



# Child and Youth Health and Well-Being Indicators Project: Appendix G—T



Office of the  
Provincial Health Officer



Canadian Institute  
for Health Information  
Institut canadien  
d'information sur la santé



# Child and Youth Health and Well-Being Indicators Project: Appendix G—Mental and Emotional Health and Well-Being

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Evidence Review

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# Introduction

## Background

This report is part of an initiative by the Office of the Provincial Health Officer (PHO) of British Columbia and the Canadian Institute for Health Information. One of the main goals of the broader initiative is to develop a series of indicators that reflect the health and well-being of children in British Columbia, and that are sensitive to changes over time. An extensive legacy of work informs the structure and format of this document.

Previous work conducted under the PHO has led to the identification of 264 indicators associated with child health and well-being. Through further review and careful consultation with numerous experts, these indicators were reduced in number and organized into major dimensions of child health and wellbeing. The dimension examined in this report is *Mental/Emotional Health*.

The background to this report is substantially described in a separate document (*Systematic Review Protocol for Assessing Indicators of Child Health and Well-Being*). In brief, we focused on 14 concepts associated with mental/emotional health, and conducted structured literature reviews in order to examine the empirical association between each concept and the health and well-being of children. The 14 concepts are clustered into four sub-themes, comprised of family functioning, positive mental health, mental illness, and life outlook. For each concept, candidate indicators must be assessed in relation to the following four major characteristics:

- ***Magnitude***  
A quantitative statement of the proportion of B.C. child/youth population to which the concept/indicator applies (considered in terms of an absolute number)
- ***Significance/Impact***  
The association between the concept and health & well-being, with an emphasis on the particular dimension or sub-dimension of health and well-being under consideration
- ***Modifiability***  
An estimate of the extent to which the concept/indicator(s) is amenable to change through public policy or other intervention
- ***Data Availability/Validity***  
A statement of whether there are extant or potential sources of information for the component indicator(s) for each concept, alongside an indication of the quality of those data

It is anticipated that concepts that receive high ratings on multiple characteristics will likely be considered for inclusion in a final suite of core indicators.

## Overview of the Report

Each concept related to mental/emotional health was examined separately in relation to the four evaluation categories noted above. Concepts are presented in separate chapters, organized into their associated sub-themes.

The information required by each evaluation category (magnitude, significance/impact, etc.) called for a specific strategy. The methodology specified for this report gives overwhelming emphasis to evidence that concerns the significance and impact of each concept, as determined by scientific evidence. The remaining evaluation categories are occasionally informed by specific findings produced by our reviews, alongside the expertise provided by the review team.

As noted above, a clear protocol was previously developed to guide the systematic reviews carried out within each dimension of child health and wellbeing. The available information on the significance/ impact of each concept was gathered through one of two search strategies:

- Level A search: Review of systematic reviews (generally dating from 2005-present)
- Level B search: Review of primary studies (generally dating from 2000-present)

Occasionally, the available systematic reviews (or their included studies) were regarded as outdated, or gave insufficient information regarding the concept under consideration. In such cases, a further search was conducted using modified or updated terms. When useful, narrative reviews were consulted.

In order to further define the scope of our literature reviews, the main effect of concepts/ indicators related to mental/emotional health was assumed to be mental/emotional health itself. This is clear in the search terms noted in each chapter; however, facets of mental/emotional health are comprised in regular Medical Subject Headings and are included as coordinating terms in the Medline with Fulltext (PubMed) searches (eg., “social adjustment” and “resilience, psychological”).

In addition to Medline with Fulltext (PubMed) searches, each mental/emotional health concept was further searched using PsycINFO and Web of Science bibliographic databases in order to locate the most important and recent literature in mental/emotional health. PsycINFO is a comprehensive database of journals in the field of psychology, and has broad relevance and utility for research on mental health topics. Web of Science is an interdisciplinary database indexing an extensive selection of high-impact journals in the sciences and social sciences that may not be available to PsycINFO or Medline.

The reviews and individual studies selected for inclusion in the literature reviews were based on their relevance to each mental/emotional health concept, the quality of the study, and the strength of each study’s findings. A total of 7,177 articles were ultimately located and considered for inclusion. Of these, 104 articles (84 reviews and 20 individual studies)

met our inclusion criteria and were evaluated in-depth. Each article has been summarized and included in an integrative discussion and summary, leading to a final set of recommendations for mental/ emotional health indicators.

Each concept chapter begins with a brief section on background and context, followed by (as appropriate) the literature search methodology and summary and discussion of results. Mental/emotional health concepts that have available systematic reviews are presented in a 'Summary of Relevant Reviews' table highlighting article details, followed by a 'Summary Table of Reviews' to feature conclusions drawn from each review. Mental/emotional health concepts without available systematic reviews, (ie., Self-Esteem, Self-Efficacy and Self-Rated Mental Health), have individual articles presented in a 'Results after Applying Primary Exclusion: Studies' table, followed by a detailed 'Summary Table of Studies' to highlight the design and results of each study. Potential data sources for each indicator, the quality and regularity of the data stream, and the most up-to-date population magnitude related to the indicator are all noted. Finally, a conclusion is offered as to the utility of the concept or its component indicators in terms of a measure of child and youth health and well-being and a marker of progress due to secular trends or any future public health interventions.

For ease of synthesis and comparison, the latter information is summed for each of the four evaluation categories noted above in a tabular form at the end of the report; each category is assessed using the rubric of "high", "medium" or "low" utility (with the terms being defined in the final section of the report). This forms the basis for some provisional conclusions to be drawn concerning the most useful indicators for the mental/emotional health dimension and related sub-dimensions.

## Key Data Sources

An exhaustive review of data sources that may contain relevant indicators is outside the scope of this review. In some cases, relevant data may reside within government, and not be available in the public domain (e.g., administrative data). Two sources of data were described in a parallel report addressing the Dimension: Physical Health (Krueger, 2010, p.4), and are cited below:

### Canadian Community Health Survey

The Canadian Community Health Survey (CCHS) is a cross-sectional survey that collects information related to health status, health care utilization, and health determinants for the Canadian population.<sup>1</sup> The target population for the sampling is all Canadians aged 12 and

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<sup>1</sup> Statistics Canada. Canadian Community Health Survey. Available at <http://www.statcan.gc.ca/cgibin/imdb/p2SV.pl?Function=getSurvey&SurvId=3226&SurvVer=1&InstaId=15282&InstaVer=5&SDDS=3226&lang=en&db=imdb&adm=8&dis=2>. Accessed April 2010.



over, with some exclusions.<sup>2</sup> The CCHS relies upon a large sample of respondents, allowing it to provide reliable estimates at the health region level. Building on a predecessor instrument, the National Population Health Survey, the CCHS was launched in 2000, with data collection initially occurring every two years; data are available for the 2001, 2003, and 2005 periods. In 2007, major changes were made to the survey design, and data collection became annual.

### Adolescent Health Survey

The Adolescent Health Survey (AHS) was first conducted in British Columbia by the McCreary Centre Society in 1992; the inaugural work was followed by three more surveys in 1998, 2003, and 2008.<sup>3</sup> It is designed to provide a comprehensive picture of the physical and emotional health of B.C. youth. The survey includes questions about perceptions of current physical and emotional health, risky behaviours, health-promoting practices, and broader issues such as family connectedness, school safety, and peer relationships. According to 2008 survey results, for example, less than 2% of teenage males and females had experienced pregnancy; among sexually active students, 7% had been involved in a pregnancy (8% of males and 6% of females).

The AHS is completed by B.C. public school students in grades 7-12; in the 2008 survey, 50 of 59 school districts participated, for a total of 29,440 students. Participation in the survey is voluntary, with parental consent procedures being determined by the individual school districts. The AHS is administered by trained public health nurses in classrooms. Funding is provided by the Ministry of Children and Family Development and the Ministry of Health, with additional support from other government departments.

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<sup>2</sup> These include individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions

<sup>3</sup> Available at <http://www.mcs.bc.ca/AHS>. Accessed September 2010.

# Family Functioning Theme

## Family Functioning

### Systematic Review of Family Functioning Related to Mental/Emotional Health

#### Background and Context

The family, however defined, exerts a fundamental and indelible influence on a child's physical, emotional, and cognitive development. The purpose of this review is to find research evidence of an association between family functioning and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking family functioning. For the purposes of this review family functioning is defined as interactions with family members that involve physical, emotional and psychological activities. The child-parent relationship is at the core of family functioning and involves relational dynamics including parenting style, the attachment relationship, family expressiveness and the marital relationship.

#### Methodology and Provisional Results

##### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

##### Electronic Search Keywords

(MM "Family Relations" OR MM "Family Conflict" OR MM "Intergenerational Relations" OR MH "Parent-Child Relations+" OR MM "Sibling Relations" OR MH "Family Characteristics+" OR MM "Socioeconomic Factors" OR MM "Social Environment" OR MM "Social Support")

#### AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>4</sup> and Web of Science<sup>5</sup> databases for reviews using key terms such as (**family functioning OR family relations OR family conflict or parent-child relations**) AND **children** AND **mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: (**family functioning OR family relations OR family conflict or parent-child relations**) AND **children** AND **mental health**. Finally, as the most recent systematic reviews of the association of parenting style and practices with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 243 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between family functioning and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 27.

#### Primary Exclusion

The abstracts and/or full versions of the 20 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link family functioning with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 13 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

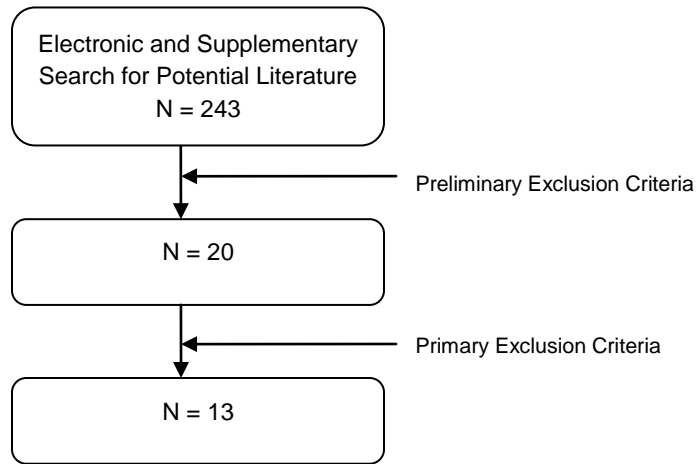
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<sup>4</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as 'birth-17 years'.

<sup>5</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.

# Literature Review Volume Report

**Dimension:** Mental / Emotional Health **Concept:** Family Functioning



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Family Functioning*

	<b>Title of Review</b>	<b>Lead Author</b>	<b>Year</b>	<b>Journal</b>	<b>Journal Impact Factor (2009)</b>	<b>Year Range of Studies</b>	<b>No. of Studies</b>
1	Parental illness, family functioning, and adolescent well-being: A family ecology framework to guide research	Pedersen & Revenson	2005	Journal of Family Psychology	2.000	-	-
2	Youth depression in the family context: Familial risk factors and models of treatment	Sander & McCarty	2005	Clinical Child and Family Psychology Review	2.600	-	-
3	Lesbian mothers, gay fathers, and their children: A review	Tasker, F.	2005	Developmental and Behavioral Pediatrics	n/a	1978-2004	41
4	Family issues in child anxiety: Attachment, family functioning, parental rearing and beliefs	Bögels & Brechman-Toussaint	2006	Clinical Psychology Review	4.901	-	-
5	Father absence and adolescent development: a review of the literature	East et al.	2006	Journal of Child Health Care	n/a	1997-2004	13
6	Theoretical models of affectionate versus affectionless control in anxious families: A critical examination based on observations of parent-child interactions	DiBartolo & Helt	2007	Clinical Child and Family Psychology Review	2.600	-	-
7	The role of the family context in the development of emotion regulation	Sheffield Morris et al.	2007	Social Development	1.723	-	-
8	Internalizing symptoms and disorders in families of adolescents: A review of family systems literature	Hughes & Gullone	2008	Clinical Psychology Review	4.901	1986-2006	79
9	Children's responses to interparental conflict: A meta-analysis of their associations with child adjustment	Rhoades, K.A.	2008	Child Development	3.631	1992-2007	71
10	Family processes in the development of youth depression: Translating the evidence to treatment	Bögels & Restifo	2009	Clinical Psychology Review	4.901	1986-2007	22
11	Girls' disruptive behavior and its relationship to family functioning: A review	Kroneman et al.	2009	Journal of Child and Family Studies	n/a	-	-

## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Family Functioning*

	<u>Title of Review</u>	<u>Lead Author</u>	<u>Year</u>	<u>Journal</u>	<u>Journal Impact Factor (2009)</u>	<u>Year Range of Studies</u>	<u>No. of Studies</u>
12	Parental divorce and children's adjustment	Lansford, J.E.	2009	Perspectives on Psychological Science	7.508	-	-
13	Psychosocial adjustment and physical health in children of divorce	Nunes-Costa et al.	2009	Jornal de Pediatria	n/a	1980-2007	-

## Detailed Results

For the 13 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

<b>Family Functioning and Mental/Emotional Health</b> <i>Summary Table of Reviews</i>			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Pedersen &amp; Reversion (2005)</b>	Parental illness, family functioning, and adolescent well-being: A family ecology framework to guide research	-	Parental illness is a stressful experience for young people, constituting a potential threat to physical and mental health and normative development. The literature provides support for the hypothesis that parental illness negatively impacts some aspects of adolescent well-being. Adolescent children of ill parents are at greater risk for anxiety, depression, and low self-esteem. The theoretical literature suggests that daily hassles and perceived stress mediate the effects of parental illness on adolescent well-being, and there is some evidence to suggest that parental illness impacts youth adjustment through aspects of family functioning, such as parenting. Gender—of the ill parent and of the adolescent—seems to play a crucial role in determining the effects of the illness. Other factors at the family and extrafamilial levels, including coping style, culture, social support, and access to care, may also affect the direction and magnitude of the association between parental illness and family/youth well-being.
<b>Sander &amp; McCarty (2005)</b>	Youth depression in the family context: Familial risk factors and models of treatment	-	The psychosocial parent and family factors associated with youth depression are examined. The literature indicates that a broad array of parent and family factors are associated with youth risk for depression, including parental pathology, parental cognitive style, parenting behaviors of warmth and emotional availability, individual coping with the family environment, and family conflict. Results clearly indicate that mothers and fathers, for different reasons, are important to consider when conceptualizing youth risk, and possibly treatment, for depression.
<b>Tasker F. (2005)</b>	Lesbian mothers, gay fathers, and their children: A review	41	There are a variety of families headed by a lesbian or gay male parent or same-sex couple. Findings from research suggest that children with lesbian or gay parents are comparable with children with heterosexual parents on key developmental experiences and psychosocial outcomes. Research findings to date indicate that some family processes, such as the effects of parenting stress, parental conflict, and parental mental illness, have similar consequences for children across different types of family form, irrespective of parental sexual orientation. Alongside the foregoing overall conclusions, some special considerations apply to the context of lesbian and gay parenting: variation in family forms, children's awareness of lesbian and gay relationships, heterosexism, and homophobia.
<b>Bögels &amp; Brechman-Toussaint (2006)</b>	Family issues in child anxiety: Attachment, family functioning, parental rearing and beliefs	-	Family studies have found a large overlap between anxiety disorders in family members. In addition to genetic heritability, a range of family factors may also be involved in the intergenerational transmission of anxiety. Evidence for a relationship between family factors and childhood as well as parental anxiety is reviewed. Four groups of family variables are considered: attachment; aspects of family functioning, such as marital conflict, co-parenting, functioning of the family as a whole, and sibling relationships; parental rearing strategies; and beliefs that parents hold about their child. The reviewed literature provides evidence for an association between each of these family factors and child anxiety. However, there is little evidence as yet that identified family factors are specific to child anxiety, rather than to child psychopathology in general. Moreover, evidence for a relationship between child anxiety and family factors

