictive Behaviors*. 2009; 34: 561-567.

RESULTS FOR BULLYING

Psychological distress

Reijntjes et al (2010) conducted a meta-analysis to determine whether internalizing problems predicated or resulted from (or both) in relation to bullying. Internalizing behavior included: anxiety, depression, withdrawal, loneliness, and somatic symptoms (headache or poor appetite). The results showed that peer victimization significantly predicted internalizing problems over time (Pearson's $r = .18$). As well, internalizing problems significantly predicted peer victimization over time ($r = .08$). The authors conclude that a symmetrical bi-directional relationship exists between peer victimization and internalizing problems. The observed effect sizes were small to moderate but consistent with those observed in psychological research which includes genetic, biological, and environmental factors influencing outcomes. Houbre et al (2006) found that victimization (victims and bully/victims) was associated with higher levels of post traumatic stress disorder including intrusive thoughts and higher stress levels.

Academic achievement

Nakamoto and Schwartz (2010) conducted a meta-analysis on the relationship between peer victimization and academic achievement. Included were 33 longitudinal studies that addressed indirect, relational, physical, verbal, and generic bullying. The significant but negative association found indicates that victimization is related to concurrent academic functioning difficulties. The effective size was considered small but significant ($r = -.12$, $p < .001$). Houbre et al (2006) found that bully/victims and bullies exhibited a lack of scholastic competence in elementary school students.

Substance use

Tharp-Taylor et al (2009) found a positive association between victimization from mental and physical bullying and later substance abuse. In this sample of middle school students, 51% reported having experienced mental bullying, 34% reported experiencing physical bullying and 28% experienced both. Students who had experienced mental or physical bullying or both were significantly more likely to use alcohol, cigarettes, marijuana and inhalants, one and a half years later compared to those not bullied, even after controlling for gender, grade level, ethnicity and previous substance use. These results are consistent with previous research studies which have found an association between substance use and bullying in older adolescents and in adults. In the third study conducted by Houbre et al (2006), bullying was linked to higher rates of smoking and taking drugs in middle school students.

Self-concept

Houbre et al (2006) showed that bully/victims had the lowest scores for self-control, social competence, physical appearance, and global self-worth in elementary school children. Victims had higher scores than bully/victims but lower than controls or bullies on social competence, physical appearance, and global self-worth. They also had the lowest scores on athletic competence. Bullies had the highest scores on self-concept and physical appearance compared to the victims and bully/victims and even higher than controls on athletic and social competence. Perceived sense of control was higher in bully/victims but lower than the other two groups. Looking at magnitude, there was a strong negative association between bullying and self-control and a positive but more moderate association for social competence, athletic competence, physical appearance, and global self-worth. Victimization showed a significant negative correlation with social competence, athletic competence, physical appearance, and self-worth. There was a significant correlation with being bullied and self-control.

Psychosomatic symptoms

Houbre et al (2006) also showed that children involved in bullying (victim, bully, bully/victim) exhibited a large number of psychosomatic symptoms. Bully/victims had the highest scores and were most affected by neurovegetative disorders, digestive problems, somatic pain, and skin conditions. Victims exhibited cognitive difficulties, neurovegetative disorders, somatic pain, and skin conditions. Compared to controls, bullies had higher symptoms of digestive and neurovegetative disorders. The psychosomatic symptoms were partially explained by aggressive acts received, low self-perceived social competence and aggressive acts executed.

Behavioral problems

Houbre et al (2006) also found a positive link between being a bully/victim and increased behavioral problems. As well, there was a positive link between behavioral problems and the onset of psychosomatic disorders.

DATA SOURCES FOR BULLYING

The *Adolescent Health Survey* (for community sample and youth in custody) collects information on bullying for all youth in grades 7-12. The question asks "how often do you feel safe at school?"

The *Middle Years Development Instrument* survey also collects information on bullying for children in grade 4.

Finally, the *British Columbia's School Satisfaction Survey* asks "Do you feel safe at school?, and 'At school, are you bullied, teased, or picked on?"

DISCUSSION

According to the 2008 BC *Adolescent Health Survey*, 33% of males, and 15% of females had been in a physical fight in 2008. The survey also asked about cyber bullying, where 17% of youth reported being bullied or picked on

through the internet. Of those who had been cyber bullied compared those never bullied: 19% vs. 4% felt extremely sad or discouraged in the past month; 24% vs. 13% reported that they don't like school; and 31% vs. 9% seriously considered suicide in the past year.

According to *Time Out II A Profile of BC Youth in Custody*, more than two-thirds of youth in custody (70%) are bullied or picked on others while living in the community (67% of the girls and 71% of the boys), compared to 75% in the 2000 survey. Bullying involves physically harming or verbally harassing someone to get something, such as money, food or cigarettes, or to make them do something against their will. More than a third of youth (37%) bullied or picked on others one or more times a week or every day, compared to 43% in 2000. Almost half of youth in custody (49%) bully others but are not bullied themselves, while 21% bully others and are also bullied. And 5% of these youth are victims of bullying, but do not bully others. Only 25% of youth in custody are not involved in any bullying in the community. A quarter of youth (25% of girls and 26% of boys) had been bullied or picked on while living in the community, most once or twice.

The *Middle Years Development Instrument Survey*,¹⁰¹ administered in 73 Vancouver schools to 3,032 grade four students in 2010, also collected information on bullying. Although statistics for this indicator were not available in their report, the authors indicated that children's levels of worries are significantly related to the extent to which they are bullied in school. For example, of the children who were socially bullied several times a week, 50% reported high levels of worries, whereas of the children who were not bullied, only 12% reported high levels of worries.

The BC Ministry of Education also collected information on bullying in their *School Satisfaction Survey*¹⁰² for students in grades 3/4, 7, 10 and 12. According to statistics for 2009/2010, the following report being bullied at school: 9% (Grade 3 and 4), 8% (Grade 7), 7% (Grade 10) and 6% (Grade 12). For students who reported feeling safe at school, 'many times or all of the time' the following percentages were noted: 81% (Grades 3 and 4), 79% (Grade 7), 73% (Grade 10) and 79% (Grade 12).

¹⁰¹ Our children's voices: *Middle Years Development Instrument*. See <http://www.theprovince.com/pdf/mdireport.pdf>. Accessed March 12, 2011.

¹⁰² BC Ministry of Education *School Satisfaction Survey*. See http://www.bced.gov.bc.ca/sat_survey/. Accessed Feb, 5, 2011.

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator ‘Bullying’.

SUMMARY ASSESSMENT						
Bullying						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Bullying	6-19	63,278	Medium	High	High	High

The pediatric population **Magnitude** of the potential indicator is assessed as **Medium**. This is based on a pediatric population of 6-19 yrs or 703,098 children of which 9% of students (grades 3/4) answered the BC Ministry of Education’s *School Satisfaction Survey* that they had been bullied in 2009/2010. The resulting estimated prevalence amongst BC children is 62,278, which is between 2-10 percent of the total pediatric cohort of children in BC.

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual’s health and well-being is assessed as **High**. The evidence indicates a negative association between bullying and child health and well-being across a large number of domains. Children who are victims of bullies showed significantly higher levels of psychological distress including anxiety, depression, withdrawal, PTSD, stress levels, and somatic complaints. Earlier research has also indicated a relationship between bullying and a heightened risk of suicide ideation and attempts.^{103, 104} There was a strong negative effect of bullying and self control and a moderate effect for bullying

¹⁰³ Kaltiala-Heino R, Rimpela M, Marttunen M, Rimpela A & Rantanen P. Bullying at school: An indicator of adolescents at risk for mental disorders and suicide ideation in Finnish adolescents. *British Medical Journal*. 1999; 319: 348-351.

and a sense of self-worth, social competence, athletic competence, and physical appearance. Somatic problems (neurovegetative disorders, digestive problems, and somatic pain) affected all involved in bullying (victims, bully, and bully/victims). Bully/victims consistently had the worse outcomes in those studies that included this group. Small but significant effects were seen between peer victimization and academic competence. Longitudinal studies found that children who had been victims were significantly more likely to abuse alcohol and drugs years later.

The **Modifiability** of the potential indicator is assessed as **High**. A recent Campbell Corporation Systematic Review and Meta-analysis¹⁰⁵ was conducted on the effectiveness of school-based bully prevention programs. Of the six hundred twenty-two reports that were examined; 53 programs who met the inclusion criteria were evaluated. Based on these programs, Farrington and Ttofi (2009) found that overall, school-based anti-bullying programs are effective in reducing bullying and victimization. Parent training/meetings and disciplinary methods were highlighted as the most successful program elements, with the total number of elements and the duration and intensity of the program for teachers and children having a significant impact. However, peer mediation and peer mentoring programs were found to be ineffective and in fact, increased victimization. Cook, Williams, Guerra, Kim and Sadek (2010)¹⁰⁶ recommend that interventions should be multifaceted and focus on the individual, the peer ecology and the broader contexts such as neighborhoods.

Data Availability/Reliability for the potential indicator is assessed as **High**. Two sources of data are available that request information about child and youth safety at school. The McCreary Centre Society *Adolescent Health Survey* queries whether adolescents feel safe at school and if they experience cyber bullying. As well, The British Columbia *School Satisfaction Survey* asks children in grades 3/4, 7, 10 and 12 “At school are you bullied, teased or picked on?” and “Do you feel safe at school?” Information on these measures has been discussed previously and can also be accessed in Annex H-1.

¹⁰⁴ Rigby K, & Slee P. Suicide ideation among adolescent school children, involvement in bully-victim problems and perceived social support. *Suicide and Life Threatening Behavior*. 1999; 29: 119-130.

¹⁰⁵ Farrington D P, & Ttofi MM. *School-Based Programs to Reduce Bullying and Victimization*. Campbell Systematic Reviews 2009:6 10.4073/csr.2009.6

¹⁰⁶ Cook CR, Williams KR, Guerra NG, Kim TE & Sadek S. Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*. 2010; 25(2): 65-83.

Based on the summary assessment of the Bullying concept, it is recommended that the indicator ***percentage of children who report being bullied, teased or picked on at school*** be considered a **Core indicator** of child health and well-being in British Columbia, populated with data from the British Columbia *School Satisfaction Survey* and The McCreary Centre Society *Adolescent Health Survey*. The decision for core indicator was based on the substantial impact of bullying on children's immediate and long-term health and well-being as indicated by the evidence reviewed, and its high ratings of modifiability and data availability/validity.

PARENTAL ALCOHOL/SUBSTANCE ABUSE

BACKGROUND AND CONTEXT

The purpose of this review was to examine the evidence of association between parental alcohol and substance abuse and child health and well-being outcomes. The definition of alcohol/substance abuse comes from the Health Officers Council of British Columbia¹⁰⁷

Psychoactive drugs or substances: chemicals that alter mental functioning for the effects on mood and/or with an altered state of subjective reality. This includes illegal drugs, some prescription drugs, alcohol, and tobacco.

Harmful substance use: use of, and/or dependency on, psychoactive drugs that causes demonstrable harm, either for the individual or society, in terms of negative health, social or economic effects and would usually apply to such use of illegal drugs, prescription drugs or alcohol. Not usually conceptually applied as a lay term to tobacco use, although tobacco use is included in the term herein.

Research in this areas falls into three types of outcomes: prenatal exposure, immediate effects, and long-term effects. The most researched area of parental substance abuse and child health outcomes has been associated with Fetal Alcohol Spectrum Disorder (FASD). According to the *Encyclopedia of Early Child Development* from the University of Montreal,

FASD is a permanent birth defect caused by maternal consumption of alcohol during pregnancy. The term FASD is used to describe a range of disabilities and diagnoses such as Fetal Alcohol Syndrome (FAS) or

¹⁰⁷ Health Officers Council of British Columbia definition of alcohol/substance abuse. See <http://www.cfdp.ca/bchoc.pdf>. Accessed March 16, 2011.

alcohol-related neurodevelopmental disorder (ARND) and is applied to children whose mothers are known to have drunk heavily during pregnancy and who exhibit some, but not all, features of alcohol-related facial malformation. FASD is the leading cause of mental retardation in the Western world. Related birth defects, cognitive and developmental disabilities can be prevented by avoiding alcohol during pregnancy. In Canada, it is estimated that nine in every 1,000 children born suffer from FASD, ¹ that is more than 3,000 babies a year and an estimated 300,000 people are currently living with it. ¹⁰⁸

This review includes a systematic review that explores challenging behaviors of children prenatally exposed to alcohol or cocaine. As well, the effects of postnatal parental alcohol use are explored for outcomes on children and adolescents.

KEYWORDS

Parental substance abuse, parental alcohol abuse

VOLUME REPORT FOR PARENTAL ALCOHOL/SUBSTANCE ABUSE AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
64	13	9	4
Excluded if not related to youth outcomes and parental alcohol/substance abuse	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=1; studies=3

¹⁰⁸ O'Connor M. *Fetal Alcohol Spectrum Disorder: Synthesis of the experts*. See <http://www.child-encyclopedia.com/en-ca/fetal-alcohol-spectrum-disorder/how-important-is-it.html>. Accessed March 13, 2011.