## Family Functioning and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			is predominantly cross-sectional. Parental beliefs are identified as important predictors of parental behaviour that have largely not been investigated in relation to child anxiety disorders.
<b>East et al. (2006)</b>	Father absence and adolescent development: a review of the literature	13	Rapid social change has seen increasing numbers of woman-headed singleparent families, meaning that more and more children are growing up without a father resident in the home. Father absence is a term that is not well defined and much of the literature does not discriminate between father absence due to death, parental relationship discord or other causes. This article presents a critical review of the extant literature on father absence, particularly as it relates to adolescent well-being and development. Findings from the literature point to the importance of father presence in children's lives and suggest that father absence has ramifications for children and adolescents, suggesting that father absence is an independent variable and predictor of detrimental psychological well-being and life adversity of developing children and adolescents.
<b>DiBartolo &amp; Helt (2007)</b>	Theoretical models of affectionate versus affectionless control in anxious families: A critical examination based on observations of parent-child interactions	-	Psychosocial theories focused on the intrafamilial transmission of anxiety often concentrate on specific parenting behaviors that increase risk of anxiety disorders in children. Two such theories—affectionate versus affectionless control—both implicate parenting, although differently, in the pathogenesis of childhood anxiety. This article reviews observational studies that focus on interactions between parents and children in anxious families in order to examine critically each of these two models. This approach reveals that there is a consistent relationship between controlling parental behavior in families with anxiety-disordered children, as well as a consistent relationship between parental behavior low in warmth and families with anxiety-disordered parents.
<b>Sheffield Morris et al. (2007)</b>	The role of the family context in the development of emotion regulation	-	This review is organized around a tripartite model of familial influence and establishes a link between family factors and children's emotion regulation (ER). Firstly, it is posited that children learn about ER through observational learning, modeling and social referencing. Secondly, parenting practices specifically related to emotion and emotion management affect ER. Thirdly, ER is affected by the emotional climate of the family via parenting style, the attachment relationship, family expressiveness and the marital relationship. Child characteristics such as negative emotionality and gender affect ER, socialization practices change as children develop into adolescents, and parent characteristics such as mental health affect the socialization of ER. The emotional climate of the family, parenting behaviors related to children's emotions, and children's observational learning about emotionality and regulation, all affect children's regulation and emotional security, which in turn, is expected to impact children's adjustment.
<b>Hughes &amp; Gullone (2008)</b>	Internalizing symptoms and disorders in families of adolescents: A review of family systems literature	79	Internalizing symptoms and disorders are relatively common during adolescence and impact considerably on social and emotional functioning. This article reviews the current literature examining the impact of internalizing symptoms and disorders on the functioning of the family system, the spouse subsystem and the parent-child subsystem. Moreover, literature examining the relationship between parents' and adolescents' internalizing symptoms and disorders is reviewed. The reviewed research demonstrates that there exists an association between internalizing symptoms and disorders and poorer functioning at various levels of the family system. Longitudinal studies have generally reported that parent internalizing symptoms and disorders predict poorer functioning in the family system as well as internalizing symptoms and disorders in adolescents. Few longitudinal studies have examined whether adolescent internalizing symptoms and disorders predict poorer family functioning and internalizing symptoms and disorders in parents, with mixed results.



## Family Functioning and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Rhoades, K.A. (2008)</b>	Children's responses to interparental conflict: A meta-analysis of their associations with child adjustment	71	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 one exception, larger for internalizing than for externalizing behavior problems. Age significantly moderated the majority of effect sizes.
<b>Restifo &amp; Bögels (2009)</b>	Family processes in the development of youth depression: Translating the evidence to treatment	22	<p>There is strong evidence that family factors play a role in the development, maintenance and course of youth depression. Strong evidence was found supporting a relationship between family factors at multiple system levels and depressive symptoms or disorders. Family risk factors for youth depression were reviewed at five system levels.</p> <ul style="list-style-type: none"> <li>- At Level 1 (individual parent), parental depression has been associated with increased risk of psychiatric disorders among offspring, including depression, anxiety, substance abuse, as well as social, emotional and behavioral problems.</li> <li>- At level 2, the parent-child subsystem, evidence supports an association between increased risk of depressive symptoms and disorders in youth, and parental rearing style, low parental support, attachment difficulties, difficulty establishing autonomy and parent-youth conflict. Evidence for the role of psychological control and maternal support in predicting depressive symptoms is mixed.</li> <li>- At Level 3, the marital relationship, studies have supported a relationship between marital conflict and immediate distress in children and adolescents, as well as later development of internalizing and externalizing disorders.</li> <li>- At Level 4, the whole family system, disengaged as well as enmeshed family patterns have been linked prospectively with increased risk for symptoms of depression, anxiety and ADHD, with disengaged patterns more strongly associated with internalizing symptoms, and enmeshed patterns with ADHD symptoms. Supportive family environment has been prospectively associated with lower parent-adolescent conflict. Marital conflict has been found to be more predictive of negative child outcomes than parental depression.</li> <li>- At Level 5, the extra-family subsystem, there is evidence that stressful events increase risk for youth internalizing or externalizing symptoms, either through main effects or in interaction with other levels of the family system, with stronger effects for internalizing symptoms.</li> </ul>
<b>Kroneman et al. (2009)</b>	Girls' disruptive behavior and its relationship to family functioning: A review	-	Clarifying the heterogeneity of development in girls is important for developing and optimizing gender-specific prevention and treatment programs. In this review, the unique aspects of the development of disruptive behavior in girls is described and how the gender-specific development of disruptive behavior can be explained by family linked risk and protective processes is explored. In sum, data from cross-sectional studies suggests that disruptive behavior in girls, as in boys, is associated with low levels of parental warmth, support, supervision and monitoring and high levels of hostility and conflict. These associations appear in childhood and in adolescence and across different ethnic/racial groups. Among the

## Family Functioning and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			few longitudinal studies to date, results are less conclusive.
Lansford, J.E. (2009)	Parental divorce and children's adjustment	-	This article reviews the research literature on links between parental divorce and children's short-term and long-term adjustment. Findings indicate that the majority of children whose parents divorce do not have long-term adjustment problems, but the risk of externalizing behaviors, internalizing problems, poorer academic achievement, and problematic social relationships is greater for children whose parents divorce than for those whose parents stay together. Links between divorce and children's adjustment are moderated by several factors, including children's age at the time of their parents' divorce, children's age at the time of the study, the length of time since the divorce, children's demographic characteristics (gender, race/ethnicity), children's adjustment prior to the divorce, and stigmatization of divorce (by location or historical period). Taking family process and other mediating variables into account attenuates the association between the experience of parental divorce and children's adjustment.
Nunes-Costa et al. (2010)	Psychosocial adjustment and physical health in children of divorce	-	Reviews the literature on the effects of parental divorce over the psychological maladjustment and physical health problems in children of divorced parents. Divorce may be responsible for a decline of physical and psychological health in children. The developmental maladjustment of children is not triggered by divorce itself, but rather by other risk factors associated with it, such as interparental conflict, parental psychopathology, decline in socio-economic level, inconsistency in parenting styles, a parallel and conflicting co-parenting relationship between parents and low levels of social support. Such risk factors trigger maladjusted developmental pathways, marked by psychopathological symptoms, poorer academic performance, lower levels of physical health, risk behavior, exacerbated psychophysiological responses to stress and weakening of the immune system. Clear links were observed between experiencing parental divorce and facing problems of physical and psychological maladjustment in children. Divorce is a stressor that should be considered by health professionals as potentially responsible for maladjusted neuropsychobiological responses and for a decline in children's physical health.

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- Lansford, J.E. Parental divorce and children's adjustment. *Perspectives on Psychological Science*, 2009; 4(2), 141-152.
- Restifo, K. & Bögels, S. Family processes in the development of youth depression: Translating the evidence to treatment. *Clinical Psychology Review*, 2009; 29, 294-316.
- Nunes-Costa, R.A., Lamela, D.J.P.V. & Figueiredo, B.F.C. Psychosocial adjustment and physical health in children of divorce. *Jornal de Pediatria*, 2009; 85(5), 385-396.

## Summary of Results

A total of 13 reviews were identified under the concept of family functioning that included pertinent research evidence regarding mental/emotional health outcomes in youth. Among these reviews, each focused on either an aspect of family structure or a specific outcome related to family functioning. Of the 13 reviews, seven addressed child/youth psychopathology related to family functioning (i.e. depression, anxiety, emotional regulation, internalizing/externalizing disorders), four focused specifically on the impact of interparental relationships (i.e. parental conflict, sexuality, divorce), and two examined the role of parents as primary care providers (i.e. paternal absence, parental illness). Taken together, the findings from these reviews provide a broad summary of the empirical and theoretical literature as it relates to youth well-being as a product of family functioning. The following are key findings from this literature as it relates to the dimension of youth mental/emotional health.

Several reviews focused on the relationship between different aspects of family functioning and mental health and behavioural outcomes. Research confirms an association between youth depression and features of the parent-child relationship including parental rearing style, low parental support, attachment difficulties, individual coping style within the family environment, and family/marital conflict. Parental psychopathology (i.e. parental depression) was also shown to be associated with increased risk of psychiatric disorders in children. Anxiety disorders in children were observed to reflect the nature of the relationship between children and parents. Among children who exhibited symptoms of anxiety disorders, it was consistently observed that the parents of these children showed controlling and low-warmth parental behaviour. Additionally, it has been suggested that anxiety-disordered parents are more likely to have children who experience anxiety. However, the available empirical evidence suggests that parental anxiety is a risk factor for a number of mental disorders among offspring, rather than a specific risk for anxiety disorders alone<sup>6</sup>.

Emotional regulation, internalizing and externalizing behaviour have all been shown to be associated with family functioning. Parenting style, the attachment relationship, family expressiveness and the marital relationship have been shown to play an important role in emotional regulation and the manifestation of internalizing/externalizing behaviours in children/youth. Longitudinal studies have shown that poorer functioning at various levels of the family system is predictive of internalizing symptoms and disorders in adolescents<sup>7</sup>. Furthermore, externalizing behaviour in girls has been shown to be associated with low

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<sup>6</sup> Bögels, S.M. & Brechman-Toussaint, M.L. Family issues in child anxiety: Attachment, family functioning, parental rearing and beliefs. *Clinical Psychology Review*, 2006; 26, 834–856.

<sup>7</sup> Hughes, E.K. & Gullone, E. Internalizing symptoms and disorders in families of adolescents: A review of family systems literature. *Clinical Psychology Review*, 2008; 28, 92–117.

levels of parental warmth, support, supervision and monitoring and high levels of hostility and conflict<sup>8</sup>.

The marital relationship was the focus of several reviews. Tasker (2005) reviewed findings from studies of families headed by same-sex parent couples and found that psychosocial developmental outcomes were similar compared to outcomes among children from heterosexual-headed households. It was concluded that family processes including parental stress, conflict, and mental illness have similar consequences for children irrespective of parental sexual orientation<sup>9</sup>. Interparental conflict and divorce were examined in three separate reviews. Marital conflict was found to be more predictive of negative child outcomes than parental depression, while the age of children moderates the negative effects of parental conflict. One review concluded that the majority of children whose parents divorce do not have a greater risk of long-term adjustment problems. However in the immediate term they are at greater risk of exhibiting internalizing/externalizing behaviours, poorer academic achievement, and problematic social relationships<sup>10</sup>. Furthermore, negative consequences do not appear to be a direct consequence of the divorce itself, but rather the decline in socioeconomic level, inconsistency in parenting styles, lingering parental conflicts and lower levels of social support<sup>11</sup>.

Finally, parental absence due to illness or single parenthood both impact the well being of children/youth. Pedersen and Reverson (2005) found in their review that adolescent children of ill parents are at greater risk for anxiety, depression and low self-esteem. These outcomes are associated with the daily stresses of coping with parental illness, and are mediated by levels of social support, access to care, and coping style. With an increasing number of woman-headed single parent families, East et al. (2006) reviewed the extant literature on the effect of paternal absence. Their findings highlight the importance of the presence of the father in children's lives and suggest that paternal absence is predictive of detrimental psychological well-being and life adversity of developing children and adolescents.

## Discussion

A large body of empirical and theoretical research literature exists that has articulated the importance of family functioning as playing an integral role in optimal mental/emotional

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<sup>8</sup> Kroneman, L.M., Loeber, R., Hipwell, A.E. & Koot, H.M. Girls' disruptive behavior and its relationship to family functioning: A review. *Journal of Child & Family Studies*, 2009; 18, 259-273.

<sup>9</sup> Tasker, F. Lesbian mothers, gay fathers, and their children: A review. *Developmental and Behavioral Pediatrics*, 2005; 26(3), 224-240.

<sup>10</sup> Lansford, J.E. Parental divorce and children's adjustment. *Perspectives on Psychological Science*, 2009; 4(2), 141-152.

<sup>11</sup> Nunes-Costa, R.A., Lamela, D.J.P.V. & Figueiredo, B.F.C. Psychosocial adjustment and physical health in children of divorce. *Jornal de Pediatria*, 2009; 85(5), 385-396.

health and well-being in youth. Family functioning is a multi-faceted concept that incorporates all aspects that impact the parent-child relationship, as well as the structures that influence this relationship.

## Conclusion

The association between family functioning and child youth mental and emotional health is both face valid and empirically established. The available literature emphasizes that the form of the family unit (e.g., parental gender, sexual orientation) is less relevant than the qualitative interactions between family members. Divorce is relevant in this regard, not because of the event itself, but due to the emotional and economic hardships that often accompany the break-up of parents. Few extant indicators of family functioning are known within BC. Divorce rates have a low-to-moderate overall association with child and youth mental/emotional health, and warrant consideration as an indicator.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Family Functioning</b> <i>Divorce Rates</i>	0 – 18 yrs	-	Low/Moderate	Low/Moderate	Statistics Canada

## Parenting Style & Practices

# Systematic Review of Parenting Style & Practices Related to Mental/Emotional Health

## Background and Context

The purpose of this review is to find research evidence of an association between parenting style and practices and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking parenting style and practices. Parenting style is defined by everyday as well as situation dependant interactions between parents and their children. The manner in which parents model behaviours, enforce discipline, communicate, care for and support their children are all important aspects of the parent-child relationship and influence child behaviour and development.

## Methodology and Provisional Results

### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

### Electronic Search Keywords

(MH "Parenting" OR MH "Maternal Behavior+" OR MM "Maternal Deprivation" OR MM "Paternal Behavior" OR MM "Paternal Deprivation" OR MM "Child Rearing" OR MH "Child Care+")

## AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>12</sup> and Web of Science<sup>13</sup> databases for reviews using key terms such as **(parenting OR parenting style OR childrearing practices) AND children AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(parenting OR parenting style OR childrearing practices) AND children AND mental health**. Finally, as the most recent systematic reviews of the association of parenting style and practices with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 659 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between parenting style and practices and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 22.

#### Primary Exclusion

The abstracts and/or full versions of the 22 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link parenting style and practices with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 11 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

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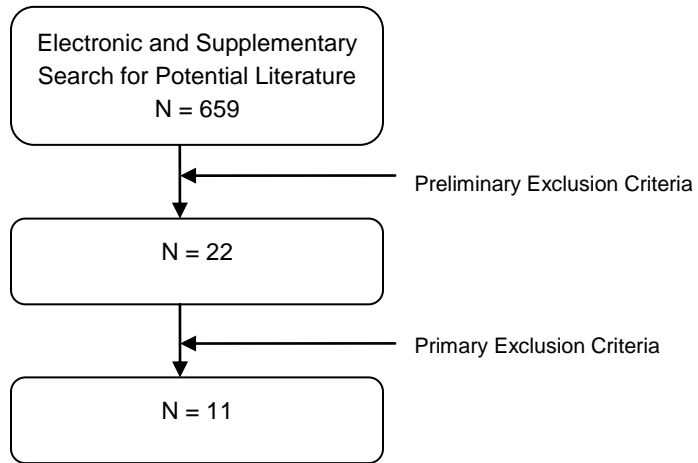
<sup>12</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as 'birth-17 years'.

<sup>13</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.



## Literature Review Volume Report

***Dimension:*** Mental / Emotional Health ***Concept:*** Parenting Style & Practices



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Parenting Style & Practices*

	<b>Title of Review</b>	<b>Lead Author</b>	<b>Year</b>	<b>Journal</b>	<b>Journal Impact Factor (2009)</b>	<b>Year Range of Studies</b>	<b>No. of Studies</b>
1	Psychological and sociological aspects of parenting and their relation to suicidal behavior	Firini, F.	2005	Archives of Suicide Research	n/a	-	-
2	Potential roles of parental self-efficacy in parent and child adjustment: A review	Jones & Prinz	2005	Clinical Psychology Review	4.901	1987-2002	42
3	Examining the association between parenting and childhood anxiety: A meta-analysis	McLeod et al.	2007	Clinical Psychology Review	4.901	1968-2002	47
4	Examining the association between parenting and childhood depression: A meta-analysis	McLeod et al.	2007	Clinical Psychology Review	4.901	1987-2004	45
5	Fathers' role in the etiology, prevention and treatment of child anxiety: A review and new model	Bögels & Phares	2008	Clinical Psychology Review	4.901	-	-
6	Relationships between parenting styles and risk behaviors in adolescent health: An integrative literature review	Newman et al.	2008	Revista Latino-Americana de Enfermagem	0.608	1996-2007	-
7	Research review: The relation between child and parent anxiety and parental control: A meta-analytic review	Van der Bruggen et al.	2008	Journal of Child Psychology and Psychiatry	4.983	1989-2006	23
8	The relationship between parenting and delinquency: A meta-analysis	Hoeve et al.	2009	Journal of Abnormal Child Psychology	2.966	1950-2007	161
9	The socio-emotional effects of non-maternal childcare on children in the USA: A critical review of recent studies	Jenet, J.I.	2009	Early Child Development and Care	n/a	1998-2006	15
10	Parenting factors associated with reduced adolescent alcohol use: a systematic review of longitudinal studies	Ryan et al.	2010	Australian and New Zealand Journal of Psychiatry	2.253	2008-2009	77
11	The association between coparenting and child adjustment: A meta-analysis	Teubert & Pinquart	2010	Parenting: Science and Practice	0.821	1981-2009	59

## Detailed Results

For the 11 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

<b>Parenting Style &amp; Practices and Mental/Emotional Health</b> <i>Summary Table of Reviews</i>			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Firini, F. (2005)</b>	Psychological and sociological aspects of parenting and their relation to suicidal behavior	-	Reviews the evidence on the role of childhood adversities, family structure, and parenting in youth suicidal behavior. Argues that measures (both at the micro and the macro level) that target vulnerable populations such as parents with weak material and social resources, low social and emotional support, mental health problems and few networks, and high-risk children might be beneficial in preventing youth suicidal behaviors. Suggests that future suicide research could benefit from investigating how parenting can protect against suicidal behavior in young people at risk.
<b>Jones &amp; Prinz (2005)</b>	Potential roles of parental self-efficacy in parent and child adjustment: A review	42	Examines the potential roles of parental self-efficacy (PSE) in parent and child adjustment and the role of parental cognitions in understanding behaviors and emotions within families. There is strong evidence linking PSE to parental competence, and more modest linkage to parental psychological functioning. Some findings suggest that PSE impacts child adjustment directly but also indirectly via parenting practices and behaviors. Although the role of PSE likely varies across parents, children, and cultural-contextual factors, its influence cannot be overlooked as a possible predictor of parental competence and child functioning, or perhaps an indicator of risk. PSE may also be an appropriate target for prevention and intervention efforts.
<b>McLeod et al. (2007)</b>	Examining the association between parenting and childhood anxiety: A meta-analysis	47	To help clarify the role parenting plays in childhood anxiety, a meta-analysis of 47 studies was conducted to test the association between parenting and child anxiety. Across these studies, parenting accounted for only 4% of the variance in child anxiety. Methodological factors (i.e., how child anxiety and parenting were conceptualized and assessed) may be a source of inconsistent findings within the literature. In addition, analyses revealed that parental control was more strongly associated with child anxiety than was parental rejection. Specific subdimensions within parental rejection and control differed in their association with child anxiety (e.g., autonomy-granting accounted for 18% of the variance, but warmth <1%). Overall, the modest association between parenting and child anxiety suggests that understanding the origins of children's anxiety will require identifying factors other than parenting that account for the bulk of the variance.
<b>McLeod et al. (2007)</b>	Examining the association between parenting and childhood depression: A meta-analysis	45	A meta-analysis of 45 studies was conducted to test the association between parenting and childhood depression. Parenting was found to account for 8% of the variance in child depression. Parental rejection was more strongly related to childhood depression than was parental control. Moreover, various subdimensions of parenting were differentially associated with childhood depression, with parental hostility toward the child most strongly related to child depression. Methodological factors (i.e., how parenting and child depression was conceptualized and assessed) moderated the parenting-childhood depression association. Inconsistent findings within the literature are partially attributable to variations from study to study in measurement quality. Overall, the modest association between parenting and childhood depression indicates that factors other than parenting may account for the preponderance of variance in childhood depression.

## Parenting Style & Practices and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Bögels &amp; Phares (2008)</b>	Fathers' role in the etiology, prevention and treatment of child anxiety: A review and new model	-	This review provides a historical background of what is known about fathers' roles in the etiology of anxiety problems and provides evidence of the connections between fathers' and their children's anxiety. There is ample evidence suggesting that fathers have an important and unique role in child development, which continues to be important in children's young adult years. Evidence also shows that fathers play an important role in childhood anxiety, which may be different from that of mothers. If fathers are not limiting, involved, and do not encourage the autonomy of the child, the child is at risk for anxiety symptoms. Children with anxiety disorders have a three-fold likelihood that their father had an anxiety disorder too, and there is some preliminary evidence that paternal anxiety shapes the relationship with the child in terms of less warmth and more conflict. Moreover, children seem to put higher weight on fathers' responses than on mothers' responses in the face of possible threat, in order to decide whether the situation is dangerous and should be avoided, which is related to the development of subsequent anxiety or an anxiety disorder.
<b>Newman et al. (2008)</b>	Relationships between parenting styles and risk behaviors in adolescent health: An integrative literature review	-	Research over the past 20 years suggests that the quality of the parent-adolescent relationship significantly affects the development of risk behaviors in adolescent health. This review of studies examines specific relationships between parenting styles and six priority adolescent risk behaviours identified by the Centers for Disease Control and Prevention (CDC): use of alcohol, drugs and/or tobacco; intentional injury; unintentional injury; unhealthy sexual behaviours; unhealthy eating practices and physical inactivity. The review supports the substantial influence of parenting style on adolescent development. Adolescents raised in authoritative households consistently demonstrate higher protective and fewer risk behaviors than adolescents from non-authoritative families. There is also considerable evidence to show that parenting styles and behaviors related to warmth, communication and disciplinary practices predict important mediators, including academic achievement and psychosocial adjustment.
<b>Van der Bruggen et al. (2008)</b>	Research review: The relation between child and parent anxiety and parental control: A meta-analytic review	23	Parental control may enhance child anxiety and parents may exert control in anticipation of their child's anxiety-related distress. Moreover, high levels of anxiety in parents could influence the development of parental control. This meta-analysis focuses on the associations between both child and parent anxiety and parental control, thus extending McLeod et al.'s (2007) meta-analysis. A substantial association between child anxiety and parental control ( $d = .58$ ) was found. Moderator analyses yielded the strongest effect sizes for studies with an overrepresentation of girls, for school-aged children, for families from higher socioeconomic backgrounds, and for studies using a discussion task to assess parental control. Although a nonsignificant relation was found for the relation between parent anxiety and parental control ( $d = .08$ ), small but significant effects were found for school-aged children, for studies using a discussion task to assess parental control, and for samples with an overrepresentation of boys. Overall, no consistent link between parent anxiety and observed parental control was found, suggesting that interventions for children with anxiety disorders should target parental control or the child's anxiety-related behaviors, but not parent anxiety.
<b>Hoeve et al. (2009)</b>	The relationship between parenting and delinquency: A meta-analysis	161	This meta-analysis was conducted to determine whether the association between parenting and delinquency exists and what the magnitude of this linkage is. The strongest links were found for parental monitoring, psychological control, and negative aspects of support such as rejection and hostility, accounting for up to 11% of the variance in delinquency. Several effect sizes were moderated by parent and child gender, child age, informant on parenting, and delinquency type, indicating that some parenting behaviors are more important for particular contexts or subsamples. Fewer than 20% of the studies

## Parenting Style & Practices and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			focused on parenting behavior of fathers, despite the fact that the effect of poor support by fathers was larger than poor maternal support, particularly for sons.
<b>Jenet, J.I. (2009)</b>	The socio-emotional effects of non-maternal childcare on children in the USA: A critical review of recent studies	15	This review of studies evaluated the relationship between non-maternal childcare and children's social-behavioral adjustment. Recent studies have focused on how the factors of non-maternal childcare quantity, quality, type and timing interact with factors of family background and child characteristics to affect various indicators of socialbehavioral adjustment. Findings indicate that average weekly hours of nonmaternal childcare is the strongest and most consistent childcare predictor of social-behavioral outcomes. Entry into childcare during the first year and extensive non-maternal childcare throughout early childhood predicts less social competence and cooperation, more problem behaviors, negative mood, aggression and conflict. When family background factors are also considered, maternal sensitivity is the most consistent predictor of social-behavioral adjustment.
<b>Ryan et al. (2010)</b>	Parenting factors associated with reduced adolescent alcohol use: A systematic review of longitudinal studies	77	Twelve parenting variables were investigated to identify parenting strategies associated with adolescent alcohol consumption: parental modelling, provision of alcohol, alcohol-specific communication, disapproval of adolescent drinking, general discipline, rules about alcohol, parental monitoring, parent-child relationship quality, family conflict, parental support, parental involvement, and general communication. Delayed alcohol initiation was predicted by: parental modelling, limiting availability of alcohol to the child, parental monitoring, parent-child relationship quality, parental involvement and general communication. Reduced levels of later drinking by adolescents were predicted by: parental modelling, limiting availability of alcohol to the child, disapproval of adolescent drinking, general discipline, parental monitoring, parent-child relationship quality, parental support and general communication.
<b>Teubert &amp; Pinquart (2010)</b>	The association between coparenting and child adjustment: A meta-analysis	59	Examined the relation between coparenting and child adjustment. The authors differentiate among cooperation, agreement, conflict, and triangulation as dimensions of coparenting. Further, they differentiate internalizing and externalizing symptoms, social functioning of children, and attachment as outcomes. Effect sizes were generally small and, to some extent, moderated by age of the children, percentage of girls in the sample, clinical background of the sample, mono-informant bias, annual family income, and percentage of separated parents. Effect sizes remained significant after controlling for individual parenting or marital quality. Coparenting predicted change in child adjustment and thus, is important for the psychological adjustment of children.

### Bibliography for Summary Table

Eirini, F. Psychological and sociological aspects of parenting and their relation to suicidal behavior. *Archives of Suicide Research*, 2005; 9(4), 373-383.

Jones, T.L. & Prinz, R.J. Potential roles of parental self-efficacy in parent and child adjustment: A review. *Clinical Psychology Review*, 2005; 25, 341-363.

McLeod, B.D., Wood, J.J. & Weisz, J.R. Examining the association between parenting and childhood anxiety: A meta-analysis. *Clinical Psychology Review*, 2007; 27, 155–172.

McLeod, B.D., Weisz, J.R. & Wood, J.J. Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review*, 2007; 27, 986–1003.

Bögels, S. & Phares, V. Fathers' role in the etiology, prevention and treatment of child anxiety: A review and new model. *Clinical Psychology Review*, 2008; 28, 539–558.

Newman, K., Harrison, L., Dashiff, C. & Davies, S. Relationships between parenting styles and risk behaviors in adolescent health: An integrative literature review. *Revista Latino-Americana de Enfermagem*, 2008; 16(1), 142-50.

Van der Bruggen, C., Stams, G.J.J.M., & Bögels, S.M. Research review: The relation between child and parent anxiety and parental control: A meta-analytic review. *Journal of Child Psychology and Psychiatry*, 2008; 49(12), 1257–1269.

Hoeve, M., Semon Dubas, J., Eichelsheim, V.I., van der Laan, P. et al. The relationship between parenting and delinquency: A meta-analysis. *Journal of Abnormal Child Psychology*, 2009; 27, 749-775.

Jenet, J.I. The socio-emotional effects of non-maternal childcare on children in the USA: A critical review of recent studies. *Early Child Development and Care*, 2009; 179(5), 559-570.

Ryan, S.M., Jorm, A.F. & Lubman, D.I. Parenting factors associated with reduced adolescent alcohol use: A systematic review of longitudinal studies. *Australian and New Zealand Journal of Psychiatry*, 2010; 44, 774-783.

Teubert, D. & Pinquart, M. The association between coparenting and child adjustment: A meta-analysis. *Parenting: Science and Practice*, 2010; 10, 286-307.

## Summary of Results

A total of 11 reviews were identified under the concept of parenting style and practices that included pertinent research evidence regarding mental/emotional health outcomes. Among these, five reviews focused on mental health outcomes in children, three on behavioural outcomes, and the remaining three on elements of socio-emotional factors and adjustment. With respect to mental health outcomes, parenting style was found to be only weakly associated with both depression<sup>14</sup> and anxiety<sup>15,16</sup> in children. Child/youth suicide was found to be associated with parents having weak material and social resources, low social and emotional support, mental health problems and few networks<sup>17</sup>; however, insufficient evidence concerning parenting style existed to inform conclusions about the role of parenting style in youth suicide. Further research is needed in order to establish the effect of parenting style and practices on youth suicide.

The literature concerning risk behaviours in youth seems to show a greater correlation with parenting style and practices, as compared with mental illness symptoms. Findings from the review by Newman et al. (2008), suggest that adolescents raised in authoritative households show consistently higher protective and fewer risk behaviours as compared to adolescents from non-authoritative households; and further, that parenting practices related to warmth, communication and disciplinary practices are important mediators in academic achievement and psychosocial adjustment. In the meta-analysis conducted by Hoeve et al. (2009), parenting style including parental monitoring, psychological control and negative aspects of support such as rejection and hostility were shown to account for up to 11% of the variance in youth delinquency. Additionally, while a limited number of studies focused on parenting behaviour of fathers, it was found that poor support by fathers has a greater effect on youth behaviour than did poor maternal support – particularly for sons. Finally, parenting style and practices were found to be predictive of delayed alcohol use in youth. Factors shown to delay alcohol initiation as summarized by Ryan et al. (2010) include parental modeling, limiting availability of alcohol to the child, parental monitoring, parent-child relationship quality, parental involvement and general communication.

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<sup>14</sup> McLeod, B.D., Weisz, J.R. & Wood, J.J. Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review*, 2007; 27, 986–1003.

<sup>15</sup> McLeod, B.D., Wood, J.J. & Weisz, J.R. Examining the association between parenting and childhood anxiety: A meta-analysis. *Clinical Psychology Review*, 2007; 27, 155–172.

<sup>16</sup> Van der Bruggen, C., Stams, G.J.J.M., & Bögels, S.M. Research review: The relation between child and parent anxiety and parental control: A meta-analytic review. *Journal of Child Psychology and Psychiatry*, 2008; 49(12), 1257–1269.

<sup>17</sup> Eirini, F. Psychological and sociological aspects of parenting and their relation to suicidal behavior. *Archives of Suicide Research*, 2005; 9(4), 373–383.

Findings concerning child/youth adjustment consistently show a link between parenting styles and psychosocial outcomes in children. Positive adjustment in children was correlated with aspects of parental self-efficacy including parental competence and psychosocial functioning<sup>18</sup>. Child psychological adjustment has been further associated with care-giving in terms of co-parenting and non-maternal childcare. Cooperation, agreement and conflict were measured as dimensions of co-parenting, and it was found that co-parenting predicted change in child adjustment and was thus determined to be an important developmental factor. Findings related to social-behavioural adjustment were reviewed by Jenet et al. (2009) to determine the influence of non-maternal childcare. Authors concluded that the average number of weekly hours of non-maternal childcare was the strongest and most consistent predictor of social-behavioral outcomes, such that entry into childcare (i.e. daycare) during the first year and extensive non-maternal childcare throughout early childhood was predictive of less social competence and cooperation, more problem behaviours, negative mood, aggression and conflict.

## **Discussion**

The evidence summarized in the 11 reviews pertaining to parenting styles and practices points to the influential effects of parenting on child development and wellbeing. Specific parenting styles and practices appear to have stronger bearing on behavioural and attachment related outcomes, as compared to mental health outcomes (i.e. depression, anxiety, and suicide) among children and youth. The lack of significant findings linking parenting styles to specific psychopathologies has been attributed to methodological weaknesses in data collection and study design as well as a paucity of empirical evidence available to describe the association. Additionally, the presence of parental mental illness has shown to be more strongly predictive of child mental illness, which is likely to confound the association between parenting behaviours and child mental health and wellbeing.