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR PARENTAL ALCOHOL/SUBSTANCE ABUSE AND CHILD HEALTH AND WELL-BEING

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
Dixon (2008)	A systematic review of challenging behaviors in children exposed prenatally to substances of abuse	37 studies	<p>For prenatal exposure to cocaine, 13 of 37 studies found evidence of challenging behavior in the children. Exposed children rated higher on measures of aggression, destruction and other externalizing behavior. Of the ten studies that explored the post natal environment on behavioral problems, 9 reported a significant impact. The effects are stronger for boys than girls. For studies that controlled for post natal environmental influences (SES, caregiver mental health/drug use), it appears that the current situation is influential on the presence or absence of challenging behaviors. There also appears to be a dose response effect with more consistent use of prenatal exposure associated with worse behavioral and delinquent behaviors in males. Studies also found an association for lower IQ and verbal reasoning in males at 4 years of age.</p> <p>For prenatal alcohol exposure, 12 of 13 studies found an independent effect of prenatal exposure to children’s challenging behavior. Challenging behaviors included: social and attention problems, tantrums, eating problems, disruptive and anti-social behavior. Three of these studies controlled for post natal environment and found that when current maternal behaviors were controlled, the negative effects of prenatal exposure were no longer significant to children’s challenging behavior. As well, a dose-response effect was noted for externalizing and internalizing behavior in children 6-7 years; where any level of prenatal exposure indicated difficulties.</p>

SUMMARY REVIEW OF STUDIES FOR PARENTAL ALCOHOL/SUBSTANCE ABUSE AND CHILD OUTCOMES

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
Schuckit (2003)	Describe how potential predictors of future substance abuse was associated with externalizing behavior by age.	California, USA; N=145; Age range = 7-17 years; 52.4% males; 90% Caucasian	15 year longitudinal controlled design Structured equation modeling	Children's Behavior Checklist; externalizing behaviors	Grandparent alcohol abuse (but not fathers'), grandparent's and parent's history of mood or anxiety disorder, pregnancy or birth complication and parent's not together was significantly associated with externalizing and internalizing behavior problems in their children. For externalizing behavior problems, the variables identified above accounted for $R^2 = .26$. Results were similar for both young and old children and boys and girls.	
Barnow (2007)	Examine the association between parental history of alcohol abuse and antisocial behavior disorder on children's aggression, delinquency and attention problems.	Germany; N=340; \bar{x} age =15 years; 46.5 % boys	Population-based randomized sample; 4 groups: yes/no hx of alcoholism, ASPD MANCOVAs	Children's Behavior Checklist; externalizing behaviors (youth version; mother version)	In groups where there was a family history of alcoholism and ASPD (father), adolescents presented with significantly greater attention problems and a tendency toward aggressive/delinquent behavior.	
Chassin (1999)	A longitudinal study of children of alcoholics: predicting young adult substance abuse disorders, anxiety and depression	USA; N=454 families-Time 1; Follow-up Time 4: N=414 families-732 young adults; \bar{x} age = 20 years	Longitudinal matched controlled design; Interviews with parents and adolescents (3X) and follow-up	Child Behavior Checklist; substance abuse; DSM-III-R- anxiety, depression, substance use	1) Compared to non-COA, COA were at a significantly elevated risk for diagnosis of alcohol and drug abuse or dependence, and depressive disorder, and were marginally elevated in their risk for anxiety disorder. 2) Young adults with alcoholic mothers, with alcoholic fathers, with parents with antisocial personality disorder, and males were more likely to develop alcohol abuse or dependence. 3) Young adults with alcoholic mothers, with parental antisocial personality disorder, and with parental anxiety disorder were more likely to develop drug abuse or dependency. 4) Individuals with maternal alcoholism and women were at a higher risk for depression diagnosis.	

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
					<p>5) Parental depression was associated with a greater risk of offspring depression among younger vs. older participants.</p> <p>6) Anxiety disorders were more prevalent in those with alcoholic mothers, in those with parental anxiety disorder and in females.</p> <p>7) Young adult alcoholism was related to both adolescent externalizing symptoms and adolescent alcohol use.</p> <p>8) Young adult drug abuse was related to adolescent externalizing symptomology, adolescent drug use (for women) and parental antisocial personality disorder.</p> <p>9) Young adult depression was predicated by both adolescent internalizing and externalizing symptoms and marginally by adolescent drug use.</p>	

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Chassin L, Pitts SC, DeLucia C, Todd M. A longitudinal study of children of alcoholics: predicting young adult substance use disorders, anxiety and depression. *Journal of Abnormal Psychology*. 1999; 108(1): 106-119.

Cone-Wesson B. Prenatal alcohol and cocaine exposure: Influences on cognition, speech, language, and hearing. *Journal of Communication Disorders*. 2007 Jul;38(4):279-302.

Schuckit MA, Smith TL, Barnow S, Preuss U, Luczak S, Radzimirski S. Correlates of externalizing symptoms in children from families of alcoholics and controls. *Alcohol and Alcoholism*. 2003 Nov 1; 38(6):559-67.

RESULTS FOR PARENTAL ALCOHOL/SUBSTANCE ABUSE

Prenatal Exposure

Dixon et al (2008) conducted a meta-analysis that looked at the effects of prenatal alcohol and cocaine use on the following children's subsequent challenging behaviors: aggression, violent or destructive outbursts, stereotypy, and self-injury. These behavior types have the potential to impact a child's social relationships and educational experiences. For prenatal exposure to cocaine, 13 of 37 studies found evidence of challenging behavior in the children. Exposed children rated higher on measures of aggression, destruction and other externalizing behaviors. Of the ten studies that explored the postnatal environment on behavioral problems, 9 reported a significant impact. The effects are stronger for boys than girls. For studies that controlled for postnatal environmental influences (SES, caregiver mental health/drug use), it appears that the current situation is influential on the presence or absence of children's challenging behaviors. There also appears to be a dose response effect with more consistent use of prenatal exposure associated with worse behavioral and delinquent behaviors in males. Other studies found an association for lower IQ and verbal reasoning in males at 4 years of age.

For prenatal alcohol exposure, 12 of 13 studies found an independent effect of prenatal exposure to children's challenging behavior. Challenging behaviors included: social and attention problems, tantrums, eating problems, and disruptive and anti-social behavior. Three of these studies controlled for the postnatal environment and found that when current maternal behaviors were controlled, the negative effects of prenatal exposure were no longer significant. As well, a dose-response effect was noted for externalizing and internalizing behavior in children 6-7 years; where any level of prenatal exposure indicated difficulties.

Cone-Wesson (2005) in her literature review of the effects of prenatal alcohol and cocaine use also indicates that exposure can result in problems in children's speech, language, hearing and cognitive difficulties. Specifically, cognitive impairment, learning disabilities, behavioral disorders, and craniofacial abnormalities are associated with FAS. The craniofacial abnormalities make the child prone to otitis media with effusion and conductive hearing loss. Prenatal exposure to cocaine use is associated with subtle cognitive problems, and speech and language difficulties. Consistent with the meta-analysis conducted by Dixon et al above, Cone-Wesson noted the influence of postnatal family and environmental factors for exacerbating or ameliorating problems, especially for prenatal exposure to cocaine.

Immediate outcomes

Schuckit et al (2003) in a 15 year longitudinal study of family history and alcohol use disorders (AUD) conducted a follow-up study of the effects of parental alcohol abuse on their children. One hundred and fifty-one offspring who were between the ages of 7-17 years were assessed by their mother for internalizing and externalizing behavioral

problems, psychiatric symptoms, and the home environment. The results indicated that grandparent alcohol abuse (but not fathers'), grandparent's and parent's history of mood or anxiety disorder, pregnancy or birth complication and parent's not being together were significantly associated with children's externalizing and internalizing behavior problems. For externalizing behavior problems, the variables identified above accounted for $R^2 = 0.26$ of the variance. Results were similar for both young and older children and boys and girls.

Similar results for adolescents were found in a study conducted by Barnow et al (2007). Parental antisocial personality disorder (ASPD) has been associated with an increased risk of alcohol abuse as well as behavioral problems in children. This study explored the relationship between parental ASPD and drinking on their children's (aged 11-18 years) disruptive behavior problems (e.g., aggressive and delinquent) and attention problems. The results indicated that a combined history of alcoholism and paternal history of antisocial behavior disorder was associated with adolescent attention and behavioral problems. Thus, as both studies indicate, disruptive behavior in children is not solely associated with a family history of alcoholism but may be influenced by other co-morbid factors.

Long-term outcomes

Chassin et al (1999) looked at the long term consequences of parental alcoholism on adolescents and young adults. Using a longitudinal sample of individuals with alcohol abuse and matched controls, this study tested children of alcoholics (COA) and children not of alcoholics (non-COA) on measures of depression, anxiety, and substance use. The following results were found:

- 1) Compared to non-COAs, COAs were at a significantly elevated risk for diagnosis of alcohol and drug abuse or dependence, and depressive disorder, and were marginally elevated in their risk for anxiety disorder.
- 2) Young adults with alcoholic mothers, with alcoholic fathers, with parents with antisocial personality disorder, and males were more likely to develop alcohol abuse or dependence.
- 3) Young adults with alcoholic mothers, with parental antisocial personality disorder, and with parental anxiety disorder were more likely to develop drug abuse or dependency.
- 4) Individuals with maternal alcoholism and women were at a higher risk for depression diagnosis.
- 5) Parental depression was associated with a greater risk of offspring depression among younger vs. older participants.
- 6) Anxiety disorders were more prevalent in those with alcoholic mothers, in those with parental anxiety disorder and in females.
- 7) Young adult alcoholism was related to both adolescent externalizing symptoms and adolescent alcohol use.

8) Young adult drug abuse was related to adolescent externalizing symptomology, adolescent drug use (for women) and parental antisocial personality disorder.

9) Young adult depression was predicated by both adolescent internalizing and externalizing symptoms and marginally by adolescent drug use.

Thus, unique effects of parental alcohol abuse were seen for young adult substance abuse/dependency, over and above the effects of other parental psychopathology. Evidence also showed some effects of parental alcoholism on young adult depression and maternal alcoholism on young adult anxiety. Parental alcoholism only partially explained young adult externalizing behavior.

DATA SOURCES FOR PARENTAL SUBSTANCE ABUSE

The Canadian Addictions Survey collects information on the prevalence, incidence and patterns of alcohol and other drug use in the Canadian population aged 15 years and older. The drugs of interest include alcohol, tobacco, illicit drugs—including cannabis, heroin and other opiates, cocaine and crack, amphetamines, hallucinogens (including MDMA), and inhalants.

As well, *The Canadian Community Health Survey*, a cross-sectional survey that collects information related to health status, health care utilization, and health determinants for the Canadian population, collected information about drinking alcohol during pregnancy in their 2007/08 optional contents section for BC and Ontario.

The National Longitudinal Survey of Children and Youth (NLSCY) collected information about the prevalence of drinking alcohol during pregnancy in the 1994/5 and 1998/9 surveys.

The *Maternal Experiences Survey* (MES), administered through The Canadian Perinatal Surveillance System (CPSS), as part of the Public Health Agency of Canada, specifically collects information on alcohol and street drug ingestion during pregnancy. This 300 item national survey was designed to identify Canadian women's experiences, perceptions, knowledge, and practices before conception and during pregnancy, birth and the early months of parenthood. MES includes data from those thought to be at risk for adverse pregnancy outcomes, such as younger mothers (15–19 years), recent immigrant mothers, and First Nations, Inuit and Métis mothers.

Finally, the BC Perinatal Database Registry (BCPDR) under the umbrella of the British Columbia Perinatal Health Program is a comprehensive, province-wide perinatal database collected for the purpose of evaluating perinatal outcomes, care processes, and resources. The registry collects, summarizes, interprets, and reports on perinatal events, outcomes and care processes at a hospital, regional and provincial level. The BCPDR collects information on risk factors including maternal substance use.

DISCUSSION

According to the latest *Canadian Addictions Survey* in 2005:¹⁰⁹

Alcohol: A greater proportion of males than females: drank alcohol in the past year (82.0% vs. 76.8%); drank alcohol at least once a week (55.2% vs. 32.8%); usually drank five or more drinks at a sitting (23.2% vs. 8.8%); drank five or more drinks at a sitting at least once a week (9.2% vs. 3.3%); and exceeded the low-risk guidelines (30.2% vs. 15.1%).

Drugs: Excluding cannabis, the most commonly reported drugs used during one’s lifetime are hallucinogens, used by 11.4%, and cocaine (10.6%), and then speed (6.4%) and ecstasy (4.1%). About 3.0% of Canadians (4.3% of males and 1.8% of females) report using at least one of the five illicit drugs other than cannabis (cocaine or crack; hallucinogens, PCP or LSD; speed or amphetamines; heroin; ecstasy, and 14.5% (18.7% of males and 10.6% of females) report using any of the eight drugs, including steroids and inhalants.

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator ‘Parental substance abuse’. Note that the potential indicator below has been separated into prenatal and postnatal substance abuse.

SUMMARY ASSESSMENT						
Parental Substance Abuse						
			Magnitude	Significance / Impact	Modifiability	Data Availability/Validity
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C.	Proportion of BC child /youth population to which concept/indicator	Association between concept and health/well-being	Degree the concept/indicator(s) be reasonably changed through public policy	Existence and validity of information for the component indicator(s) for

¹⁰⁹ Adlaf, E.M., Begin, P., & Sawka, E. (Eds.). (2005). *Canadian Addiction Survey (CAS):A national survey of Canadians' use of alcohol and other drugs: Prevalence of use and related harms: Detailed report*. Ottawa: Canadian Centre on Substance Abuse.

		<i>Children</i>	<i>applies</i>	<i>dimension</i>	<i>or other intervention</i>	<i>each concept</i>
Prenatal Parental Substance abuse	0-1	801-3116	Low	High	Medium	High
Postnatal Parental Substance Use	0-19	29,112-292,112	High-Alcohol Medium-Drugs	Medium	Medium	High

PRENATAL SUBSTANCE ABUSE

The pediatric population **Magnitude** of the potential indicator ‘prenatal parental substance abuse’ is assessed as **Low**. This rating is based on a pediatric population of 0-1 yrs or 44,516 children of which 7.2 % of the adult female population indicated that they drank alcohol during their last pregnancy (weighted estimates based on the *Canadian Community Health Survey*)¹¹⁰, affecting 3,116 infants. Research on alcohol use during pregnancy for women of Aboriginal heritage has suggested a much higher prevalence rate; from 25-200 per 1,000 live births in some isolated northern communities.¹¹¹ The estimate for prenatal exposure to drugs is calculated based on *The Canadian Addictions Survey* of 2005, where 1.8% of adult females report using at least one of five illicit drugs of 44,516 BC children or 801 infants potentially prenatally exposed. This estimate is slightly higher than the 1% of women who reported using street drugs during their pregnancy according to results of the *Canadian Mothers Maternity Survey*.¹¹²

Both estimated prevalence rates are less than 2% of the total pediatric cohort of children in BC. Note these estimates are likely higher as they do not include: women who use substances and do not know they are pregnant; women who do not admit to drinking while pregnant; and those who are not part of the samples such as women

¹¹⁰ Thanh NX, & Jonsson E. Drinking alcohol during pregnancy: Evidence from Canadian Community Health Survey 2007/2008. *J Popul Ther Clin Pharmacol*. 2010; 17(2): e302-e307.

¹¹¹ Masotti P, Szala-Meneok K, Selby P, Ranford J, & Van Koughnett, A. Urban FASD interventions: Bridging the cultural gap between Aboriginal women and primary care physicians. *Journal of FAS International*. 2003: e7: 1.

¹¹² Canadian Mothers Maternity Survey. See <http://www.phac-aspc.gc.ca/rhs-ssg/survey-enquete/mes-eem-1-eng.php>. Accessed March 17, 2011.

who are homeless, persons living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions.

The **Significance** of the potential indicator ‘prenatal exposure to substance abuse’ as indicated by the evidence of impact on an individual’s health and well-being is assessed as **High**. Prenatal exposure to alcohol and cocaine can have devastating effects on children. Fetal Alcohol Spectrum Disorder is associated with neurodevelopmental disabilities, physical and cognitive disabilities, learning disabilities, behavioral problems, and speech, language, and hearing problems. Prenatal exposure to cocaine is associated with higher levels of externalizing behaviors such as aggression and destruction, lower IQ and verbal reasoning, cognitive problems and speech and language difficulties. Boys tend to do worse than girls and a dose response effect is noted with worse outcomes related to greater exposure.