## **Conclusion**

Overall, a relatively low level of evidence exists to support the selection of specific indicators of parenting style as it relates to child mental/emotional health. Measures with emerging evidence of relevance include: for pre-school and elementary school-aged children, social and behavioural outcomes are indicated by the number of hours in childcare; for children of all ages, the extent of material resources and supports is indicated by parental employment. It is not known whether these or other potentially viable indicators are currently measured within the relevant population in British Columbia.

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<sup>18</sup> Jones, T.L. & Prinz, R.J. Potential roles of parental self-efficacy in parent and child adjustment: A review. *Clinical Psychology Review*, 2005; 25, 341–363.



Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Parenting Style &amp; Practices</b> <i>Pre-school hours in childcare</i>	0 – 5 yrs	-	Moderate	Moderate/ / High	Unknown

## Parental Mental Health Status

# Systematic Review of Parental Mental Health Status Related to Mental/Emotional Health

## Background and Context

The purpose of this review is to find research evidence of an association between parental mental health status and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking parental mental health status. With concerns about genetic and epigenetic transmission of disease, intergenerationally and specifically from parents to children, attention is given to the role of parental mental health as a possible indicator of child mental health and wellbeing.

## Methodology and Provisional Results

### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

### Electronic Search Keywords

(MM "Parental Mental Health" OR MM "Parental Depression" OR MH "Parents+")

## AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary

search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>19</sup> and Web of Science<sup>20</sup> databases for reviews using key terms such as **(parental mental health) AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(parental mental health) AND children AND mental health**. Finally, as the most recent systematic reviews of the association of parental mental health status with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 145 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between parental mental health status and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 15.

#### Primary Exclusion

The abstracts and/or full versions of the 15 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link parental mental health status with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 6 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

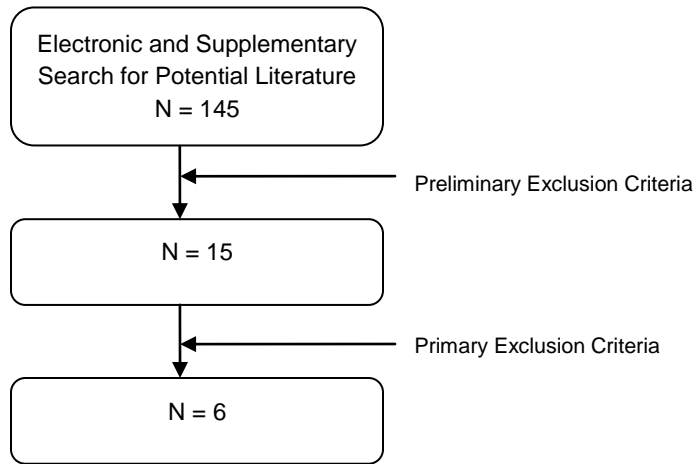
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<sup>19</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as 'birth-17 years'.

<sup>20</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.

## Literature Review Volume Report

**Dimension:** Mental / Emotional Health **Concept:** Parental Mental Health Status



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Parental Mental Health Status*

	<b>Title of Review</b>	<b>Lead Author</b>	<b>Year</b>	<b>Journal</b>	<b>Journal Impact Factor (2009)</b>	<b>Year Range of Studies</b>	<b>No. of Studies</b>
1	Change in child psychopathology with improvement in parental depression: A systematic review	GUnlicks & Weissman.	2008	Adolescent Psychiatry	n/a	1986-2007	10
2	Impact of antenatal and postpartum maternal mental illness: How are the children?	Brand & Brennan	2009	Clinical Obstetrics and Gynecology	n/a	2001-2008	17
3	Parent Depression and Child Anxiety: An Overview of the Literature with Clinical Implications	Colletti et al.	2009	Child Youth Care Forum	n/a	-	-
4	The impact of maternal psychopathology on child–mother attachment	Wan & Green	2009	Archives of Womens Mental Health	n/a	-	-
5	Postpartum depression effects on early interactions, parenting, and safety practices: A review	Field, T.	2010	Infant Behavior & Development	1.341	-	-
6	Effects of paternal depression on fathers' parenting behaviors: A meta-analytic review	Wilson & Durbin	2010	Clinical Psychology Review	4.901	1988-2008	28

## Detailed Results

For the 6 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

<b>Parental Mental Health Status and Mental/Emotional Health</b> <i>Summary Table of Reviews</i>			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Gunlicks &amp; Weissman (2008)</b>	Change in child psychopathology with improvement in parental depression: A systematic review	10	Systematically reviewed current research evidence of associations between improvement in parents' depression and their children's psychopathology. There is some evidence of associations between successful treatment of parents' depression and improvement in children's symptoms and functioning, but treatment of postpartum depression may not be sufficient for improving cognitive development, attachment, and temperament in infants and toddlers.
<b>Brand &amp; Brennan (2009)</b>	Impact of antenatal and postpartum maternal mental illness: How are the children?	17	<ul style="list-style-type: none"> <li>- Findings reveal that perinatal exposure to maternal depression and perinatal exposure to maternal stress/anxiety have differential impacts on child outcomes.</li> <li>- The strongest and most consistent negative effects on child outcomes were associated with maternal prenatal anxiety and stress. Timing of exposure across trimester has yielded inconsistent results.</li> <li>- There is some suggestion that postpartum anxiety may have a negative impact on child behavioral outcomes. The findings suggest that exposure during the postpartum period might have limited predictive ability on its own. It seems, instead, that continued exposure to maternal symptoms across infancy and early childhood might be a stronger predictor of child outcome than exposure occurring only during the postpartum period. Parenting factors, exposure to stressful life events, and other concomitant risk factors are important predictors for long-term outcomes in these children.</li> <li>- A striking finding was that perinatal exposure to maternal disorders had a stronger effect on boys than on girls; however, girls of depressed mothers may be at a higher risk for internalizing disorders.</li> </ul>
<b>Colletti et al. (2009)</b>	Parent Depression and Child Anxiety: An Overview of the Literature with Clinical Implications	-	Existing data suggest there may be a link between parent depression and child anxiety. Although the extant literature is limited, both cross-sectional and retrospective studies indicate a link between parental depression and child anxiety. When comparisons have been made between children of parents with current or past clinical depression and children of never-depressed parents, the former group has been approximately 2–6 times more likely to have an anxiety disorder. However, most but not all of the existing cross-sectional or longitudinal studies demonstrate that offspring of depressed parents are at increased risk for developing anxiety disorders.
<b>Wan &amp; Green (2009)</b>	The impact of maternal psychopathology on child–mother attachment	-	- This review considers evidence for the impact of maternal psychopathology on the child's attachment to the mother, and the role of this in mediating the known transmission of developmental and clinical risk to children. The studies reviewed focus on mothers with major depressive disorder and psychotic disorder. A number of studies (mainly of mothers with depression) demonstrate an association between insecure/disorganised infant attachments and severe maternal psychopathology, whether chronic or current, in the presence of comorbid disorder, maternal insecure or unresolved attachment state of mind, trauma/loss, or low parenting sensitivity. Whether such effects last into middle childhood, however, is unclear. Some evidence suggests that attachment may have a role in mediating the intergenerational

## Parental Mental Health Status and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			<p>transmission of internalizing and other problems in this group, although the presence of co-occurring contextual risk factors may account for the variability in findings.</p> <p>- This review highlights that most children whose mothers have mental health problems do not develop lasting attachment difficulties. Indeed, the deterministic view that maternal disorder necessarily leads to disorganised/insecure attachment is not only empirically unfounded but also stigmatises these parents, and impedes help-seeking in those cases where attachment is a concern. The evidence is more complex, and suggests that, in the context of prolonged or severe maternal psychopathology, and especially when other associated risk factors are present (e.g. parent trauma or unresolved attachment status), children are vulnerable to developing insecure or disorganised attachments. However, in these circumstances, those children who still go on to develop a secure attachment appear to be protected from the developmental outcomes often associated with having a parent with psychopathology. Thus, altering attachment may be an important way to enhance childhood resilience.</p>
<b>Field, T. (2010)</b>	Postpartum depression effects on early interactions, parenting, and safety practices: A review	-	<p>Studies are reviewed from the last decade on postpartum depression effects on early interactions, parenting, safety practices and on early interventions. The interaction disturbances of depressed mothers and their infants appear to be universal, across different cultures and socioeconomic status groups and, include less sensitivity of the mothers and responsivity of the infants. Several caregiving activities also appear to be compromised by postpartum depression including feeding practices, most especially breastfeeding, sleep routines and well-child visits, vaccinations and safety practices. These data highlight the need for universal screening of maternal and paternal depression during the postpartum period.</p>
<b>Wilson &amp; Durbin (2010)</b>	Effects of paternal depression on fathers' parenting behaviors: A meta-analytic review	28	<p>One possible mechanism for the familial transmission of depression is through its negative effects on parenting and the parent-child relationship. Although previous research indicated that depression is associated with parenting impairment for mothers, no quantitative synthesis of the empirical literature on the effects of paternal depression on fathers' parenting has been conducted. The present meta-analysis examined the effects of paternal depression on fathers' positive and negative parenting behaviors. The mean effect sizes indicated that paternal depression has significant, though small, effects on parenting, with depressed fathers demonstrating decreased positive and increased negative parenting behaviors. Several moderating effects were found, including child and father age, and sample race/ethnicity, and effects were comparable for studies that used self-report measures and observational methods to assess fathers' parenting behaviours. Moreover, effect sizes for the relationship between paternal depression and fathers' parenting behaviours were comparable to those found for mothers. The present findings indicate that paternal depression has a significant and deleterious effect on parenting behaviors by fathers.</p>

### Bibliography for Summary Table

Gunlicks, M.L. & Weissman, M.M. Change in child psychopathology with improvement in parental depression: A systematic review. *Adolescent Psychiatry*, 2008; 47(4), 379-389.

Brand, S.R. & Brennan, P.A. Impact of antenatal and postpartum maternal mental illness: How are the children? *Clinical Obstetrics and Gynecology*, 2009; 52(3), 441-455.

Colletti, C.J.M., Garai, E., Rakow, A., McKee, L., Fear, J.M. & Compas, B.E. Parent Depression and Child Anxiety: An Overview of the Literature with Clinical Implications. *Child Youth Care Forum*, 2009; 38, 151-160.

Wan, M.W. & Green, J. The impact of maternal psychopathology on child–mother attachment. *Archives of Womens Mental Health*, 2009; 12, 123-134.

Field, T. Postpartum depression effects on early interactions, parenting, and safety practices: A review. *Infant Behavior & Development*, 2010; 33, 1-6.

Wilson, S. & Durbin, C.E. Effects of paternal depression on fathers' parenting behaviors: A meta-analytic review. *Clinical Psychology Review*, 2010; 30, 167-180



## **Summary of Results**

A total of six reviews were identified under the concept of parental mental health status that included pertinent research evidence regarding mental/emotional health outcomes. All six studies examined literature addressing the relationship between psychopathology among parents and the associated mental/emotional health of their children. Collectively, these reviews considered a broad range of potential disorders among parents. The most commonly cited results involved findings associated with depression (major depressive disorders), post partum and perinatal depression, anxiety disorders, and stress among parents. In addition, specific research was included that addressed correlates of psychopathology among mothers and fathers separately, psychotic disorders among parents, and the temporal significance of the presence of parental psychopathology in different developmental periods (e.g., post partum, infancy, childhood).

The available results suggest that, in many instances, the presence of psychopathology among parents does not adversely impact the mental/emotional health of children. However, when considering large groups of children there is an epidemiologic trend linking parental psychopathology with compromised mental/emotional health of offspring. Psychopathology among both mothers and fathers is relevant in this regard. Evidence suggests that psychopathology among parents can have a deleterious effect on parenting behaviours, which in turn mediate poor attachment relationships and compromised cognitive development.

Particular risks are associated with perinatal exposure to maternal anxiety or depression. The consequences of exposure to specific disorders appear to differ. A relatively well-known literature confirms the adverse effects of exposure to perinatal depression. Additional research strongly indicates adverse effects from perinatal exposure to anxiety and stress. The relevance of exposure to psychopathology between trimesters is unclear. However, adverse consequences for children are associated with prolonged exposure to parental psychopathology in infancy and early childhood.

Even previous psychopathology among parents is associated with an increased risk of psychiatric distress among children, particularly childhood anxiety. Treatment of parental psychopathology has the promise of reducing adverse effects on children.

## **Discussion**

Child mental/emotional health has a complex relationship with parental psychopathology, including learned, genotypic, and epigenetic components. Psychopathology among parents is a risk factor for mental health problems among children. Risks to children are evident even when parental psychopathology is historical. However, the effects of parental psychopathology are greater when they are clearly proximate to the child's development, whether perinatally or in infancy and childhood. One of the apparent pathways of influence exerted by parental psychopathology is through the impact on parenting style and attachment.

## Conclusion

The extant research repeatedly produces calls for universal screening for mental health symptoms among parents during pregnancy and following delivery. Such screening is a gateway to case finding and the delivery of indicated interventions. We echo this recommendation, and recommend consideration of comprehensive screening, to include the assessment of psychopathology. We believe that appropriate indicators of professional screening/assessment are available through administrative data bases.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Parental Mental Health Status</b> <i>Universal screening post natal</i>	Prenatal – 1 yr	-	Moderate	Moderate	HA/MHS

## Positive Mental Health Theme

### Emotional Health (self rated)

#### Systematic Review of Emotional Health Related to Mental/Emotional Health

##### Background and Context

The purpose of this review is to find research evidence of an association between emotional health and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for measuring and tracking emotional health. The concept of emotional health is understood to include emotional regulation and emotional responses to a range of circumstances. Emotional health has important implications for individual coping capacities and psychosocial functioning which contribute meaningfully to quality of life. As such, emotional health is examined here as a candidate indicator of child/youth mental/emotional health.

##### Methodology and Provisional Results

###### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

###### Electronic Search Keywords

(MH "Emotions+" OR MH "Emotional Intelligence+" OR MM "Affective Symptoms" OR MM "Expressed Emotion")

###### AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>21</sup> and Web of Science<sup>22</sup> databases for reviews using key terms such as **(emotions OR emotional intelligence OR emotional regulation) AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(emotions OR emotional intelligence OR emotional regulation) AND children AND mental health**. Finally, as the most recent systematic reviews of the association of emotional health with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 638 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between emotional health and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 33.

#### Primary Exclusion

The abstracts and/or full versions of the 33 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link emotional health with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 4 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

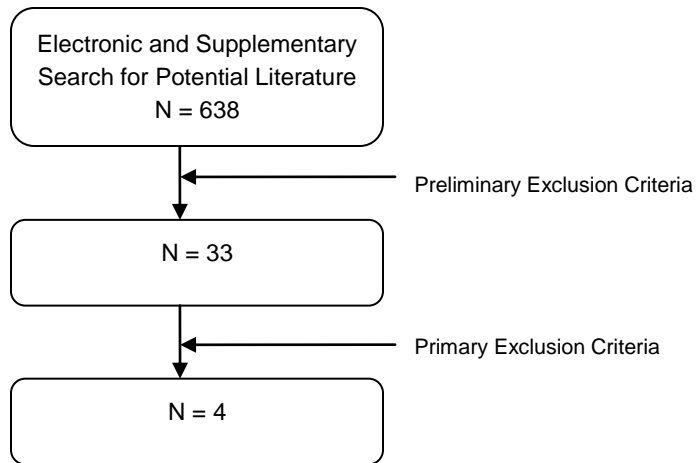
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<sup>21</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as 'birth-17 years'.

<sup>22</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.

## Literature Review Volume Report

***Dimension:*** Mental / Emotional Health ***Concept:*** Emotional Health



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Emotional Health*

	<u>Title of Review</u>	<u>Lead Author</u>	<u>Year</u>	<u>Journal</u>	<u>Journal Impact Factor (2009)</u>	<u>Year Range of Studies</u>	<u>No. of Studies</u>
1	Emotion regulation in children and adolescents	Zeman et al.	2006	Developmental and Behavioral Pediatrics	n/a	-	-
2	The influence of emotion-focused rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review	Rood et al.	2009	Clinical Psychology Review	4.901	1996-2009	17
3	Emotion-related self-regulation and its relation to children's maladjustment	Eisenberg et al.	2010	Annual Review of Clinical Psychology	9.613	-	-
4	Emotion knowledge, social competence, and behavior problems in childhood and adolescence: A meta-analytic review	Trentacosta et al.	2010	Social Development	1.723	1971-2006	83

## Detailed Results

For the 4 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Emotional Health and Mental/Emotional Health <i>Summary Table of Reviews</i>			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Zeman et al. (2006)</b>	Emotion regulation in children and adolescents	-	This review discusses the literature on emotion regulation (ER) in childhood and adolescence. It appears that different types of ER deficits characterize children with internalizing versus externalizing psychological difficulties: children with depression, anxiety, or bulimia nervosa tend to display poor emotional awareness and emotion understanding, low self-efficacy regarding their ability to regulate their emotions, an impoverished emotion vocabulary, difficulties expressing and coping with anger experience, and inappropriate expression of sadness. In contrast, individuals diagnosed with an externalizing disorder tend to exhibit difficulties with the undercontrol of emotional arousal such that they appear to experience events with high emotional intensity, have poor anger inhibitory skills, overcontrol the expression of sadness, produce more facial expressions of anger, and are highly influenced by others' emotional reactions.
<b>Rood et al. (2009)</b>	The influence of emotion-focused rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review	17	This review examined evidence for some core predictions of the response styles theory (RST) concerning the relation between response styles and symptoms of depression and gender differences in the use of response styles in non-clinical children and adolescents. Results indicated that stable and significant effect sizes were found for rumination being associated with concurrent and future levels of depression. When controlling for baseline levels of depression, effect sizes for rumination and distraction were not stable, indicating that these findings should be interpreted with considerable caution. Finally, significant and stable effect sizes for gender differences in response styles were found only for rumination among adolescents. Taken together, the findings partly support the predictions of the response styles theory examined in this meta-analysis and may implicate that rumination is a cognitive vulnerability factor for depressive symptoms among adolescents.
<b>Eisenberg et al. (2010)</b>	Emotion-related self-regulation and its relation to children's maladjustment	-	In this review, the distinction between effortful self-regulatory processes and those that are somewhat less voluntary is discussed. Emotion-related selfregulation develops rapidly in the early years of life and improves more slowly into adulthood. Individual differences in children's selfregulation are fairly stable after the first year or two of life. Such individual differences are inversely related to at least some types of externalizing problems. Findings for internalizing problems are less consistent and robust, although emotion-related self-regulation appears to be inversely related to internalizing problems after the early years. Self-regulatory capacities have been related to both genetic and environmental factors and their interaction. Some interventions designed to foster self-regulation and, hence, reduce maladjustment, have proved to be at least partially effective.
<b>Trentacosta et al. (2010)</b>	Emotion knowledge, social competence, and behavior problems in childhood and adolescence: A meta-analytic review	83	The magnitude of the relation between discrete emotion knowledge and three of its most commonly studied correlates in childhood and adolescence is examined: social competence, internalizing problems, and externalizing problems. Emotion knowledge demonstrated small to medium-sized relations with each correlate. Significant moderators of effect size for relations between emotion knowledge and externalizing

## Emotional Health and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			problems included sample recruitment, sample age, and the source of externalizing problems ratings. Moderators of effect size were not found for emotion knowledge and social competence, and the effect sizes across samples for emotion knowledge and internalizing problems were homogeneous. Results highlight the relatively consistent yet modest relations between emotion knowledge and its correlates. Thus, this meta-analytic review suggests that emotion knowledge is a consistent correlate of multiple social and behavioral outcomes, and the robust and statistically significant effect sizes across a range of correlates provide support for instruction in core emotion knowledge skills as a component of prevention programs to promote social competence or prevent behavior problems.

### Bibliography for Summary Table

Zeman, J., Cassano, M., Perry-Parrish, C. & Stegall, S. Emotion regulation in children and adolescents. *Developmental and Behavioral Pediatrics*, 2006; 27(2), 155-168.

Rood, L., Roelofs, J., Bögels, S.M., Nolen-Hoeksema, S. & Schouten, E. The influence of emotion-focused rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review. *Clinical Psychology Review*, 2009; 29, 607–616.

Eisenberg, N., Spinrad, T.L. & Eggum, N.D. Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology*, 2010; 6, 495–525.

Trentacosta, C. & Fine, S.E. Emotion knowledge, social competence, and behavior problems in childhood and adolescence: A meta-analytic review. *Social Development*, 2009; 19(1), 1-29.



## Summary of Results

A total of four reviews were identified under the concept of emotional health that included pertinent research evidence regarding mental/emotional health. All four reviews examined the relationship between emotional responses in children/adolescents, with individual reviews focusing on aspects of emotional regulation, emotion-focused rumination, and emotional knowledge. The manifestation of deficits in emotional regulation was associated with tendencies toward behavioural and mental illness outcomes defined along the dimensions of internalizing or externalizing psychological difficulties. Emotional self-regulation was a common theme among all reviews, with particular focus on the relationship between self-regulation and specific psychopathologies, implications for responding to stressful situations, and modifiability through intervention.

Among children with existing psychopathologies, emotional regulation deficits appear to follow a predictable trajectory. Children with internalizing disorders tend to be those with depression, anxiety or bulimia nervosa, who show poor emotional awareness and understanding, low self-efficacy in their ability to regulate their own emotions, impoverished emotional vocabulary, inappropriate expressions of sadness, and challenges related to appropriately expressing and coping with anger<sup>23</sup>. In contrast, those with externalizing disorders tend to experience events with high emotional intensity, display poor inhibitory control, over-control expressions of sadness, exhibit more facial expressions of anger and are highly influenced by other's emotional reactions. Further to this, and with specific reference to depression, rumination as a cognitive style was shown by Rood et al. (2009) to be a predictive factor for vulnerability to depressive symptoms.

Emotional regulation requires emotional knowledge, which has been consistently shown to be correlated with multiple social and behavioural outcomes. Greater emotional knowledge equates to greater social competence, and helps to prevent behavioural problems<sup>24</sup>. While individual self-regulation may be sensitive to changes over time, Eisenberg, et al, (2010) established in their review that individual differences in children's self-regulation tend to be fairly stable after the first year or two of life. Self-regulatory capacity is believed to be related to both genetic and environmental factors, and this capacity develops very quickly in the first few years of life. Despite the relative stability of emotional self-regulatory capacity, certain interventions intended to foster improved self-regulation have shown to be effective<sup>25</sup>. The ability to identify maladaptive emotional regulation at an early stage

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<sup>23</sup> Zeman, J., Cassano, M., Perry-Parrish, C. & Stegall, S. Emotion regulation in children and adolescents. *Developmental and Behavioral Pediatrics*, 2006; 27(2), 155-168.

<sup>24</sup> Trentacosta, C. & Fine, S.E. Emotion knowledge, social competence, and behavior problems in childhood and adolescence: A meta-analytic review. *Social Development*, 2009; 19(1), 1-29.

<sup>25</sup> Eisenberg, N., Spinrad, T.L. & Eggum, N.D. Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology*, 2010; 6, 495-525.

permits early intervention to help decrease the negative consequences for children with emotional self-regulation deficits.

## Discussion

Emotional health in children – particularly in terms of emotional self-regulation – is implicated in both contributing to and resulting from mental illness. The body of evidence concerning emotional health in children and adolescents points to the importance of early identification of maladaptive emotional regulation, development of emotional knowledge, and adaptive coping mechanisms as a means of promoting positive emotional health. As emotional self-regulatory skills are established within the first few years of life, it may be possible to intervene at the first sign of problematic emotional regulation (i.e. behavioural inhibition, irritable mood, high/low emotional reactivity, anger, aggression, etc.) and thus prevent lasting consequences of emotional dysregulation.

As definitions and conceptualizations of emotional health, self-regulation, and knowledge are highly variable across studies and subject to interpretation, it becomes difficult to arrive at definitive conclusions, and establish causal associations regarding the specific role of emotional health in overall mental/emotional wellbeing among children. Furthermore, assessment of emotion knowledge and interpretation of behaviours are highly subjective, employ heterogeneous measurement tools, and generally rely upon self-reported data.

## Conclusion

The empirical literature on emotional health gives emphasis to the area of emotional self-regulation, which is relatively stable following the first years of development. Nevertheless, emotional self-regulation is an important factor in relation to the ongoing mental/emotional health of children and adolescents. Rather than relying on direct self-report, it may be preferable to consider the importance of professional screening and, where necessary, intervention concerning the emotional self-regulation of infants. This may be achieved by examining the percentage of infants examined by qualified professionals (e.g., pediatrician) within the first years of life.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
Emotional Health (self rated) (n/a)	0 – 18 yrs	-	Low	Low	Unknown

## Self-Esteem

### Systematic Review of Self Esteem Related to Mental/Emotional Health

#### Background and Context

Self esteem refers to a person's subjectively-held appraisal of their worth, efficacy, and effectiveness. The purpose of this review is to find research evidence of an association between self esteem and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for assessing and tracking self esteem.

#### Methodology and Provisional Results

##### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

##### Electronic Search Keywords

(MM "Self Concept" OR MM "Self-Esteem")

#### AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

It was determined from the search results (examining the 41 located papers) that there were no suitable reviews for this concept, so the decision was made to execute a "Level B" search process involving individual studies.

##### Study Search Process

A second electronic search was conducted for individual studies in this area. The database used was again Medline with Fulltext (PubMed), with the following limits:

*Date:* 2000-present *Language:* English *Subjects:* Human *Age:* 0-18 years\*

*Type of Article:* Clinical Trial, Randomized Controlled Trial, Controlled Clinical Trial

The same search terms were used as in the review search process outlined previously. There were 93 studies identified in this search process.

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

In addition to the above search method, the following searches were conducted:

- PubMed search using “Related Citations” link
- A search of PsycINFO<sup>26</sup> and Web of Science<sup>27</sup> databases using key terms such as **self esteem AND mental health**.
- A scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as **self esteem AND children AND mental health**
- Hand-searching bibliographies of key papers
- Checking for study updates (by author)

Taken together, the various search processes returned 299 articles for consideration.

#### Preliminary Exclusion

The articles were scanned *by title* by two reviewers working individually, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between self esteem and mental/emotional health outcome(s), or if it was not about children, then it was excluded. When there was disagreement between the reviewers, the article in question was examined in more detail until a consensus was reached.

After completing this first exclusion process, the list of articles was reduced to 22.

#### Primary Exclusion

The full articles were then reviewed, with articles not pertinent to the research topic being excluded; specifically, if the article did not link self esteem with mental/emotional health

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<sup>26</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsychINFO approximates children as ‘birth-17 years’.

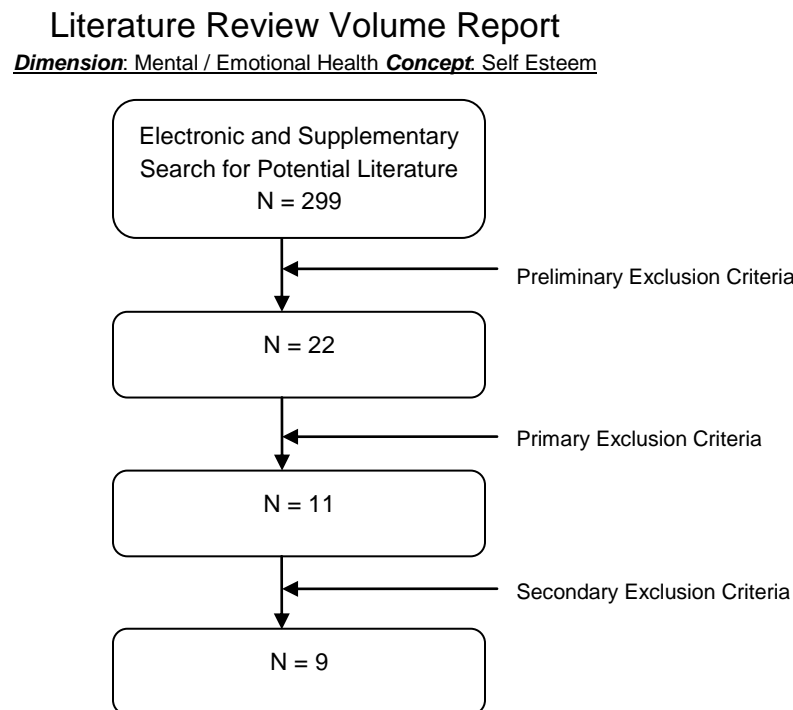
<sup>27</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, ‘child\*’, ‘adolescen\*’ and ‘youth’ were included in the search definitions.

outcome(s), it was excluded. Also excluded was any study that focused on a specific subgroup of children, such as those with learning disabilities, African-Americans, or studies that did not take place in Western developed countries, where there would be a limitation to the generalizability of results across the whole pediatric population in a jurisdiction such as British Columbia. If there was uncertainty as to whether an article should be excluded, the reviewers discussed the matter further to reach a consensus.

There were 11 reviews remaining in the list following the primary exclusion.

#### Secondary Exclusion

Studies that were deemed to be of lesser quality or usefulness were excluded. This secondary exclusion step yielded a final total of 9 studies, as reflected in the following Volume Report and subsequent table of results.



## Results After Applying Secondary Exclusion: Studies

Domain: *Mental/Emotional Health*

Concept: *Self Esteem*

	Title of Study	Author(s)	Year	Journal	Journal Impact		Sample Size	Sample Population	Location	Conflict of Interest
					Factor (2009)	Type of Study				
1	Does low self-esteem predict health compromising behaviours among adolescents?	McGee & Williams	2000	Journal of Adolescence	1.802	Longitudinal cohort study	1,037	New Zealand birth cohort (individuals born between April 1972 and March 1973)	New Zealand	None declared
2	Risk, compensatory, vulnerability, and protective factors influencing mental health in adolescence	Steinhausen & Winkler Metzke	2001	Journal of Youth and Adolescence	1.383	Cross-sectional study	1,110	Swiss students aged 10-17 years	Switzerland	None declared
3	Getting by with a little help from self and others: Self-esteem and social support as resources during early adolescence	DuBois et al.	2002	Developmental Psychology	3.555	Longitudinal cohort study	350	Youth in grades 5, 6, 7 and 8 from a Midwestern city	United States	None declared
4	Gender differences in depressive symptoms during adolescence: Role of gender-typed characteristics, self-esteem, body image, stressful life events, and pubertal status	Marcotte et al.	2002	Journal of Emotional and Behavioural Disorders	1.676	Cross-sectional study	547	French-speaking adolescents aged 11-18 years	Canada	None declared
5	Suicidal ideation and attempts in adolescents: Associations with depression and six domains of self-esteem	Wild et al.	2004	Journal of Adolescence	1.802	Cross-sectional study	939	South African adolescents, Grade 8 and Grade 11 students (aged 12-24 years)	South Africa	None declared
6	The impact of hope, self-esteem, and attributional style on adolescents' school grades and emotional well-being: A longitudinal study	Ciarrochi et al.	2007	Journal of Research in Personality	1.741	Longitudinal cohort study	784	Australian high school students (average age 12)	Australia	None declared
7	Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence	Lee & Hankin	2009	Journal of Clinical Child & Adolescent Psychology	2.910	Longitudinal cohort study	350	Adolescents aged 11-17 years	United States	None declared
8	The association between stress and emotional states in adolescents: The role of gender and self-esteem	Moksnes et al.	2010	Personality and Individual Differences	1.878	Cross-sectional study	1,508	Norwegian adolescents aged 13-18 years; 769 girls, 735 boys	Norway	None declared
9	Peer aggression and mental health problems	Ybrant & Armelius	2010	School Psychology International	0.446	Cross-sectional study	204	Swedish adolescents aged 12-16 years	Sweden	None declared