The **Modifiability** of the potential indicator is assessed as **Medium**. The rating of medium was given due to the large number of risk factors associated with prenatal substance abuse, the many different types of interventions available, and the varying degrees of efficacy associated with these interventions. According to The Public Health Agency of Canada’s recent update on *Alcohol Use and Pregnancy: An Important Canadian Health and Social Issue*,¹¹³ effective interventions are influenced by the following risk factors associated with women who use substances while pregnant.

Summary of Co-existing Conditions Experienced by Pregnant Women Who Use Alcohol	
sole parenting	violence, abuse, sexual exploitation, trauma
child(ren) in custody/changes in custody	involvement in the criminal justice system
low income/social economic status/poverty	low social support
limited access to prenatal/postnatal care services	previous birth of a child with prenatal and exposure to alcohol and/or other substances
feeling/experiencing loss of control	low education and literacy levels

¹¹³ Public Health Agency of Canada. *Alcohol Use and Pregnancy: An Important Canadian Health and Social Issue*. 2005. See http://www.phac-aspc.gc.ca/publicat/fasd-ru-ectaf-pr-06/pdf/fasd-ru-ectaf-pr-06_e.pdf. Accessed March 17, 2011.

menial, low-paying employment problems	concurrent physical and mental health
cognitive impairments, possibly due to FASD	co-existing use of other substances
unplanned pregnancy/pregnancies low self-esteem	shame
historical and cultural factors pregnancy	depression and other mental health issue(s)
older in age	heavy consumption of alcohol prior to inadequate nutrition
mother's own prenatal exposure to alcohol, tobacco or other drugs	alcohol, tobacco or other drug exposure at young age
poor early childhood environment of the women (stress, abuse, neglect)	paternal/partner alcohol and drug use during the pregnancy
physical, mental, social and spiritual imbalance	unstable housing and living conditions

Source: Risk Factors- Public Health Agency- see <http://www.phac-aspc.gc.ca/publicat/fasd-ru-ectaf-pr-06/5-eng.php>

Current interventions for addressing substance abuse while pregnant include universal, selective, and targeted methods. Universal campaigns such as public awareness measures (media campaigns, mandated warning labels, billboards, pamphlets in physicians' offices, and public service announcements) and providing information in schools and the community, are typically not scientifically evaluated or show modest benefits in terms of knowledge gains among the general public; where behaviour change seems confined to low-risk women.¹¹²

Selective prevention approaches target women of reproductive age who drink alcohol or use drugs. These approaches involve screening all pregnant women for substance abuse consumption and counseling those women who partake. Most of the research and literature related to substance abuse focuses on alcohol consumption during pregnancy. Recently released evidence-based recommendations from the Agency for Healthcare Research Quality¹¹⁴ cited screening and brief interventions as the standard of care for intervening in alcohol abuse problems in pregnant women. It is recommended that clinical advice and counseling should include feedback regarding the risk posed, discussion of readiness to change, and assistance provided to women in developing

¹¹⁴ Agency for Healthcare Research Quality. See <http://www.ahrq.gov/clinic/pocketgd1011/pocketgd1011.pdf>. Accessed March 17, 2011.

strategies and goals for reducing hazardous use. Floyd et al (2009) reviewed screening and brief intervention programs related to FASD and concluded their usefulness in reducing alcohol consumption during pregnancy.¹¹⁵

Indicated prevention approaches target high-risk women (e.g., women who have previously abused alcohol or drugs, have had a child with FAS, etc.) and typically offer repeat counseling or support over several years. This level of prevention includes substance abuse treatment for pregnant women or women who are likely to become pregnant as well as measures to encourage the prevention of pregnancy. The Substance Abuse Mental Health Services Administration (SAMHSA National Registry of Evidence-Based Programs and Practices, NREPP, <http://www.nrepp.samhsa.gov>) provides descriptions of and rates evidence for various interventions related to substance use and abuse and mental health problems. One example of a program supported by SAMHA for the prevention of prenatal substance abuse is the *Parent-Child Assistance Program*. It uses an intensive paraprofessional home visitation model to reduce risk behaviors in women with substance abuse problems over a three-year period. Using a case management approach (one case worker serves 15 women), the program has been shown to be effective for reducing alcohol and drug use as well as other risk behaviors. However, a recent meta-analysis of home visiting programs for pregnant women with alcohol or drug abuse issues concluded that there is insufficient evidence to recommend the routine use of home visits for women with a drug or alcohol problem and that large, high-quality research trials are needed.¹¹⁶

Multifaceted treatment programs are now recommended for high-risk women. The Public Health Agency of Canada¹¹² recommends providing comprehensive and practical care.

Of the various services needed by women who consume alcohol while pregnant, treatment for substance use problems is often seen as having the most formidable barriers, so formal addiction treatment programs often engage women through other avenues. This has the effect of reducing related harms to the mother and unborn child while increasing the likelihood that formal substance abuse treatment will be considered. Noting this, programs strive to combine alcohol and drug treatment with other services, such as prenatal care, other medical care, parenting education, transportation to appointments, family-planning services, assistance to access child care, nutritional support, advocacy on housing needs, and counseling on violence and relationship issues.

¹¹⁵ Floyd RL, Weber MK, Denny C, & O'Connor MJ. Prevention of fetal alcohol spectrum disorders. *Developmental Disabilities Research Reviews*. 2009; 15: 193-199.

¹¹⁶ Doggett C, Burrett S, Osborn DA. Home visits during pregnancy and after birth for women with an alcohol or drug problem. *Cochrane Database of Systematic Reviews*. 2005: Art. No.: CD004456.

Data Availability/Reliability for the potential indicator ‘prenatal substance abuse’ is assessed as **High**. Multiple data sources are available on maternal self-report of prenatal exposure to substance abuse including: *The Canadian Addictions Survey*, *The Canadian Community Health Survey*, *The National Longitudinal Survey of Children and Youth* and most recently, *The Maternity Experiences Survey* (MES). The latter survey was developed by The Canadian Perinatal Surveillance System (CPSS), as part of the Public Health Agency of Canada, to identify Canadian women’s experiences, perceptions, knowledge and practices before conception and during pregnancy, birth and the early months of parenthood. MES is a national survey and includes data from those thought to be at risk for adverse pregnancy outcomes, such as younger mothers (15–19 years), recent immigrant mothers, and First Nations, Inuit and Métis mothers. For the first administration of the MES, the population consisted of birth mothers 15 years of age and older that had a singleton live birth in Canada during a three-month period preceding the 2006 Canadian Census of Population and who lived with their infant at the time of data collection. Using the 2006 Canadian Census, a stratified random sample of 8,244 women estimated to be eligible was identified. Of these women, 6,421 (78%) completed a 45-minute interview at five to 14 months after the birth of their baby, conducted primarily by telephone. The MES includes more than 300 questions covering such topics as socio-economic and demographic information; reproductive history; folic acid use; prenatal care; smoking, alcohol and street drug use; stress and support; physical and sexual abuse; information received about pregnancy, birth and postpartum issues; interventions during pregnancy, labour and delivery; postpartum health and care; postpartum depression; and infant feeding. At this stage, further work is needed to ensure cross cultural validity of the MES.¹¹⁷

For administrative data, The BC Perinatal Database Registry (BCPDR) under the umbrella of the British Columbia Perinatal Health Program is a comprehensive, province-wide perinatal database collected for the purpose of evaluating perinatal outcomes, care processes, and resources. The registry collects, summarizes, interprets, and reports on perinatal events, outcomes and care processes at a hospital, regional and provincial level. The scope of the database includes the collection of standardized antenatal, intrapartum, postpartum and newborn data on all deliveries and births in British Columbia.

¹¹⁷ *Mothers Experiences Survey, Technical Report*. See <http://www.phac-aspc.gc.ca/rhs-ssg/pdf/survey-eng.pdf>. Accessed March 18, 2011.

Based on the summary assessment of the 'Prenatal Substance Abuse' concept, it is recommended that the indicator **percentage of women engaged in prenatal substance abuse** be considered a **Core indicator** of child health and well-being in British Columbia. Core indicator status was determined based on the extremely deleterious effects of prenatal substance abuse on children's immediate and future health and well-being. It is recommended that this indicator be populated from data from *The Maternity Experiences Survey* and The BC Perinatal Database Registry. By including information on the number of children born with neurodevelopmental delays and disabilities (BCPDR) and the circumstances, contexts and influences associated with maternal risky behaviors (MES), a clearer picture will emerge for the development of interventions and health policy necessary to address this serious health and social issue.

POSTNATAL PARENTAL SUBSTANCE ABUSE

The pediatric population **Magnitude** of the potential indicator 'postnatal parental substance abuse' is assessed as **High** for alcohol and **Medium** for illicit drugs. The first rating is based on a pediatric population of 0-19 yrs or 970,048 BC children of which 30% of the adult male population indicated that they exceeded the low-risk guidelines for alcohol consumption according to the *Canadian Addictions Survey (2005)* for an estimate prevalence rate of 291,014 BC children. According to the Canadian guidelines for low-risk drinking, weekly alcohol intake should not exceed 14 standard drinks for males and 9 drinks for females, and daily consumption should not exceed 2 drinks, among males or females. From the same survey, 3% of the population reported using at least one of 5 illicit drugs (cocaine or crack, hallucinogens, PCP or LSD, speed or amphetamines, heroin, ecstasy), suggesting that 29,101 BC children may be potentially impacted by a parent using illicit drugs. As before, this estimate is likely low in that the survey is based on self-report of a sensitive subject and does not include those who are not part of the sample such as the homeless, those without a telephone, persons living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions.

The **Significance/Impact** of the potential indicator is assessed as **Medium**. Due to the multiple risk factors associated with parental substance abuse identified above and the current knowledge of the research evidence on the effects of postnatal parental substance abuse, it is unclear whether the potential indicator, in itself, has a direct and serious impact on child health and well-being. This review of the research has

indicated mixed results of postnatal parental substance exposure in relation to a significant impact on child health and well-being.¹¹⁸ However, this review supports other research that has shown a relationship between parental alcohol abuse and their children's young adult substance abuse/dependency. Evidence from this review also indicated the effect of parental alcoholism on young adult depression and maternal alcoholism on young adult anxiety.

Previous research in the 1990s suggests that parents with documented substance abuse were significantly more likely than nonsubstance-abusing parents to have been referred previously to child protective agencies, to be rated by court investigators as presenting high risk to their children, to reject court-ordered services, and to have their children permanently removed.¹¹⁹ Famularo, Kinscherff and Fenton (1992) also found that for parents involved in court actions as a result of child maltreatment, 67% were identified as substance abusers. Abuse of alcohol was associated with physical abuse while abuse of cocaine was associated with sexual abuse.¹²⁰

Unfortunately, parental substance abuse appears to be only one of many factors associated with child maltreatment. A population-based cross-sectional retrospective analysis of Finnish women, highlights the multiple risk factors associated with children placed in protective custody. Sarkola, Kahila, Gissler and Halmesmäki (2007) found that out-of-home care was associated with maternal substance abuse after delivery, non-employment, housing, daily smoking during pregnancy, an increasing number of previous births, mother in custody in her childhood, maternal education, previous child in custody, drug in urine during pregnancy, unplanned pregnancy, partner with significant abuse, regular health-care contact for abuse, daily alcohol consumption before and/or during pregnancy, newborn not discharged with mother, neonatal abstinence symptoms (NAS), intensified perinatal surveillance or NICU, and delayed discharge from hospital.¹²¹

¹¹⁸ Johnson JL, Leff M. Children of substance abusers: overview of research findings. *Pediatrics*. 1999 May;103 (5 Pt 2):1085-99.

¹¹⁹ Murphy JM, Jellinek M, Quinn D, Smith G, Poittrast FG, Goshko M. Substance abuse and serious child mistreatment: prevalence, risk, and outcome in a court sample. *Child Abuse Negl*. 1991;15(3):197-211.

¹²⁰ Famularo R, Kinscherff R, Fenton T. Parental substance abuse and the nature of child maltreatment. *Child Abuse Negl*. Jul-Aug 1992; Vol 16(4): 475-483.

The **Modifiability** of the potential indicator is assessed as **Medium**. The rating of medium was given due to the variability of success of substance abuse treatment and the degree of complexity associated with policy initiatives for preventing substance abuse. Much of the research on substance abuse treatment is associated with child maltreatment and whether the child is returned to the home or not by child protection services. Choi and Ryan (2006)¹²² found that a significant number of substance-abusing parents in the child welfare system do not complete substance abuse treatment (88%). Their multivariate models indicate that age, employment status, and legal involvement were significantly associated with the likelihood of completing substance abuse treatment. Heroin users were significantly less likely to complete treatment as compared with alcohol, cocaine, and marijuana users. Osterling and Austin (2008) conducted a structured review of the literature of individual and system-level interventions that are effective for the treatment of substance abuse. They recommended the following program components for substance-abusing women with children: (1) women-centered treatment that involves children, (2) specialized health and mental health services, (3) home visitation services, (4) concrete assistance, (5) short-term targeted interventions, and (6) comprehensive programs that integrate many of these components.¹²³

From a policy perspective, The US Office of National Drug Control Policy has developed evidence-based principles for substance abuse prevention.¹²⁴ These include the following 15 principles and guidelines:

Address Appropriate Risk and Protective Factors for Substance Abuse in a Defined Population

1. Define a population. A population can be defined by age, sex, race, geography (neighbor-hood, town, or region), and institution (school or workplace).
2. Assess levels of risk, protection, and substance abuse for that population. Risk factors increase the risk of substance abuse, and protective factors inhibit substance abuse in the presence of risk. Risk and protective factors can be grouped in domains for research purposes (genetic, biological, social, psychological, contextual, economic, and cultural) and characterized as to their relevance to individuals, the family, peer, school, workplace, and community. Substance abuse

¹²¹ Sarkola T, Kahila H, Gissler M, Halmesmäki E. Risk factors for out-of-home custody child care among families with alcohol and substance abuse problems. *Acta Paediatr.* 2007 Nov; 96(11):1557-9.

¹²² Choi S, Ryan JP. Completing substance abuse treatment in child welfare: The role of co-occurring problems and primary drug of choice. *Child Maltreat.* 2006 Nov;11(4):313-25.

¹²³ Osterling KL, Austin MJ. Substance abuse interventions for parents involved in the child welfare system: Evidence and implications. *Evid Based Soc Work.* 2008;5(1-2):157-89.

¹²⁴ US Office of National Drug Control Policy. See http://www.ncjrs.gov/ondcppubs/publications/prevent/evidence_based_eng.html. Accessed March 28, 2011.

can involve marijuana, cocaine, heroin, inhalants, methamphetamine, alcohol, and tobacco (especially among youth) as well as sequences, substitutions, and combinations of those and other psychoactive substances.