## Detailed Results

For the 9 studies identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Self Esteem and Mental/Emotional Health Summary Table of Studies							
Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
<b>McGee &amp; Williams (2000)</b>	To examine the predictive association between global (generalized feelings of self-worth) and academic self-esteem of children aged 9 to 13 years, as well as a variety of health compromising behaviours at age 15	Follow up on a cohort of New Zealand individuals first enrolled in the DMHDS study at age 3, 1972-1973	New Zealand  N=1,037 children born between April 1972 and March 1973 –  428 girls; 442 boys	Longitudinal cohort study  Follow up every two years.	Prevalence and relationships among self esteem and health compromising behaviours including: - cigarette smoking - alcohol use - cannabis use - problem eating behaviours - early sexual activity - suicidal ideation	- Significant linear trends indicate an increase in the prevalence of problem eating, sexual intercourse by age 15, and suicidal ideation across decreasing level of global self esteem - Earlier levels of self-esteem were unrelated to later substance use and early sexual activity.	- Levels of global self esteem significantly predicted adolescent reports of problem eating, suicidal ideation, and multiple health compromising behaviours.
<b>Steinhausen &amp; Winkler Metzke (2001)</b>	To determine the relative contribution to and function of general risk factors for mental disorders as well as compensatory, vulnerability, and protective factors in preadolescent and adolescent students	Self report measures related to the impact of life events and 14 personality variables and psychosocial factors in a general population sample of Swiss students	Switzerland  N=1,110 10-17 year old students  529 girls; 581 boys	Cross-sectional study	- Association of the impact of life events (stressor variable) with personality variables and psychosocial factors including self-related cognitions (self-esteem and self-awareness), coping capacities, perceived parental behaviour, school environment, and social network	- A high degree of self-awareness was shown to be a risk factor for contributing to both internalizing and externalizing disorders - Self-esteem and acceptance by parents were shown to serve as compensatory factors with regard to internalizing	- Two compensatory factors for internalizing disorders include self-esteem and acceptance by parents. - The question remains whether the various factors causally lead to mental problems or to which extent they reflect or result from mental problems
<b>Dubois et al. (2002)</b>	To assess both overall levels and balance in peer- versus	Study measures assessed youth social support, self-esteem, and	United States  350 youth from a	Longitudinal cohort study Data collected over two years	- Intercorrelations among measures of social support, self-esteem, and adjustment at each time	- Lack of balance in social support and self-esteem, and stronger support and esteem from peer-oriented sources predicted greater	- Social support and self-esteem are resources promoting favorable adjustment in early

## Self Esteem and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	adult-oriented sources for social support and self-esteem	internalizing and externalizing problems. Each construct was assessed separately using both youth- and parent-report data	medium-sized Midwestern city aged between 10-15 years  180 girls; 170 boys	in 6-month intervals	point, as well as stability correlations over time for each measure.	levels and rates of growth in behavioral problems.	adolescence. - Self esteem has a significant role in mediating positive contributions of social support to the emotional and behavioral adjustment of young adolescents.
<b>Marcotte et al. (2002)</b>	To explore differences in rates of depressive symptoms in boys and girls during adolescence in relation to gender-typed characteristics, body image, self-esteem, stressful life events, and pubertal status	Self-administered questionnaire measuring depressive symptoms, characteristics related to gender roles, pubertal status, stressful events, body image, self-esteem	Quebec, Canada  547 French-speaking adolescents between the ages of 11-18 years  279 girls; 268 boys	Cross-sectional study	- Associations of self esteem, body image, stressful life events and pubertal status with depressive symptoms among boys and girls during adolescence, and during the transition to high school	- Depression scores significantly and negatively correlated with scores on body image and self esteem, and positively with scores on negative stressful life events for both genders. - Gender was found to be a significant predictor of depression scores, body image, negative stressful life events and self esteem - Pubertal status was found to be a significant predictor of depression scores, self esteem, body image and negative stressful life events.	- Body image, self esteem and negative stressful life events mediate the relationship between gender and depressive symptoms during adolescence. - Body image, self esteem and negative stressful life events mediate the relationship between pubertal status and depressive symptoms during the transition to high school.
<b>Wild et al. (2004)</b>	To disentangle the influence of depression and self-esteem on suicidal behaviour in adolescence.	Self-administered questionnaires (translated from English into Xhosa and Afrikaans, and back to English) assessing suicidal ideation and behaviour, depression, and self-esteem with respect to family, peers, school, sports/athletics, body image and global self-worth.	South Africa  939 public school students in Grades 8 and 11 in Cape Town metropolitan area	Cross-sectional study	- Relationships between suicidal thoughts and attempts with depression and self-esteem among adolescents.	- Depression and low self-esteem in the family context were independently associated with suicide ideation and attempts. - Depression was the strongest correlate of suicide ideation and attempts, and explained a large part of the variance in the association between self-esteem and suicidal behaviour. - No evidence that the relationship between depression and suicidality differs for adolescents high and low in self-esteem.	- Supports previous research indicating that both depression and low self-esteem are statistically significant correlates of suicidality in adolescents. - Supports the use of measures that distinguish between suicidal ideation and suicide attempts between different domains of self esteem.
<b>Ciarrochi et al. (2007)</b>	To examine the distinctiveness	Self-administered questionnaires	Australia	Longitudinal design	- Capacity of self esteem, hope and positive	- Hope was a predictor of positive affect and the best predictor of	- Self esteem predicted decreases in sadness and



## Self Esteem and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	of three "positive thinking" variables (self-esteem, trait hope, and positive attributional style) in predicting future high school grades, teacher-rated adjustment, and students' reports of their affective states	collected over two time periods measuring verbal and numerical ability, positive thinking, and indices of emotional well-being (positive affect, sadness, fear, and hostility), as well as measures of hope, self-esteem, and emotional well-being	784 high school students  382 males; 394 females;  Mean age at Time 1= 12.30 yr, SD = 0.49	Self-reported measures collected at two time periods: Time 1, in the middle of the first year of high school, Time 2, one year later	attributional style to predict distinctive variance in academic achievement, psychological adjustment, and self-rated well-being.	grades. - Negative attributional style was the best predictor of increases in hostility and fear. - Low self-esteem was the best predictor of increases in sadness. - Sadness at Time 1 predicted decreases in self-esteem at Time 2.	increases in activated positive affect; hope predicted increases in activated positive affect; and positive attributional style was predictive of decreases in fear and hostility.
<b>Lee &amp; Hankin (2009)</b>	To examine insecure attachment dimensions, dysfunctional attitudes, and low self-esteem as prospective predictors of depressive and anxiety symptoms in a sample of adolescents	Self-report measures of attachment, dysfunctional attitudes, self-esteem, and symptoms of depression and anxiety collected in four time periods	United States  350 youth in grades 6-10 from Chicago area schools between the ages of 11-17 years	Longitudinal design  4-wave prospective study	- To test if dysfunctional attitudes and lowered self-esteem would mediate the longitudinal association between insecure attachment and prospective increases in depressive and anxiety symptoms after controlling for initial symptoms and temporally preceding dysfunctional attitudes and self-esteem	- Results suggest the cognitive mediators (dysfunctional attitudes and low self-esteem) accounted for most of the association between baseline anxious attachment and prospective increases in both depressive and anxiety symptoms - but not the link between avoidant attachment and later internalizing symptoms.	- These cognitive mediators (dysfunctional attitudes and low self-esteem) be related to general emotional distress or internalizing symptoms, at least among adolescents.
<b>Moksnes et al. (2010)</b>	To investigate gender differences on domains of stress, self-esteem and emotional states (depression and anxiety) as well as the association	Self-administered questionnaire measuring adolescent stress, state anxiety, state depression and self esteem using validated instruments and non-clinical depressive scales	Norway  N=1508 students aged 13-18 years  769 girls; 735 boys	Cross-sectional study	- Association between the predictor variables of stress and self-esteem and the outcome of state depression and anxiety  - Assess the potential moderation effect of self-esteem and gender on the relationship between each of the stress domains and the outcome of state	- Boys scored significantly higher on self-esteem. - A strong, inverse association was found between self-esteem and emotional states. - A weak moderation effect of self-esteem was found on the association between stress related to peer pressure, romantic relationships, school performance and emotional states.	- Identifies the potential protective role of self-esteem in relation to adolescents' emotional outcomes.

## Self Esteem and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	between stress, self-esteem and emotional states among adolescents				depression and anxiety.		
<b>Ybrandt &amp; Armelius (2010)</b>	To examine whether self-esteem mediates the association between peer aggression and internalizing and externalizing problems in adolescents	Self-report measures; self-esteem was assessed with 'I think I am' (ITIA) and internalizing and externalizing problems with Youth Self-Report (YSR)	Sweden  204 adolescents aged 12-16 years	Cross-sectional study	- Relationships between self esteem with mental health problems and peer aggression.	-Self-esteem played a more important role for internalizing mental health problems compared to externalizing problems. - Internalizing problems in peer aggressors could be understood as problems with low self-esteem, while internalizing problems in peer victims could be understood both as problems with low self esteem and as an effect of being victimized - Externalizing problems in peer aggressors and peer aggressor-victims could be understood as problems with being involved in peer aggression, while the same problems in peer victims could be understood as problems with low self esteem.	- Self-esteem, the adolescents' evaluative assessment of themselves, is one of the factors contributing to the mental health consequences of peer aggression. - Self-esteem had direct effects on mental health problems and also partly or mediated the association between involvement in peer aggression and mental health problems.

### Bibliography for Summary Table

McGee, R & Williams, S. Does low self-esteem predict health compromising behaviours among adolescents? *Journal of Adolescence*, 2000; 23, 569-582.

Steinhausen, H. & Winkler Metzke, C. Risk, compensatory, vulnerability, and protective factors influencing mental health in adolescence. *Journal of Youth and Adolescence*, 2001; 30(3): 259-280.

DuBois, D.L, Burk-Braxton, C., Swensen, L.P. et al. Getting by with a little help from self and others: Self-esteem and social support as resources during early adolescence. *Developmental Psychology*, 2002; 38(5): 822-839.

Marcotte, D., Fortin, L., Potvin, P. & Papillon, M. Gender differences in depressive symptoms during adolescence: Role of gender-typed characteristics, self-esteem, body image, stressful life events, and pubertal status. *Journal of Emotional and Behavioural Disorders*, 2002; 10(1): 29-42.

Wild, L.G, Flisher, A.J., Lombard, C. Suicidal ideation and attempts in adolescents: Associations with depression and six domains of self-esteem. *Journal of Adolescence*, 2004; 27: 611-24.

Ciarrochi, J., Heaven P.C.L. & Davies, F. The impact of hope, self-esteem, and attributional style on adolescents' school grades and emotional well-being: A longitudinal study. *Journal of Research in Personality*, 2007; 41: 1161-1178.

Lee, A. & Hankin, B.L. Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. *Journal of Clinical Child & Adolescent Psychology*, 2009; 38(2), 219–231.

Moksnes, U.K., Moljord, I.E.O., Espnes, G.A. & Byrne, D.G. The association between stress and emotional states in adolescents: The role of gender and self-esteem. *Personality and Individual Differences*, 2010; 49: 430-435.

Ybrandt, H. & Armelius, K. Peer aggression and mental health problems. *School Psychology International*, 2010; 31(2): 146–163.

## Summary of Results

A total of nine studies were identified under the concept of self-esteem that included pertinent research evidence regarding mental/emotional health outcomes among children and youth. Among these studies, four involved longitudinal cohort designs, while the remaining five were cross-sectional in design. The majority of studies relied upon self-report measures that were either self-administered by study participants or interviewer administered, using a combination of psychometrically validated and purpose developed assessment measures. Outcome measures varied across studies including measures of association between self-esteem with depression, social support, psychosocial factors, coping capacities, perceived parental behaviours, smoking status, sexual activity, suicidal ideation, drug and alcohol use, eating behaviours, etc. All studies focused on children/adolescents between the ages of 9-18 years. No studies included in this review addressed self-esteem in children less than 9 years of age.

The significant findings from these studies demonstrating the relationship between self-esteem and health outcomes include the following: (i) the prevalence of problem eating, early sexual intercourse (by age 15), and suicidal ideation increases as level of global self-esteem decreases<sup>28</sup>; (ii) depression scores were negatively correlated with scores on body image and self-esteem, and positively correlated with negative stressful life events for both males and females; (iii) pubertal status was predictive of depression scores, self-esteem, body image and negative stressful life events<sup>29</sup>; (iv) both depression and low self-esteem were correlates of suicidality in adolescents<sup>30</sup>; and (v) in a cross-sectional study boys scored higher on self-esteem<sup>31</sup>. Other non-significant findings included positive associations between self-esteem and perceived parental acceptance, strong peer support networks and social support, perceptions of hope, and positive attributional style. Negative associations with self-esteem included peer aggression, mental health problems, emotional distress, and internalizing symptoms.

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<sup>28</sup> McGee, R & Williams, S. Does low self-esteem predict health compromising behaviours among adolescents? *Journal of Adolescence*, 2000; 23, 569-582.

<sup>29</sup> Marcotte, D., Fortin, L., Potvin, P. & Papillon, M. Gender differences in depressive symptoms during adolescence: Role of gender-typed characteristics, self-esteem, body image, stressful life events, and pubertal status. *Journal of Emotional and Behavioural Disorders*, 2002; 10(1): 29-42.

<sup>30</sup> Wild, L.G, Flisher, A.J., Lombard, C. Suicidal ideation and attempts in adolescents: Associations with depression and six domains of self-esteem. *Journal of Adolescence*, 2004; 27: 611-24.

<sup>31</sup> Moksnes, U.K., Moljord, I.E.O., Espnes, G.A. & Byrne, D.G. The association between stress and emotional states in adolescents: The role of gender and self-esteem. *Personality and Individual Differences*, 2010; 49: 430-435.

## **Discussion**

A range of social, behavioural and developmental characteristics have been identified in the literature in association with youth self-esteem, including both physical and mental health outcomes. Several studies point to the importance of positive self-esteem as a significant mediator of depression, suicidality, and behavioural adjustment during adolescence. The finding that pubertal status is a significant predictor of self-esteem suggests that restricting measurement, analysis, and intervention to children/adolescents during puberty is appropriate. Note the absence of studies focusing on children under the age of 9 of age.

In consideration of self-esteem as an indicator of youth mental and emotional health there are certain methodological and measurement issues that need to be considered. A limited number of studies were acceptable for inclusion in the review and no current comprehensive review on the topic exists. All studies relied on self-report measures of self-esteem derived through either interviewer or self-administered questionnaires. As such, the results of these studies are subject to information bias as individuals may interpret and understand questions differently and may be influenced to modify or temper their responses depending on the study environment and/or the influence of the interviewer. Additionally, as most studies employed varying definitions of the concept of self-esteem and relied upon different measures of this concept, findings are difficult to compare between studies and further generalize beyond the study population. Of the studies included in this review, more than half were cross-sectional in design and thus a causal link between self-esteem and youth mental/emotional health cannot be inferred. Furthermore, among the cohort studies, authors were unable to determine causality definitively, and with the exception of the McGee and Williams' (2000) New Zealand birth cohort, no longitudinal studies followed participants at regular intervals for greater than 2 years.

Of the studies included in this review, the majority were conducted using samples of youth from developed countries; however, only one study was based in Canada. While it is reasonable to assume that youth populations in western developed countries may be similar to those in Canada, it may not be possible to accurately generalize these findings across the entire population of Canadian, and more specifically, British Columbian youth. The Canadian Community Health Survey (CCHS) measures several of the outcomes that the studies reviewed have identified as being related to self-esteem, including suicide by age category, mood disorders, perceived health status (both physical and mental) and life satisfaction. Additionally the CCHS 1.1 from 2000 measured self-esteem as the level of perceived self-worth reported by persons aged 12 and over, based on responses to 6 different questions. This measurement series, however, has since been terminated and the individual questions from which the self-esteem measure was derived are not clearly defined.

## **Conclusion**

Moderately strong evidence exists to support the monitoring of indicators of self-esteem in relation to the broader domain of child and youth mental and emotional health. Potential

indicators include measures of mood, suicidality (i.e., thoughts, attempts), and satisfaction with life. Note that these indicators overlap with the conceptual scope of other constructs reviewed in this domain.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Self Esteem</b> <i>Rates of suicide, satisfaction with life</i>	3 – 18 yrs	-	Moderate	Low / Moderate	CCHS AHS

## Self-rated Mental Health

# Systematic Review of Self-Rated Mental Health Related to Mental/Emotional Health

## Background and Context

The purpose of this review is to find research evidence of an association between self-rated mental health and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for assessing and tracking self-rated mental health. Self-rated health is a subjective self-assessment of health often measured in epidemiological studies, which has been empirically validated as a reliable indicator of objective health status and as a proxy for quality of life. This review will evaluate the literature concerning assessments of self-rated mental health among children and youth.

## Methodology and Provisional Results

### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

### Electronic Search Keywords

("self-rated mental health" OR "self-reported mental health" OR "subjective mental health status" OR "self perceived mental health" OR "perceived mental health" OR "self-assessment")

## AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

It was determined from the three search results that there were no suitable reviews for this concept, so the decision was made to execute a “Level B” search process involving individual studies.