3. Focus on all levels of risk, with special attention to those exposed to high risk and low protection. Prevention programs and policies should focus on all levels of risk, but special attention must be given to the most important risk factors, protective factors, psychoactive substances, individuals, and groups exposed to high risk and low protection in a defined population. Population assessment can help sharpen the focus of prevention.

Use Approaches that Have Been Shown to be Effective

4. Reduce the availability of illicit drugs, and of alcohol and tobacco for the under-aged. Community-wide laws, policies, and programs can reduce the availability and marketing of illicit drugs. They can also reduce the availability and appeal of alcohol and tobacco to the underaged.
5. Strengthen anti-drug-use attitudes and norms. Strengthen environmental support for anti-drug-use attitudes by sharing accurate information about substance abuse, encouraging drug-free activities, and enforcing laws, and policies related to illicit substances.
6. Strengthen life skills and drug refusal techniques. Teach life skills and drug refusal skills, using interactive techniques that focus on critical thinking, communication, and social competency.
7. Reduce risk and enhance protection in families. Strengthen family skills by setting rules, clarifying expectations, monitoring behavior, communicating regularly, providing social support, and modeling positive behaviors.
8. Strengthen social bonding. Strengthen social bonding and caring relationships with people holding strong standards against substance abuse in families, schools, peer groups, mentoring programs, religious and spiritual contexts, and structured recreational activities.
9. Ensure that interventions are appropriate for the populations being addressed. Make sure that prevention interventions, including programs and policies, are acceptable to and appropriate for the needs and motivations of the populations and cultures being addressed.

Intervene Early at Important Stages, Transitions, and in appropriate settings and domains

10. Intervene early and at developmental stages and life transitions that predict later substance abuse. Such developmental stages and life transitions can involve biological, psychological, or social circumstances that can increase the risk of substance abuse. Whether the stages or transitions are expected (such as puberty, adolescence, or graduation from school) or unexpected (for example the sudden death of a loved one), they should be addressed by preventive interventions as soon as possible—even before each stage or transition, whenever feasible.
11. Reinforce interventions over time. Repeated exposure to scientifically accurate and age-appropriate anti-drug-use messages and other interventions—especially in later developmental stages and life transitions that may increase the risk of substance abuse—can ensure that skills, norms, expectations, and behaviors learned earlier are reinforced over time.
12. Intervene in appropriate settings and domains. Intervene in settings and domains that most affect risk and protection for substance abuse, including homes, social services, schools, peer groups, workplaces, recreational settings, religious and spiritual settings, and communities.

Manage Programs Effectively

13. Ensure consistency and coverage of programs and policies. Implementation of prevention programs, policies, and messages for different parts of the community should be consistent, compatible, and appropriate.
14. Train staff and volunteers. To ensure that prevention programs and messages are continually delivered as intended, training should be provided regularly to staff and volunteers.
15. Monitor and evaluate programs. To verify that goals and objectives are being achieved program monitoring and evaluation should be a regular part of program implementation. When goals are not reached, adjustments should be made to increase effectiveness.

Similar to the indicator ‘prenatal substance abuse’, the **Data Availability/Reliability** for the potential indicator ‘postnatal substance abuse’ is assessed as **High**. Multiple data sources are available for maternal self-report of substance abuse including: *The Canadian Addictions Survey*, *The Canadian Community Health Survey*, *The National Longitudinal Survey of Children and Youth* and most recently, *The Maternity Experiences Survey (MES)*.

Based on the summary assessment of the ‘Postnatal Substance Abuse’ concept, it is **NOT** recommended that the indicator be considered for inclusion for assessing and tracking child health and well-being in British Columbia, at this time. Further longitudinal research is needed to clarify the effect of postnatal parental substance abuse on child outcomes. As Johnson and Leff (1999)¹¹⁸ note “Longitudinal studies will allow us to predict when early disorders and behavioral deviations will be transient or when they will be precursors to more severe types of maladaptive behavior. Longitudinal research also will enable us to explain specific childhood outcomes. Differences in outcome could be studied simultaneously to understand whether antecedents discovered for one are specific to it or are general antecedents leading to a broad variety of outcomes” (p. 1085).

NEIGHBORHOOD SAFETY

BACKGROUND AND CONTEXT

The purpose of this review was to find evidence of an association between safe neighborhoods and child health and well-being. Safe neighborhoods include both physical and social elements in relation to child health and development. From a physical perspective, whether there are sidewalks or street lights or places to play all

influence children’s social, emotional and physical development and health.^{125, 126, 127} Neighborhood safety also includes social elements such as the amount of crime¹²⁸ or whether people are willing to intervene to help children in trouble.¹²⁹ Capacity inventories of neighborhoods typically focus on different types of buildings, the availability of recreational areas and green space, evidence of crime, and a general description of the environment such as crowding, noise levels, and street traffic.

KEYWORDS:

Neighborhood safety, neighborhood effects

VOLUME REPORT NEIGHBOURHOOD SAFETY AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
71	17	6	4
Excluded if not related to youth outcomes and neighbourhood safety	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=1; studies=4

¹²⁵ Pivik J. *Bowen Island Child and Youth Well-being Study: Giving our Children a Voice*. 2007: Community report: Bowen Island, BC.

¹²⁶ Molnar, B.E., Gortmaker, S.L., Bull F.C., & Buka, S.L. Unsafe to play? Neighbourhood disorder and lack of safety predict reduced physical activity among urban children and adolescents. *American Journal of Health Promotion*. 2004; 18(5): 378-386.

¹²⁷ Pivik, J., Herrington, S., & Gummerum, M. (in press). Nurturant environments for children’s social, emotional and physical well-being. In *New Approaches to Research in Early Child Development: Rules, Rituals and Realities*. In H. Goelman, J. Pivik, & M. Ghun (Eds.). Critical Cultural Studies in Early Childhood Education. New York: Palgrave Macmillan.

¹²⁸ Sampson R, Raudenbush S, Earls F. Neighbourhoods and violent crime: A multi-level study for collective efficacy. *Science*. 1997; 277: 918-924.

¹²⁹ Aneschensel CS, Sucoff CA. The neighbourhood context and adolescent mental health. *Journal of Health and Social Behavior*. 1996; 37: 293-310.

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR NEIGHBORHOOD SAFETY AND CHILD HEALTH AND WELL-BEING

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
Fowler (2009)	Community violence: a meta-analysis on the effect of exposure and mental health outcomes of children and adolescents.	116 samples from 110 studies (N=39,667 children)	Community violence had its strongest effects on posttraumatic stress disorder (PTSD) and externalizing problems and smallest impact on other internalizing symptoms. Victimization by community violence most predicted symptomatology compared to witnessing or hearing about community violence. Witnessing community violence had a greater effect than hearing about violence on externalizing problems, but both types of exposure had an equal impact on other internalizing problems. PTSD symptoms were equally predicted by victimization, witnessing, or hearing about community violence. Compared to children, adolescents reported a stronger relationship between externalizing behaviors and exposure, whereas children exhibited greater internalizing problems than did adolescents.

SUMMARY OF STUDIES FOR NEIGHBORHOOD SAFETY AND CHILD HEALTH AND WELL-BEING OUTCOMES

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
Nicol (2010)	Examined the associations between neighborhood safety, availability of recreational facilities, and adolescent physical activity	Canada; N=9114 (grades 6-10)	Cross-sectional Health Behavior in School-Aged Children Survey. A composite scale based on questions measuring student perceptions of safety was used to capture individual perceptions of safety. Schools were grouped into quintiles based on the mean of the perceived safety scale, used as a proxy for peer perceptions. The number of parks and recreational facilities within 5 km of schools was abstracted from a geographical	Students' self-reported participation in moderate-to-vigorous physical activity outside of school;	Moderate gradients in physical activity were observed according to individual and group perceptions of safety. Boys and girls with the highest perceptions of safety were 1.31 and 1.45 times more likely to be physically active, respectively, than those with the lowest perceptions. Compared with those who perceived their neighborhood as least safe, elementary students in the group who felt most safe were one and a third times more likely to be physically active. Increased numbers of recreational features were not related to physical activity irrespective of neighborhood safety. Individual and group perceptions of neighborhood safety were modestly associated with adolescents'	

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
			information system.		physical activity.	
Lumeng (2006)	To determine if there is a relationship between parental perception of neighborhood safety and overweight at the age of 7 years	Ten urban and rural US sites; N=768 children	Cross-sectional analysis of the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development	Parents reported demographics and perception of neighborhood safety by standardized questionnaire. Child overweight status was defined as a body mass index greater than or equal to the 95th percentile for age and sex from measured anthropometrics at the age of 7 years. The base model included relationship of the safety reporter to the child, sex, and baseline body mass index z score at the age of 4.5 years. Covariates tested included maternal marital status, education, and depressive symptoms; child race/ethnicity; participation in structured after-school activities; Home Observation for Measurement of the Environment total score; and neighborhood social	Neighborhood safety ratings in the lowest quartile were independently associated with a higher risk of overweight at the age of 7 years compared with safety ratings in the highest quartile (adjusted odds ratio, 4.43; 95% confidence interval, 2.03-9.65). None of the candidate covariates altered the relationship between perception of neighborhood safety and child overweight status.	Perception of the neighborhood as less safe was independently associated with an increased risk of overweight at the age of 7 years. Public health efforts may benefit from policies directed toward improving both actual and perceived neighborhood safety.

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
						cohesiveness.
Parente (2009)	Explore the association between aggression, residential mobility and crime in children	Northeastern USA: N=460; \bar{X} age =6,9 years;	Longitudinal (3 yr); Data collected from teachers at 4 points over 3 years; from parents annually; crime stats for 3 years. Covariants=race/ethnicity, income to needs ratio, neighborhood characteristics, reason for moves. ANOVAs.	Teacher rated aggression (Interpersonal Competence Scale)		Children living in high crime areas (who were more likely to be African American, poor, living in a disadvantaged neighborhood) had higher reports of aggression than those living in average crime areas. Children who frequently moved also had higher aggression levels as reported by teachers. Boys who moved and were living in high crime areas were rated significantly higher on aggression than those who moved but did not live in a high crime area, those who experienced no moves within an average crime area or those who had no moves but lived in a high crime area.
Curtis (2004)	Explored links between child well-being and neighborhood quality	Canada; N=22,831; aged 4-11 years	Prospective longitudinal survey of Canada children; National Longitudinal Survey Children and Youth; Multivariate analyses	Conduct disorder, hyperactivity, emotional disorder and injury not sports related		In neighborhoods identified as 'poor quality for safety and cohesion, there were significant greater child conduct problems, hyperactivity, emotional problems and injuries. In neighborhoods where the mother reported problems with garbage, groups or gangs hanging out, there were also significant associations with worse child outcomes for Conduct disorder, hyperactivity, emotional disorder and injury (not sports related). Moderate gradients in physical activity were observed according to individual and group perceptions of safety. Boys and girls with the highest perceptions of safety were 1.31 and 1.45 times more likely to be physically active, respectively, than those with the lowest perceptions. Compared with those who perceived their neighborhood as least safe, elementary students in the group who felt most safe were one and a third times more likely to be physically active. Increased numbers of recreational features were not related to physical activity irrespective of neighborhood safety. Individual and group perceptions of neighborhood

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
						<p>safety were modestly associated with adolescents' physical activity.</p> <p>Neighborhood safety ratings in the lowest quartile were independently associated with a higher risk of overweight at the age of 7 years compared with safety ratings in the highest quartile (adjusted odds ratio, 4.43; 95% confidence interval, 2.03-9.65). None of the candidate covariates altered the relationship between perception of neighborhood safety and child overweight status.</p> <p>Perception of the neighborhood as less safe was independently associated with an increased risk of overweight at the age of 7 years. Public health efforts may benefit from policies directed toward improving both actual and perceived neighborhood safety.</p>

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Nichol M, Janssen I, Pickett W. Associations between neighborhood safety, availability of recreational facilities, and adolescent physical activity among Canadian youth. *J Phys Act Health*. 2010 Jul;7(4):442-50.

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RESULTS FOR NEIGHBORHOOD SAFETY

Physical health

Lumeng et al (2006) explored the relationship between children's obesity and parental perceptions of neighborhood safety in ten urban neighborhoods. Parents of 768 children completed a neighborhood questionnaire that looked at neighborhood safety and social involvement. Height and weight of the children were determined when they were 4.5 and 7 years old, allowing for a body mass index score calculation. The results showed that parents of children who were overweight in grade one perceived their neighborhoods as significantly less safe than parents of children who were not overweight; controlling for child gender and whether the mother or father completed the safety questionnaire. The diversity of settings and participant socioeconomic status adds ecological validity to the results, although further research is needed to generalize to more ethnically diverse populations.

Nicol et al (2010) looked at perceptions of neighborhood safety from children and examined the association between neighborhood safety, availability of recreational resources and levels of physical activity. Their results indicated a moderate association of perceived neighborhood safety and physical activity. Children with the highest perceptions of safety were 1.31 (boys) and 1.45 (girls) times more likely to be physically active, respectively, than those with the lowest perceptions. Increased numbers of recreational features were not related to physical activity, irrespective of neighborhood safety.

Mental health

Fowler et al (2009) conducted a meta-analysis examining the relationship between child and adolescent exposure to community violence and mental health outcomes. This review differentiated between: being a victim of violence (chased, threatened, beaten up, shot, stabbed, robbed, other assaults), witnessing violence (eye-witness to an event that involves loss of property, threat of physical injury, actual injury or death) or hearing about violence second hand; based on the thinking that greater proximity to violence will result in worse outcomes. Outcome measures included reports of internalizing symptoms (e.g., depression, anxiety), externalizing symptoms (e.g., aggressive behavior, delinquency), and post traumatic stress disorder (PTSD; e.g., flashbacks, hyper vigilance, avoidance). The results indicated that exposure to violence negatively influenced mental health. The strongest effect size was for PTSD at $d = .78$; followed by externalizing symptoms ($d = .63$) and internalizing symptoms ($d = .45$). More recent exposure to violence was significantly associated with internalizing and PTSD, whereas lifetime exposure measures demonstrated significantly stronger effects for externalizing symptoms. Proximity to the violence also played a role, in that victimization predicted greater externalizing problems than witnessing, which predicted greater externalizing problems than hearing about community violence. No connection to proximity was identified for PTSD. With the large to moderate negative effects noted for child mental health when exposed to community violence, it is clear that neighborhood safety is an important indicator for mental health. As the

authors indicated, “examining PTSD and internalizing effect sizes together, it is clear that exposure to community violence is a very important predictor of psychological distress” (p.248).