### Study Search Process

A second electronic search was conducted for individual studies in this area. The database used was again Medline with Fulltext (PubMed), with the following limits:

*Date:* 2000-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

The same search terms were used as in the review search process outlined previously. There were 82 studies identified in this search process.

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

In addition to the above search method, the following searches were conducted:

- PubMed search using “Related Citations” link
- A search of PsycINFO<sup>32</sup> and Web of Science<sup>33</sup> databases using key terms such as **self-rated mental health AND mental health**.
- A scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as **self-rated mental health AND children AND mental health**
- Hand-searching bibliographies of key papers
- Checking for study updates (by author)

Taken together, the various search processes returned 185 articles for consideration.

### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between self-rated mental health and mental/emotional health outcome(s) in children, then it was excluded.

### Primary Exclusion

The abstracts and/or full versions of the 15 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link self-

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<sup>32</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as ‘birth-17 years’.

<sup>33</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, ‘child\*’, ‘adolescen\*’ and ‘youth’ were included in the search definitions.

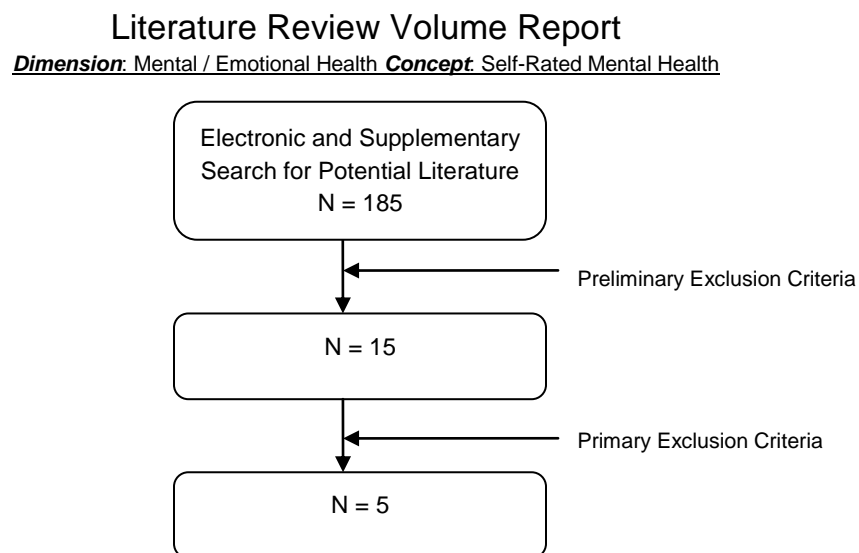


rated mental health with mental/emotional health outcome(s), or if it was not about children, it was excluded.

After completing this first exclusion process, the list of articles was reduced to 15. There were 5 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.



## Results After Applying Secondary Exclusion: Studies

Domain: *Mental/Emotional Health*

Concept: *Self-Rated Mental Health*

	Title of Study	Author(s)	Year	Journal	Journal Impact	Type of Study	Sample Size	Sample Population	Location	Conflict of Interest
					Factor (2009)					
1	Factors related to adolescents' self-perceived health	Tremblay et al.	2003	Health Reports	n/a	Cross-sectional study	12,715	12-17-year-olds	Canada	Not Available
2	A multidimensional perspective of relations between self-concept (Self Description Questionnaire II) and adolescent mental health (Youth Self-Report)	Marsh et al.	2004	Psychological Assessment	2.890	Cross-sectional study	903	Adolescents mean age 12.6 years	Canada	Not Available
3	Adolescent distinctions between quality of life and self-rated health in quality of life research	Zullig et al.	2005	Health and Quality of Life Outcomes	2.456	Cross-sectional study	5,360	High school students in grades 9-12	United States	Not Available
4	School differences in adolescent health and wellbeing: Findings from the Canadian Health Behaviour in School-aged Children	Saab & Klinger	2010	Social Science & Medicine	2.710	Cross-sectional study	9,670	Grades 6-10 students	Canada	Not Available
5	Self-reported physical and mental health status and quality of life in adolescents: A latent variable mediation model	Sawatzky et al.	2010	Health and Quality of Life Outcomes	2.456	Cross-sectional study	8,225	Grades 7-12 adolescents	Canada	None Declared

## Detailed Results

For the 5 studies identified by the literature search and exclusion process, a summary table was developed, as provided below.

Self-Rated Mental Health and Mental/Emotional Health <i>Summary Table of Studies</i>							
Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
<b>Tremblay et al. (2003)</b>	To examine self-perceived health among Canadian adolescents, and factors associated with ratings of very good/ excellent health.	Data are from cycle 1.1 of the 2000/01 Canadian Community Health Survey (CCHS), conducted by Statistics Canada.	Canada  N= 12,715 Adolescents aged 12-17.	Cross-sectional survey	- Associations between self-perceived health and selected characteristics, including self-reported mental health state	- Close to 6% of girls aged 12-14 had suffered a major depressive episode (MDE) in the previous year, well above the 2% of boys in this age group who had been depressed.  - At ages 15-17, the proportion of girls who had had an MDE was considerably higher, at 11%. In contrast, boys aged 15-17 were no more likely than those aged 12-14 to have been depressed.	- For both younger and older age groups, depression was significantly associated with reduced odds that teenagers would report very good/excellent health even accounting for other factors such as chronic conditions, socioeconomic status, obesity, and health behaviours.
<b>Marsh et al. (2004)</b>	To demonstrate that the relations between self-concept and mental health are best understood from a multidimensional perspective.	The data were the pretest, baseline data from a quasi-experimental evaluation of a primary prevention program designed to promote the psychological competencies of young adolescents.	Canada  N=903 French-speaking multiethnic Canadian students in Grades 7 or 8 in 1 of 10 French public secondary schools in socioeconomically disadvantaged areas of Montreal	Cross-sectional survey	- Correlations between 11 SDQII (Self Description Questionnaire II) factors and 7 mental health problems (Youth Self-Report; YSR)	- Single higher-order factors could not explain relations among SDQII factors, among YSR factors, or between the SDQII and YSR factors	- This highly differentiated multivariate pattern of relations supports a multidimensional perspective of self-concept, not the unidimensional perspective still prevalent in mental health research and assessment.
<b>Zullig et al. (2007)</b>	To examine the relationships between	Data were collected from two different public	United States  Two samples in	Cross-sectional survey	- Correlational analyses were performed between self-rated	- In both samples, adolescent QOL ratings were more strongly correlated with the mean number	- QOL, in the context of public high school adolescents, is based

## Self-Rated Mental Health and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	adolescent self-rated health, physical health, mental health, and QOL	high school adolescent samples during two different time periods (1997 & 2003) using the CDC Youth Risk Behavior Survey (YRBS)	two different regions:  A southern state N= 5,220 and A midwestern state N=140		health, physical health days and mental health days, and QOL	of poor mental health days than with the mean number of poor physical health days - Results suggest adolescents are rating two distinct constructs, and that self-rated health and QOL should not be used interchangeably.	largely upon self-reported mental health and to a lesser extent on self-reported physical health. - Although self-reported mental health and self-reported physical health both contribute significantly to adolescent self-rated health, mental health appears to make a greater contribution. - Health promoting efforts for adolescents may need to focus more on mental health than physical health, when considering population needs and type of micro or macro intervention.
<b>Saab &amp; Klinger (2010)</b>	To assess the relationship between student- and school-level factors and student health and wellbeing outcomes, and to estimate the variability present at each of the student and school levels for each of three selected health-related outcomes	Data are from the 2006 Canadian Health Behaviour in School-aged children (HBSC) study survey	Canada  N=9,670 Grades 6-10 students  N=187 school administrators	Cross-sectional survey	- Individual and school-level effects on three outcomes including Self-Rated Health (SRH), Emotional Wellbeing (EWB), and Subjective Health Complaints were estimated using multi-level modeling	- Both individual and school-level factors were associated with students' health. - Gender, family wealth, family structure, academic achievement and neighbourhood were significant student-level predictors. - Random effects indicate that the relationships between these student variables and health are not consistent across schools. Student Problem Behaviours at the school were significant predictors of SRH and SHC, while Student Aggression and the school's average socioeconomic standing were significant school-level predictors of EWB.	- Findings suggest that the environment and disciplinary climate in schools can predict student health and wellbeing outcomes, and may have important implications for school initiatives aimed at students who are struggling both emotionally and academically.
<b>Sawatzky et al. (2010)</b>	To examine adolescents' differentiation of their self-reported physical and	Data were obtained via a the British Columbia Youth Survey on Smoking and	Canada  N=8,225 adolescents in 49	Cross-sectional survey	- Associations between self-reported physical and mental health with global QOL and several relevant life domains,	- Self-reported physical and mental health status and the five life domains explained 76% of the variance in global QOL. - Relatively poorer mental health	- This study provides support for the validity and relevance of differentiating self-reported physical and mental health status in

## Self-Rated Mental Health and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	mental health status, the relative importance of these variables and five important life domains (satisfaction with family, friends, living environment, school and self) with respect to adolescents' global quality of life (QOL), and the extent to which the five life domains mediate the relationships between self-reported physical and mental health status and global QOL.	Health 2 (BCYSOSHII) conducted in 2004 to obtain information about tobacco dependence, drug and health-related behaviour, and quality of life in adolescents in grades 7 to 12 in schools in the province of British Columbia (BC), Canada	schools in British Columbia		including adolescents' satisfaction with their family, friends, living environment, school, and self	and physical health were significantly associated with lower satisfaction in each of the life domains. - Global QOL was predominantly explained by three of the variables: mental health status (d = 30%), satisfaction with self (d = 42%), and satisfaction with family (d = 20%). - Satisfaction with self and family were the predominant mediators of mental health and global QOL (45% total mediation), and of physical health and global QOL (68% total mediation).	adolescent health surveys. - Self-reported mental health status and, to a lesser extent, self-reported physical health status were associated with significant differences in the adolescents' satisfaction with their family, friends, living environment, school experiences, self, and their global QOL. - Questions about adolescents' self-reported physical and mental health status and their experiences with these life domains require more research attention so as to target appropriate supportive services, particularly for adolescents with mental or physical health challenges.

### Bibliography for Summary Table

Tremblay S., Dahinten S., & Kohen D. Factors related to adolescents' self-perceived health. *Health Reports*. 2003; 14 Suppl: 7-16.

Marsh, H.W., Parada, R.H. & Ayotte, V. A multidimensional perspective of relations between self-concept (Self Description Questionnaire II) and adolescent mental health (Youth Self-Report). *Psychological Assessment*, 2004; (16)1, 27-41.

Zullig, K., Valois, R.F. & Drane, J.W. Adolescent distinctions between quality of life and self-rated health in quality of life research. *Health and Quality of Life Outcomes*, 2005; 3, 64-69.

Saab, H. & Klinger, D. School differences in adolescent health and wellbeing: Findings from the Canadian Health Behaviour in School-aged Children. *Social Science & Medicine*, 2010; 70, 850-858.

Sawatzky, R., Ratner, P.A., Johnson, J.L., Kopec, J.A. & Zumbo, B.D. Self-reported physical and mental health status and quality of life in adolescents: A latent variable mediation model. *Health and Quality of Life Outcomes*, 2010; 8, 17-27.

## Summary of Results

A total of five studies were identified under the concept of self-rated mental health that included pertinent research evidence regarding mental/emotional health outcomes. These articles examined the relationship between youth perceptions of their own health and other measures related to quality of life, life satisfaction, mental and physical health outcomes. Four out of the five studies were carried out in Canada involving children/youth between the ages of approximately 11-18 years, and all studies used cross-sectional study designs and self report measurement instruments.

The findings from these studies highlight both statistically significant and non-significant correlations between self-rated mental health with specific mental disorders and with overall wellbeing. Tremblay et al. (2003) found depression to be significantly associated with reduced odds of teenagers reporting very good/excellent health – even after controlling for chronic health conditions, socioeconomic status, obesity and health behaviours. Other significant findings included a stronger association between self-rated mental health status with quality of life compared to self-rated physical health status. Additionally, self-reports of poor mental and physical health were significantly associated with lower satisfaction in the domains of family, friends, living environment, school and self<sup>34</sup>. Factors predictive of self-rated mental health included gender, family wealth, family structure, academic achievement and neighbourhood. Saab and Klinger (2010) found that these individual and environmental factors, including the disciplinary climate in schools was predictive of student health and wellbeing.

## Discussion

Few studies were available for inclusion in the review of the concept of self-rated mental health. Despite the relative paucity of evidence concerning this concept, findings across studies consistently showed positive associations between self-rated mental health status and quality of life outcomes, whereby youth who reported positive mental health similarly reported positive life satisfaction and other related indicators of quality of life. Additionally, a stronger association emerged between self-rated mental health and quality of life, compared to self-rated physical health, suggesting that self-rated health ought to be assessed for both mental and physical health as opposed to being aggregated as one measure. These findings also suggest the potential value of health promotion efforts that focus on mental health as a means of improving quality of life and subsequently self-rated mental health status.

A strength of these findings was the fact that four out of five studies were based on samples of Canadian youth, with one study being conducted in BC. As all of the studies included in

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<sup>34</sup> Sawatzky, R., Ratner, P.A., Johnson, J.L., Kopec, J.A. & Zumbo, B.D. Self-reported physical and mental health status and quality of life in adolescents: A latent variable mediation model. *Health and Quality of Life Outcomes*, 2010; 8, 17-27.

this review involved cross-sectional study designs, temporality of the associations could not be established and as such, causal associations cannot be definitively determined. Additionally, none of the studies included children under the age of approximately 11 years and therefore the findings cannot be generalized to the entire population of children and youth in BC, or elsewhere. The literature in support of the concept of self-rated mental health could be improved by developing a more comprehensive evidence base through longitudinal population level cohort and/or intervention studies that further examine that factors contributing to mental health outcomes and perceptions of quality of life among children and youth.

## Conclusion

The measurement of self-rated mental health, such as on a Likert scale, would be a valuable indicator of mental/emotional health among youth, particularly those aged 11 and older. Evidence suggests that such a measure would have unique relevance to mental/emotional health, independent of physical health, although it would be correlated with mental health status.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Self-Rated Mental Health</b> <i>High self-rated MH (11-19)</i>	11 – 19 yrs	3.1%*	Moderate / High	Moderate	CCHS
* Percentage of Canadian youth (age 12-19) reporting perceived mental health as fair or poor (CCHS 2007)					



## Self-Efficacy

### Systematic Review of Self Efficacy Related to Mental/Emotional Health

#### Background and Context

The purpose of this review is to find research evidence of an association between self efficacy and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking self efficacy. Self efficacy in this context is understood as an individual's belief in their own capacity and capabilities to perform in a certain manner to achieve goals, function effectively in social situations and to exercise influence over the events that affect their lives.

#### Methodology and Provisional Results

##### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

##### Electronic Search Keywords

MM "Self Efficacy"

**AND**

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

As only one paper was located from this initial search process, and it was not suitable for this concept, a "Level B" search process was executed to locate individual studies.

##### Study Search Process

A second electronic search was conducted for individual studies in this area. The database used was again Medline with Fulltext (PubMed), with the following limits:

*Date:* 2000-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Clinical Trial, Randomized Controlled Trial, Controlled Clinical Trial

The same search terms were used as in the review search process outlined previously. There were 6 studies identified in this search process.

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

In addition to the above search method, the following searches were conducted:

- PubMed search using “Related Citations” link
- A search of PsycINFO<sup>35</sup> and Web of Science<sup>36</sup> databases using key terms such as **self efficacy AND mental health**.
- A scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as **self efficacy AND children AND mental health**
- Hand-searching bibliographies of key papers
- Checking for study updates (by author)

Taken together, the various search processes returned 228 articles for consideration.

#### Preliminary Exclusion

The articles were scanned *by title* by two reviewers working individually, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between self efficacy and mental/emotional health outcome(s), or if it was not about children, then it was excluded. When there was disagreement between the reviewers, the article in question was examined in more detail until a consensus was reached.

After completing this first exclusion process, the list of articles was reduced to 23.

#### Primary Exclusion

The full articles were then reviewed, with articles not pertinent to the research topic being excluded; specifically, if the article did not link self efficacy with mental/emotional health

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<sup>35</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsychINFO approximates children as ‘birth-17 years’.