Behavioral Risks

Parente and Mahoney (2009) explored the association between community violence and residential mobility on aggression in young children. Note that above, Fowler et al (2009) found that externalizing behavior was associated with long-term exposure to community violence. This sample focused solely on low-income young children living in a disadvantaged community; whose residents tend to move often. The authors theorize that both frequent moving and living in a high crime area may be additive risks for aggressive behavior in young children. The results of this three year longitudinal study showed that moving and living in a high crime area is associated with higher aggression in young boys. Specifically, children living in high crime areas (who were more likely to be African American, poor, living in a disadvantaged neighborhood) had higher reports of aggression than those living in average crime areas. Children who frequently moved also had higher aggression levels as reported by teachers. However, boys who moved and were living in high crime areas were rated significantly higher on aggression than those who moved but did not live in a high crime area, those who experienced no moves within an average crime area, or those who had no moves but lived in a high crime area.

Internalizing and Externalizing Problems and Injuries

In an examination between Canadian child outcomes and neighborhood quality using the *National Longitudinal Survey of Children and Youth*, Curtis et al (2004) found that neighborhoods do influence child health and well-being. In those neighborhoods identified as ‘poor quality’ for safety and cohesion, there were significantly greater child conduct problems, hyperactivity, emotional problems, and injuries (not sports related). Further, in neighborhoods where the mother reported problems with garbage, groups or gangs hanging out, there were also significant associations with worse child outcomes for conduct disorder, hyperactivity, emotional disorders, and injury.

DATA SOURCES FOR NEIGHBORHOOD SAFETY

The National Longitudinal Survey of Children and Youth collects information on neighborhood safety. The first wave (Cycle 1) includes a series of interviewer ratings of each respondent's neighbourhood, as well as a large number of questions addressed to the person most knowledgeable to the child (PMK). There are no questions specifically about neighbourhoods in Cycle 2, but the third wave repeats some of the neighbourhood questions that had been asked of the PMK in Cycle 1. Key measures obtained at Cycles 1 and 3 are a single item in which the PMK is asked: *How do you feel about the neighbourhood as a place to bring up children?* (Excellent, Good, Average, Poor, Very Poor) and a five-item scale of Neighbourhood Cohesiveness: *If there is a problem around here the neighbours get together to deal with it; There are adults in the neighbourhood that children can look up to; People*

around here are willing to help their neighbours; You can count on adults in this neighbourhood to watch out that children are safe and don't get in trouble; When I'm away from home, I know that my neighbours will keep their eyes open for possible trouble. Neighbourhood measures that were obtained only in Cycle 1 include the interviewer ratings, a two-item scale of Neighbourhood Safety, and a four-item scale of Neighbourhood Problems. Items in the Neighbourhood Safety scale were: *It is safe to walk alone in this neighbourhood after dark*; and *It is safe for children to play outside during the day*. Items in the Neighbourhood Problems scale were: *How much of a problem is the following in this neighbourhood: Garbage, litter or broken glass, in the street or road, on the sidewalks or in yards?*; *How much of a problem is the following in this neighbourhood: Selling or using drugs?*; *How much of a problem is the following in this neighbourhood: Alcoholics or excessive drinking in public?*; *How much of a problem is the following in this neighbourhood: Groups of young people who cause trouble?* Questions asked of the interviewer (Cycle 1 only) included: *How would you rate the volume of traffic on the street or road?*; *Is there garbage, litter or broken glass in the street or on the sidewalks or in yards?*; *Are people loitering, congregating or hanging out?*; *Are any persons arguing, shouting, fighting or otherwise behaving in hostile or threatening ways?*; *Are drunken or otherwise intoxicated persons visible?*; *Based on street level frontage, how would you judge the land use on this block?*; and, *how would you rate the general condition of most of the buildings on the block or within 100 yards of the respondent's house?* NLSCY formed a Neighbourhood Quality scale as a simple count of the number of unfavourable neighbourhood and housing observations recorded by the interviewer in response to these questions. The maximum possible score is 7 and the minimum score is 0.

DISCUSSION

According to the 2008 Government of British Columbia's report, *Indicators of Early Childhood Health and Well-Being in British Columbia*, in 2004/2005, 27.7% of BC parents indicated that their children lived in a neighbourhood where there is a low degree of safety, compared to the national average of 22.3%. Further, 16.1% of BC parents indicated that their children lived in neighbourhoods defined as having low levels of cohesion, compared to a national average of 13.6%.

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'Neighborhood Safety'.

SUMMARY ASSESSMENT						
Neighborhood Safety						
		Magnitude	Significance / Impact	Modifiability	Data Availability/Validity	
Concept/Indicator	Age Group(Years)	Estimated Prevalence	Proportion of BC child /youth population to which	Association between concept and	Degree the concept/indicator(s) be reasonably changed	Existence and validity of information for the component indicator(s) for

		<i>Among B.C. Children</i>	<i>concept/indicator applies</i>	<i>health/well-being dimension</i>	<i>through public policy or other intervention</i>	<i>each concept</i>
Neighbourhood Safety	6-19	112,495-196,867	High	High	Medium	High

The pediatric population **Magnitude** of the potential indicator is assessed as **High**. This is based on a pediatric population of 6-19 yrs or 703,098 children of which 16.1% of parents who answered the NLSCY indicated that they lived in a neighborhood low in cohesion and 27.7% indicated that they lived in unsafe neighborhoods. The resulting estimated prevalence amongst BC children is 112,495-196,867, which is above 10% of the total pediatric cohort of children in BC.

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual’s health is assessed as **High**. According to this review, there is moderate evidence of parental and children’s perception of neighborhood safety and physical health. Unsafe neighborhoods were associated with reduced physical activity and being overweight. Strong evidence was found for the relationship between exposure to crime and mental health. Exposure to violence was associated with PTSD, externalizing behavior and internalizing symptoms for children and adolescents. Living in a high crime area was associated with higher levels of aggression in boys and made worse with frequent family moves. Results from the NLSCY found greater reports of child conduct disorders, hyperactivity, emotional problems, and injuries in neighborhoods identified as unsafe and with poor cohesion.

The **Modifiability** of the potential indicator is assessed as **Medium**. The rating of medium was given due to the complexity of interventions and policy implications needed to ensure neighborhoods are safe for promoting health and well-being. This entails designing neighborhoods that are safe spaces for children to play and move independently, reducing crime, and promoting collective efficacy (the link between mutual trust and a shared willingness to intervene for the common good of the neighborhood-see Social Capital section above).

The rise in childhood obesity in developed countries has prompted public health agencies to focus on the design of neighborhoods and communities in relation to child health and well-being. Basrur (2004)¹³⁰ reports that more

¹³⁰ Basrur S. *Chief Medical Officer of Health Report: Healthy Weights, Healthy Lives*. 2004. Ontario Ministry of Health and Long-term Care: Toronto, Ontario.

than half of Canada's youth are not active enough for optimal growth and development, in part due to increased screen time, less time interacting with the natural environment or exploring and moving about in their communities. Seven percent of Canadian children under the age of six are now classified as obese, and twenty percent are overweight according to the British Columbia Legislative Committee (2006).¹³¹

In 2009, the Committee on Environmental Health of the American Academy of Pediatrics published a policy statement on the built environment and children's health.¹³² They critique existing environmental conditions for children and recommend design principles that encourage active living. The critique covers the inequitable distribution of parks and recreational facilities in residential neighborhoods, car dependency, dangerous traffic, air pollution, sprawl, "big box" schools on the periphery of towns and cities, a lack of sidewalks and street connectivity in many residential developments, and "food deserts" where fresh healthy foods are unavailable. Recommendations include: neighborhood schools that encourage walking and biking, safe streets, sidewalks, increased density, mixed use development, increased investments in parks and recreational facilities, community gardens, attractive streetscapes, urban design that fosters "eyes on the street," and programs like Safe Routes to School and walking school buses.

In a review of neighborhood safety on children's physical activity levels, Carver, Timperio and Crawford (2008)¹³³ found that the reason parents most often restrict their children's outdoor activity is their fear of 'stranger danger' and road safety. Pedestrian safety interventions introduced in the Netherlands such as speed humps, added vegetation, reduced vehicle speed and restricted parking has shown to lower child pedestrian injury rates¹³⁴ and increase outdoor physical activity.¹³⁵

¹³¹ British Columbia Legislative Committee. Select Standing Committee on Health. *A strategy for combating childhood obesity and physical inactivity in British Columbia*. 2006. See <http://www.leg.bc.ca/cmt/38thparl/session-2/health/reports/Rpt-Health-38-2-29nov2006.pdf>. Accessed March 29, 2011.

¹³² The American Academy of Pediatrics and its members. Committee on Environmental Health. The built environment: Designing communities to promote physical activity in children. *Pediatrics*. 2009; 123(6): 1591-1598.

¹³³ Carver A, Timperio A, Crawford D. Playing it safe: The influence of neighborhood safety on children's physical activity-A review. *Health & Place*. 2008; 14: 217-227.

¹³⁴ Petch R, Henson R. Child road safety in the urban environment. *Journal of Transport Geography*. 2000; 8: 197-211.

¹³⁵ Pucher J, Dijkstra L. Promoting safe walking and cycling to improve public health: Lessons from the Netherlands and Germany. *American Journal of Public Health*. 2003; 93(9): 1509-1516.

The United Kingdom has taken a lead role in focusing on child health and safe communities. Gill (2008)¹³⁶ talks about the *shrinking world of childhood*, where children are driven everywhere, there are less green spaces to play, parents' don't think kids should go out with their friends unsupervised until age 14, kids spend more time in child care/planned activities because of their parents' long work hours and then occupy themselves with greater television viewing or playing electronic games. The ramifications of this life style have resulted higher rates of childhood obesity, a rise in adolescent conduct disorders and a greater inability to cope in new situations.

Gill recommends that society take a *space-oriented approach* to addressing these problems. This includes: a general approach that proactively supports all children (versus targeted at specific groups of children); encourages child engagement in their schools and communities; and supports children's ability to learn through experience. Here are his very practical recommendations:

- A strong emphasis on creating easy access to welcoming, accessible parks, squares and public spaces.
- Encouraging child modes of transportation- walking, cycling, and public transport.
- Greater access to school grounds and child institutions afterschool.
- Strong support for voluntary and community activities that give children more autonomy and responsibility and bring children and adults together.
- A more sympathetic and balanced approach when responding to the inevitable conflicts and minor skirmishes that surround children (directed at the police, teachers, professionals).
- A resilient approach to risk that balances protection and freedom.
- A shared, communal responsibility for children's wellbeing—realizing that we are all responsible for all children.

Other physical aspects of neighborhoods that are important for children's health and well-being were identified by Evans (2006),¹³⁷ "Among the potentially developmentally salient physical characteristics of neighbourhoods are residential instability, housing quality, noise, crowding, toxic exposure, quality of municipal services, retail services (e.g., bars, liquor stores, nutritional foods), recreational opportunities, including natural settings, street traffic, accessibility of transportation, and the physical qualities of both educational and health care facilities" (p. 435).

Community-based preventive interventions can influence neighborhood safety. One example is the *Better Beginnings Better Futures* project in disadvantaged Ontario communities. Widespread increases in ratings of

¹³⁶ Gill T. Space-oriented children's policy: Creating child-friendly communities to improve children's well-being. *Children & Society*. 2008; 22: 136-142.

¹³⁷ Evans G. Child development and the physical environment. *Annual Review Psychology*. 2006; 57: 423-451.

neighborhood quality and safety was found for a community that focused on community development, local leadership, and partnership building with local service providers.¹³⁸

Environmental design has also shown to influence neighborhood safety. The Crime Prevention Through Environmental Design (CPTED) is a public safety strategy that includes design recommendations for housing layout, land use, access control, territoriality, and physical maintenance. Crowe and Zahm (1994)¹³⁹ describe some CPTED strategies:

- Provide a clear border definition of controlled space.
- Provide a clearly marked transition from public to semipublic to private space.
- Locate gathering areas in places with natural surveillance and access control and away from the view of potential offenders.
- Place safe activities in unsafe locations and unsafe activities in safe locations.
- Provide natural barriers to conflicting activities.
- Improve the scheduling of space to provide for effective and critical intensity of uses.
- Design space to increase the perception of natural surveillance.
- Overcome distance and isolation through improved communications and design efficiencies, e.g., emergency telephones, pedestrian paths.

Carter and Carter (2003)¹⁴⁰ showed that a community in Florida that used CPTED principles and increased police patrolling had fewer calls for police services, crimes against persons and property, and prostitution compared to control communities.

Data availability/validity is assessed as **High**. The *National Longitudinal Survey of Children and Youth*, conducted every two years, tracks the progress and development of children from the time they are born through early adulthood. It explores physical development and overall health, learning ability, behavioral tendencies, family and friend structure, as well as the types of schools and communities in which the child is raised. Although all 10

¹³⁸ Peters R, DeV, Arnold R, Petrunka K, Angus D E, Bélanger J-M, Boyce W, Brophy K, et al. *Better Beginnings, Better Futures: A comprehensive, community-based project for early childhood development. Highlights of Lessons Learned*. 2004. Kingston, Ontario: Better Beginnings, Better Futures Research Coordination Unit Technical Report.

¹³⁹ Crowe TD, Zahm DL. Crime prevention through environmental design. *Land Development*. Fall (1994); 22-27.

provinces are represented, children living on Indian reserves, Crown Lands, residents of institutions, children of full-time members of the Canadian Armed Forces, and children who live in certain remote regions are excluded. The 'high' rating is given due to the consistency, breadth, and reliability of this survey conducted by Statistics Canada.

Based on the summary assessment of the 'Neighborhood Safety' concept, it is recommended that the indicator **percentage of children living in unsafe neighborhoods** be considered a **Core indicator** of child health and well-being in British Columbia, with data populated from the *National Longitudinal Survey of Children and Youth*. As the research indicates, unsafe neighborhoods can have severe detrimental effects on children's mental health such as PTSD, and externalizing and internalizing symptomology. As well, unsafe neighborhoods are associated with decreased physical activity and engagement and thus a risk factor for childhood obesity and optimal physical, emotional, and social development.¹⁴¹

¹⁴⁰ Carter SP, Carter SL. Zoning out crime and improving community health in Sarasota Florida: Crime Prevention Through Environmental Design. *Am J Public Health*. 2003 September; 93(9): 1442–1445.

¹⁴¹ Pivik J, Herrington S, Gummerum M. (in press). Nurturant environments for children's social, emotional and physical well-being. In *New Approaches to Research in Early Child Development: Rules, Rituals and Realities*. In H. Goelman, J. Pivik, & M. Ghun (Eds.). Critical Cultural Studies in Early Childhood Education. New York: Palgrave Macmillan.

YOUTH JUSTICE THEME

The youth justice theme includes two concepts: (1) youth who receive alternate sentencing; and, (2) youth charged and convicted. In Canada, the criminal code defines youth as being between the ages of 12 and 17 years.

YOUTH WHO RECEIVE ALTERNATE SENTENCING

BACKGROUND AND CONTEXT

In 2003, the *Youth Criminal Justice Act* (YCJA) was implemented, with the following objectives: to improve decision-making in the youth justice system through the application of clear and coherent principles; to make more appropriate use of the courts; to achieve fairness in sentencing and reduce the use of custody so that the most serious interventions are reserved for the most serious crimes; to make clear distinctions between serious violent offences and less serious offences; and to effectively reintegrate youth into the community.

The umbrella term for youth who receive alternative treatment is restorative justice. Restorative justice programs include victim-offender mediation, family group conferencing, community reparative boards, and circle sentencing. The aim of restorative justice is the restoration of victims, offenders and the wider community; bringing together those most affected by the criminal incident in a non-adversarial process to promote offender accountability and to repair harms resulting from the crime.

The Ministry of Public Safety and Solicitor General of British Columbia ¹⁴² describes restorative justice as the following:

Crime is not only a violation of the law but a violation of people and relationships and a disruption of the peace in a community. We have a criminal justice system to deal with those who violate the law but restorative justice processes focus on addressing the needs of victims and the community with a strong emphasis on offender accountability and repairing the harm. The results can bring victims, offenders and the community a more satisfying experience of justice. Most offenders that participate in a restorative justice process follow through with their agreement which may include restitution or community service, and often demonstrate a reduction in further offending.

In a typical restorative justice process, everyone affected by a particular offence is invited to participate in a discussion of the circumstances surrounding the offence. Often this means that victims and their supporters, and

offenders and their supporters, are guided by a restorative justice facilitator (or in some cases an elder) using a structured dialogue format. This dialogue allows participants to share how the offence happened, how they were affected, and what needs to happen to make things right. The number of people involved will vary depending on the type of offence and the comfort-level of participants.

Restorative justice has been popular for 40 years and although initially used for minor delinquency cases, it is increasingly being used for more serious delinquency and adult criminal violations (Bergseth and Bouffard, 2007).¹⁴³ The recent research in this area associated with child and youth outcomes focuses on the effectiveness of restorative justice for youth in terms of completion, recidivism, satisfaction with the process and the long term impact for juvenile offenders.

KEYWORD SEARCH

Detention, incarcerated, juvenile justice, alternative justice, restorative justice.

VOLUME REPORT FOR ALTERNATIVE SENTENCING AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
44	8	5	3
Excluded if not related to youth outcomes and Alternative Sentencing	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=1; studies=2

¹⁴² The Ministry of Public Safety and Solicitor General of British Columbia. see <http://www.pssg.gov.bc.ca/crimeprevention/justice/index.htm>. Accessed March 30, 2011.

¹⁴³ Bergseth KJ, Bouffard JA. The long term impact of restorative justice programming for juvenile offenders. *Journal of Criminal Justice*. 2007; 35: 433-451.

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR YOUTH WHO RECEIVE ALTERNATE SENTENCING AND CHILD HEALTH AND WELL-BEING

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
Latimer (2005)	The effectiveness of restorative justice practices: a meta-analysis	22 studies from 35 programs	Compared to traditional justice, restorative justice programs had significantly better victim and offender satisfaction, better restitution compliance and lower recidivism rates.

SUMMARY OF STUDIES OR YOUTH WHO RECEIVE ALTERNATE SENTENCING AND CHILD HEALTH AND WELL-BEING

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
Beus (2007)	Restorative justice practice: an examination of program completion and recidivism Examined the interactive effects of offence type, poverty level and program type.	Arizona, US; N=9,255; \bar{X} age = 15 years)	Quasi-experimental; Logistic regression	Program completion, recidivism	Overall, no differences between groups were noted for program completion; however status offenders (running away, truancy, incorrigibility) in the restorative justice program (RJP) were more likely to complete the program than those in the comparison group. Those individuals living in poorer neighborhoods were also more likely to not complete the program. Status and property offenders in the RJP were less likely to recidivate than similar offenders in the comparison program. Poverty also influenced recidivism where juveniles in the RJP who lived in communities with low levels of poverty had the lowest rate of recidivism.	
Bergseth (2007)	The long term impact of restorative justice programming for	Midwestern county, USA; RJ=164 youth;	Quasi-experimental; Four year longitudinal Matched on referral	Prevalence of re-offence, number of later official contacts,	Juveniles in the restorative justice program fared better than those in traditional juvenile justice on all outcomes, i.e., prevalence of re-offence, number of later official contacts by police and seriousness of later offending behavior, even after controlling for the number of	

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
	juvenile offenders	comparison from traditional=166; <u>X</u> age =14.7 years	offence type, and level (misdemeanor, felony); Multivariate's to control for individual demographics and offending history.	seriousness of later offending behavior	prior offences and more serious current behavior. After 3 years, those youth with a restorative justice referral had better outcomes even controlling for age at referral, race, gender, urban residence, number of prior official contacts and serious of current offence.	

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Latimer J, Dowden C, Muise D. The effectiveness of restorative justice practices: A meta-analysis. *The Prison Journal*. 2005 Jun 1;85(2):127-44.

RESULTS FOR YOUTH WHO RECEIVE ALTERNATIVE SENTENCING

Latimer et al (2005) conducted a meta-analysis of the effectiveness of restorative justice; focusing on victim and offender satisfaction, restitution compliance and recidivism reduction. The effect size for victim satisfaction was .19; which was significantly higher for those receiving restorative justice than the traditional justice program $t(12) = 3.89, p < .01$. For offender satisfaction, there was a significant but moderate-to-weak positive impact for restorative justice compared to controls, $t(11) = 4.52, p < .01$. Regarding restitution compliance, a high effect size of .33 was found. Compared to comparison/control groups, offenders in the restorative justice were significantly more likely to complete restitution agreements, $t(7) = 3.87, p < .01$. Positive results were also found for restorative justice regarding recidivism reduction, $t(31) = 2.88, p < .01$, compared to comparison/control groups.

Beus and Rodriguez (2007) examined the effectiveness of restorative justice programs in relation to the type of offence and community poverty levels. They found in their quasi-experimental study of 9,255 youth that poverty and type of offence did indeed interact with program type to influence whether youth would complete the program or commit another offence. Status offenders (running away, truancy, incorrigibility) in the restorative justice program (RJP) were more likely to complete the program than those in the comparison group. Those individuals living in poorer neighborhoods were less likely to complete the program. Status and property offenders in the RJP were less likely to recidivate than similar offenders in the comparison program. Poverty also influenced recidivism where juveniles in the RJP who lived in communities with low levels of poverty had the lowest rate of recidivism.

Restorative justice was also shown to be effective over time as found by Bergseth and Bouffard (2007). Three to four years later, juveniles who were referred for a restorative justice program fared better than those in the traditional juvenile justice system on the prevalence of re-offence, the number of later official contacts by police and the seriousness of later offending behavior, even after controlling for the number of prior offences and serious current behavior. Those youth with a restorative justice referral had better outcomes even controlling for age at referral, race, gender, urban residence, number of prior official contacts and, seriousness of current offence.

DATA SOURCES FOR YOUTH WHO RECEIVE ALTERNATIVE SENTENCING

Data on youth in custody is available from the British Columbia Ministry of Children and Family Development. No information was found on the number of cases which used restorative justice formats.

DISCUSSION

Due to the lack of publically available data on restorative justice cases conducted in BC, statistics for youth charged, in remand and convicted is used as a proxy.

According to a 2010 *Infoline*,¹⁴⁴

The number of BC youth sentenced to secure and open custody dropped 12.4% (to 325) over 2007/08. The sentenced custody rate (number in custody per 10,000 youth) fell from 11 to 10 during the same period. Among the provinces, BC had the lowest custody rates in the country, followed closely by Ontario (12), while the ratio was highest in Saskatchewan (46). The national average for the jurisdictions reporting youth custody statistics was 16. The probation rate for BC youth (44) was also below the national average (68). The incarceration rate (number of youth in custody on an average day in relation to the number in the population) in BC was also the lowest in the country (tied with Quebec), at 4 young offenders for every 10,000 youth. Violations against the person, including offenses such as sexual assault, robbery, and kidnapping, accounted for over a quarter (27%) of sentenced admissions to secure and open custody in BC during 2008/09. A further 19% were property offences while the remainder was comprised of other criminal code offences such as mischief, failure to appear, disorderly conduct and drug-related violations. Nationally, on any given day in 2008/2009, there were 15 male youth incarcerated for every 10,000 in the general population. This is seven times higher than the incarceration rate of female youth (2 for every 10,000) (Issue 10-17, p.2). In 2008/2009, Aboriginal youth accounted for 45% of young people admitted to remand in BC, 44% of those admitted to sentenced custody, and 34% of youth admitted to probation. These rates are particularly significant, since according to the 2006 Census, just eight percent of all youth 12 to 17 years old in the province self-identified as Aboriginal. The Aboriginal population is younger than the non-Aboriginal population, and being young has been identified as one of the strongest risk factors for delinquent or criminal behaviour. Almost half (48%) of the Aboriginal population consists of children and youth aged 24 or younger, compared to 31% of the non-Aboriginal population. *Data Source: Statistics Canada Cat. # 85-002-XIE*

CONCLUSION

The following table presents the summary assessment of the magnitude, significance, modifiability, and data availability/validity for the potential indicator 'Youth who Receive Alternative Sentencing'.

¹⁴⁴ Infoline. Issue 10-17, April 30, 2010: BC Stats. See <http://www.bcstats.gov.bc.ca/releases/info2010/In1017.pdf>. Accessed March 30, 2011.

SUMMARY ASSESSMENT						
Youth who Receive Alternative Sentencing						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Youth Who Receive Alternative Sentencing	12-17	Less than 14,687	Low	Medium	Medium	Low

The pediatric population **Magnitude** of the potential indicator is assessed as **Low**. Of the estimated 312,499 youth aged 12-17 years in BC as of 2010 according to Statistic Canada, 47 per 1,000 were charged or 14,687. The estimated number of youth who received alternate sentencing is unknown, however the number charged is less than 2% of the total pediatric cohort of BC.

The **Significance** of the potential indicator as indicated by the evidence of impact on an individual’s health and well-being is assessed as **Medium**. Although restorative justice programs (RJP) are typically used for younger offenders and less serious crime, the evidence indicates that it is more effective than the traditional justice system for both youth offenders and their victims. Restorative justice was associated with significantly higher victim satisfaction, offender satisfaction, restitution compliance, and recidivism reduction rates. RJP was also more effective than the traditional system for program completion for status offenders (running away, truancy) and recidivism occurrences for status and property offenders. Juveniles in the RJP who lived in communities with low levels of poverty had the lowest rates of recidivism. Finally, compared to the traditional justice system, youth in the RJP were less likely to re-offend, had fewer police contacts and less serious later offences four years after their exposure to the program.

The **Modifiability** of the potential indicator is assessed as **Medium**. According to the BC Ministry of Public Safety and Solicitor General,¹⁴⁵ restorative justice contributes to crime prevention in the following ways:

- Produces reasonable agreements that include victims' and offenders' input and consent
- Provides community supports and opportunities for reintegration
- Cultivates empathy and understanding
- Makes space for hearing and acknowledging other perspectives and painful experiences
- Creates a sense of hopefulness and the ability to "move forward"
- Equips participants with enhanced communication skills and models

However, in British Columbia, as this document indicates, restorative justice is typically used for low-risk, first-time youth offenders, less serious crimes and is dependent on agreement of the victim (s) and offender. The rating of medium was given because it is not universal (does not address the 27% of violent crime committed by youth in BC). Further, the program's success is mediated by community poverty levels as noted by Beus and Rodriguez (2007).

Data Availability/Reliability for the potential indicator is assessed as **Low**. It may be that data is collected routinely through the Justice Services, BC Ministry of Children and Family Development, but since that data is neither reported regularly or publically available, it is impossible to confirm availability or validity.

Based on this assessment of youth who receive alternative sentencing, it is **NOT** recommended for consideration as an indicator of child health and well-being in BC. The evidence does suggest youth who have experienced the RJP are less likely to re-offend, have fewer police contacts and less serious later offences four years after their exposure to the program. However, due to the low-medium ratings for magnitude, significance, modifiability, and data availability/validity, inclusion as an indicator for child health and well-being is not warranted.

¹⁴⁵ BC Ministry of Public Safety and Solicitor General. *Restorative Justice. Crime Prevention Information Series 3*. See <http://www.pssg.gov.bc.ca/crimeprevention/publications/docs/crime-prev-series3-restorative-justice.pdf>. Accessed March 31, 2011.

YOUTH CHARGED AND CONVICTED

BACKGROUND AND CONTEXT

The purpose of this review was to find evidence of an association between youth charged and convicted in the criminal justice system and child and youth health and well-being outcomes. The current state of health and well-being of youth charged and convicted is naturally influenced by previous antecedents. The McCreary Centre Society surveyed 137 youth in custody in 2003 and found that:

Many of the young people surveyed have survived physical or sexual abuse, and grew up in families where suicide, addiction, and criminal activities were common. The majority have lived in government care at some time. Most have ongoing physical and mental health problems, and began using drugs and alcohol at an early age. Many of these young people are lonely and disconnected from their families and communities. Some have felt angry or hopeless enough to think about, or try, taking their own lives. Most of these youth have committed violent offences, and been incarcerated more than once (p.5).¹⁴⁶

In the past decade, the research on youth offenders and health and well-being has focused on mental health. No recent studies or systematic reviews were found for the past decade regarding the physical health of youth in detention; however a literature review was conducted which summarized research associated with the 1990s. This review is summarized as well as research looking at mental health overall, post-traumatic stress disorder and the number of deaths of youth in custody. No scientific research according to the parameters of this systematic review process was found for the health and well-being outcomes of youth charged but not convicted.

KEYWORDS

Detention, incarcerated, juvenile, at-risk, crime, juvenile justice, jail, imprisoned, correction

¹⁴⁶ Murphy, A., Chittenden, M., & The McCreary Centre Society (2005). *Time Out II: A Profile of BC Youth in Custody*. Vancouver, BC. The McCreary Centre Society.

VOLUME REPORT FOR YOUTH CHARGED AND CONVICTED AND CHILD HEALTH AND WELL-BEING

Preliminary Exclusion	Primary Exclusion	Secondary Exclusion	Final Result
26	6	4	3
Excluded if not related to youth outcomes and youth charged and convicted	Removed reviews or studies not associated with topic	Removed studies of lesser quality or usefulness	Systematic review=1; studies=2

DETAILED RESULTS

SYSTEMATIC REVIEWS AND META-ANALYSES FOR YOUTH CHARGED AND CONVICTED AND CHILD HEALTH AND WELL-BEING

Author (s)	Review Title	Number of Studies Reviewed	Conclusions/Comments
Fazel (2008)	Mental disorders among adolescents in juvenile detention and correctional facilities a systematic review and metaregression analysis of 25 surveys	25 surveys	For males, 53% exhibited symptoms of conduct disorder, 11% had major depression, 12% had ADHD and 3% exhibited symptoms of a psychotic illness. For females, 53 % also presented with conduct disorders, 30% had major depression, 19% had ADHD and 3 % had been diagnosed with psychotic illness.

SUMMARY OF STUDIES FOR YOUTH CHARGED AND CONVICTED AND CHILD HEALTH AND WELL-BEING

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
Mental health						
Abram (2004)	To determine prevalence estimates of exposure to trauma and 12-month rates of	Illinois, USA; N=898 from a temporary detention centre (532	Longitudinal Randomly	Diagnostic Interview Schedule for	Most participants (92.5%) had experienced 1 or more traumas (mean, 14.6 incidents; median, 6 incidents). Significantly more males (93.2%) than females (84.0%) reported at least 1 traumatic	

Citation	Study Description	Setting/ Participants	Design/Data Collection	Outcomes	Results	Conclusion/Comment
	posttraumatic stress disorder (PTSD) among juvenile detainees by demographic subgroups (sex, race/ethnicity, and age).	males, 366 females, aged 10-18 years) arrested and newly detained.	selected, stratified sample	Children, version IV.	experience; 11.2% of the sample met criteria for PTSD in the past year. More than half of the participants with PTSD reported witnessing violence as the precipitating trauma.	Trauma and PTSD seem to be more prevalent among juvenile detainees than in community samples.
Gallagher (2006)	Deaths in juvenile justice residential facilities	USA, national Office for Juvenile Justice and Delinquency Prevention	Juvenile Residential Facilities Census; Multivariate modelling	Information on # of deaths, reason	From 2000-2002, there were 62 deaths that occurred within juvenile facilities. Leading cause of death was suicide (n=20), homicide (n=6), accident (n=17), illness (n=14) or other (n=5). In custody, the rate of suicide is 21.9 per 100,000 per year, nearly three times the rate in the general population. The death rate for illness is 50% greater for youth in correctional facilities than in the general population.	

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Fazel S, Doll H, Långström N. Mental disorders among adolescents in juvenile detention and correctional facilities: a systematic review and metaregression analysis of 25 Surveys. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2008 Sep; 47(9):1010-9.

RESULTS FOR YOUTH CHARGED AND CONVICTED

Mental Health

Fazel et al (2008) conducted a systematic review and meta-analysis that explored the prevalence of mental disorders in adolescents in juvenile detention and correctional facilities. They looked at the following mental disorders: psychotic illness, major depression, attention-deficit/hyperactivity disorder [ADHD], and conduct disorders. The sample consisted of children between the ages of 10-19 years (N= 13,778: boys; 2,972 girls). For males, 53% exhibited symptoms of conduct disorder, 11% had major depression, 12% had ADHD, and 3% exhibited symptoms of a psychotic illness. For females, 53% also presented with conduct disorders, 30% had major depression, 19% had ADHD, and 3 % had been diagnosed with psychotic illness. The authors indicated that youth in detention and correctional facilities were about 10 times more likely to suffer from psychosis than the general adolescent population.

Abram et al (2006) found that youth in detention had higher rates of post-traumatic stress disorder than the general population. From a sample of 898 youth detained in Illinois, 92% had experienced at least one traumatic event; with a mean number of traumas identified at 15. The three most frequently reported traumas were: (1) having seen or heard someone get hurt very badly or killed (75% males, 64% females); (2) having been threatened by a weapon (59% males, 47% females); and, (3) being in a situation where you thought you or someone close to you would die (53% males, 49% females). Just over 11 % of the sample met the diagnostic criteria for having PTSD, with no differences noted between gender or race. This rate is higher than reported in the general population (3.5-9%).

Physical health

No recent studies or systematic reviews have been conducted in the past decade regarding the physical health of youth in detention. However, Golzari et al (2006)¹⁴⁷ provide a literature review of the health status of youth in juvenile facilities which includes a section on physical health. From surveys conducted in the 1990s, the most

common physical ailments included: substance abuse (55.3%), psychiatric illness (19%), high-risk sexual behaviors (49.4%), infectious diseases from intravenous drug use or high risk sexual behavior (12.1%), and dental problems (39.2%) (cf. see Olivan, 2001¹⁴⁸).

Gallagher and Dobrin (2006) tracked the number and types of deaths reported across juvenile detention centres across the United States. From 2000-2002, there were 62 deaths that occurred within juvenile facilities. The leading cause of death was suicide (n=20), homicide (n=6), accident (n=17), illness (n=14) or other (n=5). The authors conclude that in custody, the rate of suicide is 21.9 per 100,000 per year; nearly three times the rate in the general population. As well, the death rate for illness is 50% greater for youth in correctional facilities than in the general population.

DATA SOURCES FOR YOUTH CHARGED AND CONVICTED

The primary source of data for youth charged and convicted is the Justice Services, BC Ministry of Children and Family Development. This ministry is the exclusive holder of data related to the province's child welfare system. The ministry indicates that they "gather statistics, analyze them and produce reports on service trends and outcomes associated with services provided to children and families. This information is gathered from the ministry's electronic information system and is updated regularly". However, according to their web page,¹⁴⁹ the only publically available statistics is the number of children who died in custody.

Information about the number of youth charged with a criminal offence was found in a report by the Police Services Division, Public Safety and Regulatory Branch, Ministry of Attorney General.¹⁵⁰ Their data indicates that in 1997, 20% of crime in BC was committed by young offenders (aged 12-17). This percentage relates to 47 charges per 1,000 youth. The report indicates that the majority of crime is committed by male offenders between 17-24

¹⁴⁷ Golzari M, Hunt SJ, Anoshiravani A. The health status of youth in juvenile detention centres. *Journal of Adolescent Health*. 2006; 38: 776-782.

¹⁴⁸ Olivan G. The health profile of Spanish incarcerated delinquent youths. *J Adolesc Health*. 2001; 29(6):384.

¹⁴⁹ Ministry of Family and Development. See http://www.mcf.gov.bc.ca/reports_publications.htm. Accessed Feb. 8, 2011.

¹⁵⁰ BC Crime Trends, Nov. 1998, Issue #2. See

http://www.pssg.gov.bc.ca/police_services/publications/other_stats/ythcrime.pdf.

years, although the total number is not reported. As the definition of child for this review includes ages 0-19, this breakdown and informational source is problematic.

The incarceration rate is the average daily counts of remand, secure and open custody per 10,000 youth aged 12 to 17 in the population. According to a report by Statistics Canada, Canadian Centre for Justice Statistics, Corrections Key Indicator Report; Demography Division, Population Estimates ¹⁵¹, 4.1 per 10,000 population youth in BC were incarcerated in 2005/06.

Aboriginal youth are over represented among youth in custody in Canada, relative to their numbers in the general population (8% in the 2001 census). Aboriginal youth accounted for 44% of admissions to remand in Canada in 2002/03, 46% of custody sentences, 32% of probation admissions, and 21% of extra judicial sanctions. ¹⁵²

According to *Time Out II: A Profile of BC Youth in Custody* ¹⁵³ (the McCreary Centre Society's Adolescent Health Survey for youth in custody), most youth in custody in BC have been previously charged with an offence. They report the types of previous charges as: breach or escape 79%; assault or uttering threats 63%; break and enter 60%; weapons offence 52%; robbery 52%; drug offence 40%; theft 22%; homicide 9%; sexual offence 4% (youth could mark as many as applied).

DISCUSSION

As the *Adolescent Health Survey* for youth in custody indicates, many youth are coming from abusive families, have addictions, physical and mental health problems, been exposed to violence and are disconnected from family and community supports. It is not surprising then that this group is more likely to have poorer physical and mental health. Over half have been diagnosed with a conduct disorder and are 10 times more likely to suffer from psychosis than the general population. They have higher rates of post traumatic stress disorder, typically as a

¹⁵¹ Statistics Canada, Corrections Key Indicator Report, *Juristat*, Volume 28(8). See <http://www.statcan.gc.ca/pub/85-002-x/2008008/article/10655/tbl/tbl09-eng.htm>. Accessed Feb. 8, 2011.

¹⁵² Canadian Centre for Justice Statistics, *Juristat*, Statistics Canada, Catalogue no.85-002, Volume 24.

¹⁵³ Murphy, A., Chittenden, M., & The McCreary Centre Society (2005). *Time Out II: A Profile of BC Youth in Custody*. Vancouver, BC. The McCreary Centre Society.

result of exposure to violence. Over half of the population have substance abuse problems and are involved in high risk sexual behavior. While in custody, they are three times more likely to commit suicide and twice as likely to die of an illness compared to the general population.

CONCLUSION

The following table presents the magnitude, significance, modifiability, and data availability/validity for the concept 'Youth Charged and Convicted'.

Child Health and Well-Being						
Youth Charged and Convicted						
			Magnitude	Significance / Impact	Modifiability	Data Availability/Validity
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Proportion of BC child /youth population to which concept/indicator applies	Association between concept and health/well-being dimension	Degree the concept/indicator(s) be reasonably changed through public policy or other intervention	Existence and validity of information for the component indicator(s) for each concept
Youth Charged & Convicted	12-17	12,812-14,687	Low	High	High	Low

The **Magnitude** of the pediatric population is assessed at **Low**. Of the estimated 312,499 youth aged 12-17 years in BC as of 2010 according to Statistics Canada, 47 per 1,000 were charged or 14,687. For the estimated prevalence of youth convicted, 41 per 1,000 or 12,812 youth aged 12-17 were convicted in 2005/06. Both estimates are less than 2% of the total pediatric cohort of BC. Note that these prevalence estimates are on the low side as they do not include youth 18-19 years nor factor in the higher number of youth convicted that are of Aboriginal heritage (44% of 77,634).

The **Significance/impact** of the potential indicator based on the research evidence is assessed as **High**. The research evidence of the health and well-being of youth charged and convicted indicates strong evidence for substantial mental and physical health effects. The severity of poor health for the potential indicator is associated with such outcomes as post-traumatic stress disorder, suicide, substance abuse, high risky sexual behavior, and psychosis.

Current thinking for modifying or preventing crime is through social development programs. The Canadian Council of Social Development ¹⁵⁴ lists the following areas to consider for crime prevention: addictions treatment, countering violence, early childhood education, employment, housing, income, neighbourhoods, positive parenting, recreation, rehabilitation, secondary education, and special needs programming. Specific interventions that have shown to be effective for youth crime prevention have been evaluated by the Center for the Study and Prevention of Violence (CSPV), at the University of Colorado.¹⁵⁵ Using strict scientific standards for assessing program effectiveness, they have identified 12 model programs which are effective in reducing anti-social behaviour, aggression, delinquency, substance abuse, and violent crime among adolescents. These are:

Midwestern Prevention Project (MPP)
Big Brothers Big Sisters of America (BBBS)
Functional Family Therapy (FFT)
Life Skills Training (LST)
Multisystemic Therapy (MST)
Nurse-Family Partnership (NFP)
Multidimensional Treatment Foster Care (MTFC)
Olweus Bullying Prevention Program (BPP)
Promoting Alternative Thinking Strategies (PATHS)
The Incredible Years: Parent, Teacher and Child Training Series (IYS)
Project Towards No Drug Abuse (Project TND)

Thus, since there are interventions that are available, feasible, and effective for preventing youth violence and crime, the **Modifiability** rating for youth charged and convicted is assessed as **High**.

¹⁵⁴ Canadian Council of Social Development. See <http://www.ccsd.ca/cpsd/ccsd/interventions.htm>. Accessed Feb. 9, 2011.

Data Availability/Reliability for the potential indicator is assessed as **Low**. It may be that data is collected routinely through the Justice Services, BC Ministry of Children and Family Development, but since that data is neither reported regularly or publically available, it is impossible to confirm.

Based on the assessment of youth charged and convicted concept summarized here, the indicator ***percentage of youth involved in crime*** is recommended for consideration as a **Developmental indicator** of child health and well-being. The developmental consignment refers to the need for ensuring consistent, reliable, and valid data collection and reporting. The high ratings for significant/impact and modifiability suggest that this potential indicator is an important candidate for inclusion.

¹⁵⁵ Center for the Study and Prevention of Violence (CSPV). See <http://www.colorado.edu/cspv/blueprints/modelprograms.html>. Accessed Feb. 9, 2011

CONCLUSIONS

This final section of the report is intended to efficiently pull together the large volume of information identified for the dimension of social relationships and child health and well-being. The ultimate purpose of this report and the others in this series is to support the overall project in recommending a set of high leverage indicators of child health and well-being based on the most current evidence-based research. Feasibility of application in the real world is another important consideration; comprising both prevention potential and the ability to populate the indicator with valid data and thereby track prevention progress.

The table below summarizes the individual concept results in relation to: magnitude; significance/impact; modifiability; and data availability. The latter three evaluation categories were assessed qualitatively in terms of a high-level rating of Low, Medium, or High; the meaning of these ratings is provided in the methodology section.

Child Health and Well-Being						
Summary Assessment of Concepts/Indicators for Social Relationships Dimension						
Concept/Indicator	Age Group(Years)	Estimated Prevalence Among B.C. Children	Magnitude <i>Proportion of BC child /youth population to which concept/indicator applies</i>	Significance / Impact <i>Association between concept and health/well-being dimension</i>	Modifiability <i>Degree the concept/indicator(s) be reasonably changed through public policy or other intervention</i>	Data Availability/Validity <i>Existence and validity of information for the component indicator(s) for each concept</i>
Relationship with Parents	0-19	970,048	High	High	High	High
Relationship with Adults	6-19	393,734	High	Medium	Medium	Medium
School Connectedness	6-19	330,456	High	High	Medium	High
Relationship with Peers	6-19	703,098	High	Low	High	High
Constructive use of	6-19	386,703	High	High	High	High

Time						
Community Social Capital	0-19	300,714	High	Medium	Medium	High
Physical Abuse/neglect	0-19	194,085	High	High	High	Medium
Sexual Abuse/neglect	0-19	67,929	Medium	High	High	Medium
Domestic Abuse exposure/neglect	0-19	329,945	High	High	High	Medium
Children In Care	0-18	8,908	Low	High	High	Low
Social Support for Parents	0-19	121,000	High	High	Medium	High
Bullying	6-19	63,278	Medium	High	High	High
Prenatal Parental alcohol/substance abuse	0-1	801-3116	Low	High	Medium	High
Postnatal Parental Alcohol/Substance Use	0-19	29,101-291,014	Medium	High-Alcohol Medium-Drugs	Medium	High
Neighbourhood Safety	6-19	112,495-196,867	High	Medium	Medium	High
Youth Who Receive Alternative Sentencing	12-17	Less than 14,687	Low	Medium	Medium	Low
Youth Charged & Convicted	12-17	12,812-14,687	Low	High	High	Low

RECOMMENDED INDICATORS

Based on these systematic reviews and the assessment of magnitude, significance, modifiability, and data availability, the following ten core and two developmental indicators are recommended.

Domain	Indicator	Data Sources
CORE INDICATORS		
Protective Factors	Relationship with parents	NLSCY
	<i>Percentage of children reporting a poor relationship with their parents</i>	Adolescent Health Survey
	School connectedness	Adolescent Health Survey
	<i>Percentage of children reporting that they like and feel welcomed at school</i>	British Columbia School Satisfaction Survey
	Constructive use of time	Adolescent Health Survey
	<i>Percentage of students involved in extracurricular activities</i>	British Columbia School Satisfaction Survey
Safety Factors	Community Social Capital	NLSCY
	<i>Percentage of children who report a strong sense of belonging to their community</i>	Adolescent Health Survey
	Child Maltreatment	BC Ministry of Children and Family Development
	<i>Percentage of children reporting “being physically abused or mistreated by anyone in their family or by anyone else”</i> as indicated from the McCreary Centre Society <i>Adolescent Health Survey</i> and <i>the incidence rate of physical abuse, neglect, sexual abuse, and exposure to domestic violence</i> as indicated from the BC Ministry of Children and Family Development	Adolescent Health Survey
	Children in Care	BC Ministry of Children and Family Development
	<i>Rates of children in care (foster, kinship, institutionalized)</i>	Adolescent Health Survey

	School safety	Adolescent Health Survey
	<i>Percentage of children who report being bullied, teased or picked on at school</i>	British Columbia School Satisfaction Survey
	Neighborhood safety	NLSCY
	<i>Percentage of children living in unsafe neighborhoods</i>	
	Maternal prenatal substance abuse	British Columbia Perinatal Database Registry
	<i>Percentage of women engaged in prenatal substance abuse</i>	Mother Experiences Survey
Family Economic Well-being	Families living in Poverty	Survey of Labour and Income Dynamics
	<i>Incidence of low income and families receiving financial assistance</i>	British Columbia Ministry of Housing and Social Development
DEVELOPMENTAL INDICATORS		
	Relationship with other Adults	Adolescent Health Survey
	<i>Percentage of children reporting a positive relationship with an adult outside the family</i>	British Columbia School Satisfaction Survey
	Youth involved in Crime	Universal Crime Reporting Survey
	<i>Percentage of youth involved in crime</i>	British Columbia Ministry of Children and Family Development

The indicators chosen reflect both protective and risk factors that were identified as significant and important in this review for the health and well-being of children and youth. From the original list of concepts, scientific evidence according to the parameters of this systematic review was unavailable for two concepts: (1) child protection caseload; and, (2) at-risk children and youth supported to stay at home, and thus both were deleted from this assessment. Three other original concepts were eliminated from the recommended indicators due to the

lack of evidence suggesting a significant association with child health and well-being. These were: (1) relationship with peers, (2) postnatal parental substance abuse; and (3) youth who receive alternate sentencing.

This review also found that certain populations of children in British Columbia require additional attention. These include those: living in poverty, those with Aboriginal heritage, children in care, and children with disabilities or persistent limitations.

ANNEX H-1

DATA SOURCES

Data Source and Owner	Description	Limitations
BC Ministry of Child and Family Development	The Ministry of Children and Family Development is the source of data related to youth in custody, children in care, incidence of child abuse or neglect and child fatalities. The ministry is the exclusive collector and holder of data related to the province's child welfare system, including administrative data related to the province's in-care child population.	Data for children in care is not obvious and transparent and unclear for Aboriginal children in care.
BC Ministry of Housing and Social Development	Data for children in families in the province receiving Income Assistance are provided by the Ministry of Housing and Social Development. Listed are end of month counts of families receiving Income Assistance, and end of month counts of children in families receiving Income Assistance.	Income Assistance cases are an aggregate of two specific case categories: Temporary Assistance Cases, and Disability Assistance Cases. The former case category is further delineated into subcategories based upon the individual's readiness to work.
British Columbia School Satisfaction Survey	The British Columbia School Satisfaction Survey is administered by the Ministry of Education. The School Satisfaction Survey provides school administrators with indicators of school performance such as: student achievement, social development, and school safety. The following grades were represented for 2009/2010: grades 3 and 4, grade 7, grade 10 and grade 12. As well, staff and parent data is collected.	Data is collected online for three months at the individual school and school district levels. Data is amalgamated and reported at the Health Service Delivery Area and Health Authority levels. Students denoted 'Aboriginal' in the School Satisfaction Surveys self-identify.
Canadian Addictions Survey	The goals of the CAS are to: 1. To determine the prevalence, incidence and patterns of alcohol and other drug use in the Canadian population aged 15 years and older. The drugs of interest include alcohol, tobacco, illicit drugs—including cannabis, heroin and other opiates, cocaine and crack, amphetamines,	Although sample surveys are the most feasible means to establish and monitor substance use issues in the population, those interpreting CAS data should consider the following: Telephone households. The CAS is based on a target population of households with telephones. Whether drug use estimates would be significantly biased by projecting to all households

Data Source and Owner	Description	Limitations
	<p>and hallucinogens (including MDMA)—and inhalants.</p> <ol style="list-style-type: none"> 2. To measure the extent of harms that are associated with those individuals who use drugs. Measures include indicators of hazardous and harmful drinking, dependence and abuse indicators, and adverse effects on personal and social functioning. 3. To assess the context of use and identify the risk and protective factors related to drug use and its consequences in the general population and in specific subgroups. 4. To measure the public’s opinions, views and knowledge about existing and potential addiction policies, and to identify emerging policy issues. 5. To provide baseline data for future evaluations of the effectiveness of Canada’s Drug Strategy and other efforts to reduce the harm caused by alcohol and other drug use. 	<p>depends on the size of non-telephone households and their demographic composition. Fortunately, Canada has high telephone coverage rates exceeding 97% (Trewin & Lee, 1988). As well, conventional household surveys are limited to those residing in conventional households and are not intended as a sample of all possible adults. Thus, those in prisons, hospitals, military establishments, and transient populations such as the homeless, are not included. These excluded groups often contain an especially large number of drug users and heavy drinkers. However, the bias caused by such non-coverage depends on firstly, the difference in drug use between those surveyed and those not surveyed, and secondly, the size of the group missed (Groves & Couper, 1998). Thus, even if rates of drug use are substantially higher in the excluded group than in the sampled group, if the size of the excluded group is small relative to the total population, the bias is usually minimal (Kandel, 1991). Telephone surveys tend to over-represent those with higher education and under-represent those with lower education (Trewin & Lee, 1988).</p> <p>Interview Barriers. Some interviews could not be completed because respondents could not adequately converse in English or French or were too ill or aged.</p>
<p>Canadian Community Health Survey-Cycle 4</p>	<p>Since 2000-2001, the Canadian Community Health Survey (CCHS) has compiled information on the health status, health care utilization, and health determinants of the Canadian population aged 12 and older. To support health surveillance programs and promote health research more generally, the CCHS assembles health data at the national, provincial, and intra-provincial levels. CCHS content reflects contemporary and emerging health issues, and since 2007 data is released annually.</p>	<p>CCHS measures are survey based estimates for the British Columbia population 12 to 18 years, and in certain instances may be of marginal or unacceptable quality. CCHS estimates that appear in bold are designated marginal by Statistics Canada. Such estimates are subject to high levels of sampling variability as indicated by a calculated Coefficient of Variation between 16.6 and 33.3. Unacceptable CCHS estimates, those with a Coefficient of Variation above 33.3, have been deemed invalid by Statistics Canada and are therefore not reported. The CCHS does not capture data for persons living on Indian Reserves and on Crown Lands, institutional residents, full-time</p>

Data Source and Owner	Description	Limitations
<p>Canadian Incidence Study of Reported Child Abuse and Neglect</p>	<p>The CIS-2008 sample was drawn in three stages:</p> <p>first, a representative sample of child welfare sites from across Canada was selected, then cases were sampled over a three-month period within the selected sites, and finally, child investigations that met the study criteria were identified from the sampled cases</p> <p>I: Site Selection • 112 child welfare sites selected from a national list of 412 child welfare organizations • Stratified by size, province/territory, and Aboriginal status</p> <p>II: Case Sampling • 9,933 cases opened between October 1 and December 31 2008* • In most jurisdictions, cases were counted as families except for Québec, where each child was a case • Excluded investigations on already-open cases • For cases that were opened more than once during the collection period, only the first report was included</p> <p>III: Identifying Investigated Children • 15,980 children investigated because maltreatment concerns were identified.</p>	<p>members of the Canadian Forces, and residents of certain remote regions.</p> <p>Several limits inherent in the nature of the data collected must be taken into consideration: • as a result of changes in the way risk of future maltreatment cases are identified in the CIS-2008, comparisons between study cycles must be made with caution. Tables in the CIS-2008 report cannot be directly compared to tables in the two previous reports. Chapter 3 presents selected comparisons across study cycles; please interpret this chapter with caution; • the weights used to derive annual estimates include counts of children investigated more than once during the year, therefore the unit of analysis for the weighted estimates is a child investigation; • the CIS tracks information during the first 6 weeks of case activity, however there were slight provincial and territorial differences in this length of time; service outcomes such as out-of-home placements and applications to court included only events that occurred during those first approximately 4-6 weeks; Table 3-5 and Table 3-6 are affected by this limitation; • as a result of differences in data collection procedures, data from Québec could not be included in Table 3-4a, which displays sources of referral in investigations across CIS cycles, and in Table 3-7, which displays the previous case openings for children in the three study cycles. Québec estimates for Tables 3-5 and 3-6 are derived from an updated version of the Étude d'incidence québécoise (EIQ) [Québec Incidence Study] 2003 database. Subsequent to the publication of the CIS-2003 report, the EIQ research team was able to retrieve previously unavailable information from the PIJ information system, including information on ongoing services and placement. Because estimates were derived from aggregate figures from the EIQ-2003 technical report (Tables 12b and 14b), tests of significance could not be completed; • the annual national counts presented in this report are weighted estimates. In some instances, sample sizes were too small to derive</p>

Data Source and Owner	Description	Limitations
		<p>publishable estimates. For example, Table 4-4 presents the nature of physical harm by primary maltreatment category; the number of substantiated physical abuse investigations involving broken bones or fatality could not be reported due to small sample sizes; • the CIS tracks only reports investigated by child welfare sites and does not include reports that were screened out, cases that were investigated only by the police and cases that were never reported. For instance, Table 4-1 presents the estimated number of substantiated incidents of exposure to intimate partner violence in Canada. This number does not include incidents of intimate partner violence that were investigated only by the police, and it does not include incidents of intimate partner violence that were never reported to child welfare authorities; and • the study is based on assessments provided by the investigating child welfare workers and could not be independently verified. For example, Table 5-2 presents the child functioning concerns reported in cases of substantiated maltreatment. The investigating workers determined if the child subject of the investigation demonstrated functioning concerns, for instance depression or anxiety. However, these child functioning concerns were not verified by an independent source.</p>
<p>McCreary Adolescent Health Survey IV (AHS IV)</p>	<p>The McCreary Centre Society’s Adolescent Health Surveys are population-based designed to monitor the health status and risk behaviours of British Columbia youth. The fourth and most recent survey targets the British Columbia student population, Grades 7 to 12, enrolled in regular public schools during the 2007-2008 school year. As well, surveys are conducted with youth in custody and those of Aboriginal heritage.</p>	<p>Survey coverage is high – the fourth survey was conducted in all but nine of the province’s 2007-2008 School Districts, with 29,315 students providing complete data records. The survey is designed to produce estimates of population characteristics with a maximum standard error of 3.5%.</p>
<p>Labour Force Survey</p>	<p>The Labour Force Survey (LFS) provides regular and timely data about the Canadian labour market, and is currently conducted at monthly intervals. The LFS is the only source of monthly information on standard labour market indicators such as the unemployment rate and</p>	<p>Approximately 54,000 households are interviewed for the survey each month. Institutionalized persons, persons living on reserves, and full-time members of the Canadian Armed Forces</p>

Data Source and Owner	Description	Limitations
	the participation rate, and supplies valuable information on the characteristics of Canada's employed, and unemployed populations.	are excluded from the LFS.
National Longitudinal Survey of Children and Youth	The National Longitudinal Survey of Children and Youth (NLSCY) is a long-term study of Canadian children that follows their development and well-being from birth to early adulthood. The NLSCY began in 1994 and is jointly conducted by Statistics Canada and Human Resources and Skills Development Canada (HRSDC), formerly known as Human Resources Development Canada (HRDC). The study is designed to collect information about factors influencing a child's social, emotional and behavioural development and to monitor the impact of these factors on the child's development over time. The survey covers a comprehensive range of topics including the health of children, information on their physical development, learning and behaviour as well as data on their social environment (family, friends, schools and communities).	<p>The NLSCY is a general population survey and not designed for the analysis of rare characteristics or rare subpopulations within NLSCY which would yield small samples and result in high relative sampling variance.</p> <p>Possible sources of nonsampling errors in the NLSCY include: response errors due to sensitive questions, poor memory, translated questionnaires, approximate answers, and conditioning bias; nonresponse errors; and coverage errors.</p>
Survey of Labour and Income Dynamics	The Survey of Labour and Income Dynamics (SLID) is a longitudinal survey administered by Statistics Canada. The SLID targets all persons living in Canada, and since 1993 has collected information on economic well-being and its determinants.	The SLID is designed to support reliable statistical inference at the provincial level and for certain Central Metropolitan Areas, but the survey excludes the following groups: Persons living in Yukon, the Northwest Territories, and Nunavut, persons living on Reserves, persons living in institutions, and military personnel living in barracks. The SLID, unlike the Labour Force Survey for example, does not have explicit guidelines surrounding the release of low quality estimates. However, documentation suggests that the sampling variability of estimates for British Columbia, as measured by the Coefficient of Variation, is well within the acceptable bounds Statistics Canada has defined for estimates sourced from other surveys.
Universal Crime Reporting Survey	Youth crime statistics utilize aggregate data from the Uniform Crime Reporting (UCR) Survey, which gathers and stores information contained in police occurrence report forms. The UCR is designed to measure the incidence of crime in Canadian society, producing a	The occurrence forms that inform the UCR follow strict reporting procedures: for violent offences, the total number of offences is equal to the number of victims involved in an incident of violent crime; for property crimes, the violent crime

Data Source and Owner	Description	Limitations
	continuous historical record of crime and traffic statistics reported by each of the nation's police agencies since 1962.	of robbery, and other crimes, the number of offenses is equal to the number of distinct incidents. Crimes reported are also governed by the Most Serious Offence Rule, which states that when a single criminal incident contains a number of legal violations only the most serious violation is recorded, thereby not providing complete data.

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