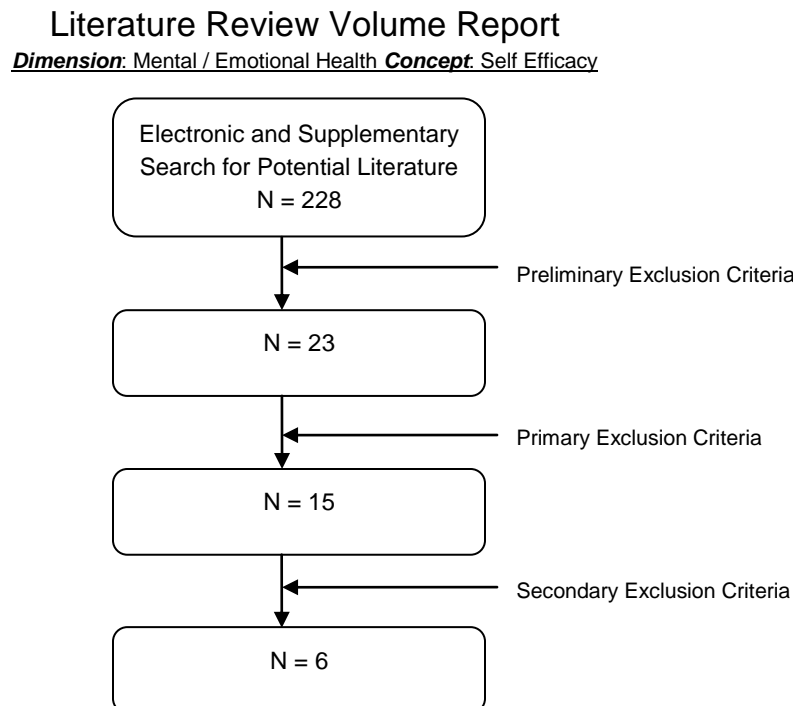
<sup>36</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, ‘child\*’, ‘adolescen\*’ and ‘youth’ were included in the search definitions.

outcome(s), it was excluded. Also excluded was any study that focused on a specific subgroup of children, such as those with learning disabilities, African-Americans, or studies that did not take place in Western developed countries, where there would be a limitation to the generalizability of results across the whole pediatric population in a jurisdiction such as British Columbia. If there was uncertainty as to whether an article should be excluded, the reviewers discussed the matter further to reach a consensus.

There were 15 reviews remaining in the list following the primary exclusion.

### Secondary Exclusion

Studies that were deemed to be of lesser quality or usefulness were excluded. This secondary exclusion step yielded a final total of 6 studies, as reflected in the following Volume Report and subsequent table of results.



## Results After Applying Secondary Exclusion: Studies

Domain: *Mental/Emotional Health*

Concept: *Self Efficacy*

	Title of Study	Author(s)	Year	Journal	Journal Impact		Sample Size	Sample Population	Location	Conflict of Interest
					Factor (2009)	Type of Study				
1	Protective and vulnerability factors of depression in normal adolescents	Muris et al.	2001	Behaviour Research and Therapy	2.995	Cross-sectional study	373	Dutch adolescents aged 13-19 years	Netherlands	Not stated
2	Role of affective self-regulatory efficacy in diverse spheres of psychosocial functioning	Bandura et al.	2003	Child Development	3.631	Longitudinal cohort study	464	Older adolescents aged 14-19 years at Time 1	Italy	Not stated
3	The contribution of self-efficacy beliefs to psychosocial outcomes in adolescence: predicting beyond global dispositional tendencies.	Caprara et al.	2004	Personality and Individual Differences	1.878	Longitudinal cohort study	644	Italian adolescents, mean age 16.7 at Time 1	Italy	None declared
4	Looking for adolescents' well-being: self-efficacy beliefs as determinants of positive thinking and happiness	Caprara et al.	2006	Epidemiologia e Psichiatria Sociale	1.860	Longitudinal cohort study	650	Italian adolescents, mean age 13.5 at Time 1	Italy	Not stated
5	Multi-faceted self-efficacy beliefs as predictors of life satisfaction in late adolescence	Vecchio et al.	2007	Personality and Individual Differences	1.878	Longitudinal cohort study	489	Italian adolescents aged 10-14 years	Italy	Not stated
6	Counteracting depression and delinquency in late adolescence: The role of regulatory emotional and interpersonal self-efficacy beliefs	Caprara et al.	2010	European Psychologist	1.481	Longitudinal cohort study	390	Italian adolescents aged 11-13 years at Time 1	Italy	Not stated

## Detailed Results

For the 6 studies identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Self Efficacy and Mental/Emotional Health Summary Table of Studies							
Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
<b>Muris et al. (2001)</b>	To investigate the role of various protective and vulnerability factors in the development of depressive symptoms	Self-administration of the Children's Depression Inventory and measures of a negative attributional style, parental rearing behaviour, coping styles, and perceived self-efficacy	Netherlands  373 normal adolescents aged 13-19 years  208 girls; 165 boys	Cross-sectional study	- Correlations between depression and various protective and vulnerability factors: negative attributional style, parental rearing behaviour, coping styles, and perceived self-efficacy	- Depression was accompanied by high levels of parental rejection, negative attributions, passive coping, and by low levels of active coping and self-efficacy - Coping styles and self-efficacy played a mediating role in the formation of depressive symptoms	- Negative attributions are linked to depression through negative coping and low self-efficacy coping styles, and negative parental rearing behaviour boosts this process in several ways.
<b>Bandura et al. (2003)</b>	To examine paths of influence through which perceived self-efficacy for affect regulation operates in concert with perceived behavioral efficacy in governing diverse spheres of psychosocial functioning	Self-report measures of five self-efficacy predictors at Time 1, and three psychosocial domains of functioning at both Time 1 and Time 2	Italy  464 older adolescents aged 14-19 at Time 1  251 females; 213 males	Longitudinal cohort study  Participants interviewed twice, two years apart	- Cross-domain functional relations of perceived self-efficacy to regulate positive and negative affect and how it influences depression, delinquent conduct, and prosocial behavior both directly and mediational by their impact on perceived academic self-efficacy, resistive self-regulatory efficacy, and empathic self-efficacy	- Perceived self-efficacy for affect regulation essentially operated mediational. rather than directly on prosocial behavior, delinquent conduct, and depression. - Perceived empathic self-efficacy functioned as a generalized contributor to psychosocial functioning. It was accompanied by prosocial behavior and low involvement in delinquency but increased vulnerability to depression in adolescent females.	- Self-efficacy to regulate positive and negative affect is accompanied by high efficacy to manage one's academic development, to resist social pressures for antisocial activities, and to engage oneself with empathy in others' emotional experiences.
<b>Caprara et al. (2004)</b>	To examine the extent to which self-efficacy beliefs may serve as predictors of life satisfaction beyond three indicators of	Self-report measures of perceived academic, social and regulatory self-efficacy beliefs, academic achievement and social preference	Italy  489 young adolescents aged 10-14 years at Time 1	Longitudinal cohort study  Participants interviewed twice, five years apart	- Predictive power of self-efficacy measures with psychosocial outcomes after controlling for the predictive effects of self-reports of the "big five" global dispositional variables	Self-efficacy beliefs proved to predict psychosocial outcomes even after controlling for self-reported global personality dispositions.	- Adolescents' perceptions of self-efficacy for regulating their actions in accord with personal norms when they are faced with peer pressure for engaging in antisocial conduct were particularly influential, predicting psychosocial

## Self Efficacy and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	adjustment: academic achievement, peer preference and problem behaviour.	at Time 1, when participants were in middle school	249 girls; 240 boys				outcomes across all three domains.
<b>Caprara et al. (2006)</b>	To identify the personal characteristics and developmental pathways conducive to successful adaptation from childhood to adulthood	Self report measures to examine the concurrent and longitudinal impact of self-efficacy beliefs on subjective well-being in adolescence, namely positive thinking and happiness	Italy  664 adolescents, 16.73 years mean age at Time 1  342 female; 322 male	Longitudinal cohort study  Follow-up twice over two years.	- Test interrelations among adolescents' emotional and interpersonal self-efficacy beliefs as proximal and distal determinants of positive thinking and happiness	- Findings attest to the impact of affective and interpersonal-social self-efficacy beliefs on positive thinking and happiness both concurrently and longitudinally - Perceived self-efficacy for affect regulation and for the management of interpersonal relationships influence adolescents' subjective well-being	- Adolescents' self-efficacy beliefs to manage positive and negative emotions and interpersonal relationships contribute to promote positive expectations about the future, maintain a high self-concept, perceive a sense of life satisfaction and experience more positive emotions
<b>Vecchio et al. (2007)</b>	To determine whether earlier self-efficacy beliefs predict later life satisfaction over a five-year period of adolescent development	Self-report of multi-faceted measures of self-efficacy beliefs (academic, social and self-regulatory), academic achievement and peer preference in middle school	Italy  650 young adolescents, mean age 13.5 at Time 1  333 girls; 317 boys	Longitudinal cohort study  Participants interviewed twice, five years apart	- Predictive power of self-efficacy beliefs related to relevant domains of functioning including: academic achievement, social relationships and resistance to transgressive peer pressures with respect to later adolescents' life satisfaction	- For both genders, academic and social self-efficacy beliefs in early adolescence were better predictors of life satisfaction in late adolescence than early academic achievement and peer preference. - Self-efficacy beliefs accounted for life satisfaction more than academic performance and popularity as reported by peers	- Findings attest to the positive role of earlier self-efficacy beliefs in different domains of functioning and as long-term predictors of life satisfaction. - Change in academic and social self-efficacy beliefs significantly contributed to predict life satisfaction over the course of five years
<b>Caprara et al. (2010)</b>	To examine the extent to which affective and inter-personal social self-efficacy beliefs affect depression and delinquency from adolescence to early adulthood	Self-reported questionnaires were used to measure emotional and interpersonal self-efficacy, depression, and delinquency	Italy  390 adolescents aged 11–13 years at Time 1  227 girls; 225 boys	Longitudinal cohort study  Data collected 1, 3, and 7 years later	- Test the influence that affective and inter-personal self-regulatory efficacy beliefs in middle adolescence exert on youth's depression and delinquency concurrently, and 4 years later when adolescents enter into early adulthood, after controlling for earlier adolescent's exposure to	- A significant and direct path from self-efficacy to manage negative emotions to concurrent depression was found - Findings showed the importance of adolescents' emotional and interpersonal self-efficacy beliefs in contrasting maladjustment, despite the impairing effect of personal and contextual risk factors	- Self-efficacy beliefs related to adolescents' perceived capacity to handle negative emotions and to express positive emotions influence depression and delinquency concurrently and longitudinally through interpersonal social self-efficacy – namely, individuals' beliefs in their

## Self Efficacy and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	after controlling for previous exposure to family violence and self-regulation problems				family violence and self-regulation problems		capability to handle relations with parents, to rebuff peer pressures toward transgressive behavior, and to empathize with others' feelings

### Bibliography for Summary Table

Muris, P., Schmidt, H., Lambrichs, R. & Meesters, C. Protective and vulnerability factors of depression in normal adolescents. *Behaviour Research and Therapy*, 2001; 39, 555-565.

Bandura, A., Caprara, G.V., Barbaranelli, C., Gerbino, M. & Pastorelli, C. Role of affective self-regulatory efficacy in diverse spheres of psychosocial functioning. *Child Development*, 2003; 74(3), 769-782.

Caprara, G.V., Barbaranelli, C., Pastorelli, C. & Cervone, D. The contribution of self-efficacy beliefs to psychosocial outcomes in adolescence: predicting beyond global dispositional tendencies. *Personality and Individual Differences*, 2004; 37, 751-763.

Caprara, G.V., Steca, P., Gerbino, M.P. & Vecchio, G.M. Looking for adolescents' well-being: self-efficacy beliefs as determinants of positive thinking and happiness. *Epidemiologia e Psichiatria Sociale*, 2006; 15(1), 30-43.

Vecchio, G.M., Gerbino, M., Pastorelli, C., Del Bove, G. & Caprara, G.V. Multi-faceted self-efficacy beliefs as predictors of life satisfaction in late adolescence. *Personality and Individual Differences*, 2007; 43, 1807-1818.

Caprara, G.V., Gerbino, M., Paciello, M., Di Giunta, L. & Pastorelli, C. Counteracting depression and delinquency in late adolescence: The role of regulatory emotional and interpersonal self-efficacy beliefs. *European Psychologist*, 2010; 15(1), 34-48.

## Summary of Results

A total of six studies were identified under the concept of self efficacy that included pertinent research evidence regarding mental/emotional health outcomes. These studies examined the linkages between perceptions of self-efficacy and various aspects of wellbeing, life satisfaction and psychosocial functioning. Among these studies, one was carried out in the Netherlands using a cross-sectional study design, and the remaining five were longitudinal cohort studies carried out in Italy. All studies were primarily focused on adolescents with ages ranging from 10-19 years, and all utilized self-reported measurement instruments to assess perceptions of self efficacy and related outcomes.

The cross-sectional study conducted in the Netherlands examined correlations between depression and several protective and vulnerability factors including self efficacy. The authors concluded that depression was linked to negative coping and low self efficacy, and that coping styles and self efficacy played a mediating role in the development of depressive symptoms<sup>37</sup>. The Italian studies focused primarily on adolescent perceptions of their own self efficacy and the impact of these perceptions on psychosocial functioning, interpersonal relationships, and academic performance. These studies showed correlations between high self efficacy and several characteristics, including positive affect, the ability to manage one's academic development, resistance to social pressures for antisocial activities, and empathic engagement with others. Despite an overall trend of self-efficacy being correlated with positive outcomes, only two statistically significant associations were found among the Italian studies. Vecchio et al. (2007) found that a change in academic and social self efficacy perception significantly contributed to predicting life satisfaction over a five-year period. Further, Caprara et al. (2010) found that self efficacy related to adolescents' perceived ability to handle negative emotions was significantly correlated with reduced symptoms of depression.

## Discussion

The evidence in this review investigated the relationship between perceptions of self efficacy and mental/emotional health outcomes, and found a consistently positive association between the two, suggesting the importance of self-efficacy in contributing to positive mental health. These findings must, however, be considered in light of the fact that there were only six studies deemed suitable for inclusion in this review, suggesting that the scientific study of self efficacy and mental health among children and youth may currently be underdeveloped. A strength of the evidence was that five out of the six articles involved longitudinal cohort studies; however, these studies were all carried out in Italy involving many of the same researchers across each set of analyses, which may have introduced bias, and it is difficult to determine whether the samples of participants in all 5 articles are mutually exclusive. As none of the studies in this review were from Canada, or within North

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<sup>37</sup> Muris, P., Schmidt, H., Lambrichs, R. & Meesters, C. Protective and vulnerability factors of depression in normal adolescents. *Behaviour Research and Therapy*, 2001; 39, 555-565.



America, findings may not be completely generalizable to youth in British Columbia due to possible variations in cultural practices and conceptualizations of self-efficacy and mental health literacy.

## Conclusion

The construct of self-efficacy has provided immense utility in the fields of clinical and positive psychology. At this time, an insufficient volume of evidence exists to guide decision-making regarding indicators of self-efficacy in relation to the mental/emotional health of children and youth. No specific recommendation is made for this construct, pending further research.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
Self-Efficacy (n/a)	3 – 18 yrs	-	Low	Low	Unknown

## Spirituality

### Systematic Review of Spirituality Related to Mental/Emotional Health

#### Background and Context

The purpose of this review is to identify and evaluate research evidence of an association between spirituality and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for measuring and tracking spirituality among children and youth in British Columbia. Spirituality, in the context of this review, refers to the presence of stated belief system, participation in organized religion, and/or membership within a spiritual community. Spirituality is understood to be integral to religion. The term spirituality, however, intends to encompass a broader understanding of belief systems beyond traditional understandings of religion; these terms are often used interchangeably in the literature.

#### Methodology and Provisional Results

##### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

##### Electronic Search Keywords

(MM "Spirituality" OR MH "Spiritual Therapies+" OR MM "Religion and Psychology" OR MH Religion+)

#### AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary

search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>38</sup> and Web of Science<sup>39</sup> databases for reviews using key terms such as **(spirituality OR religious beliefs OR religious practices) AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(spirituality OR religious beliefs OR religious practices) AND children AND mental health**. Finally, as the most recent systematic review of the association of spirituality with mental/emotion health was dated 2009, an update related to more recent studies was not pursued.

Taken together, the search processes returned 412 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between spirituality and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 26.

#### Primary Exclusion

The abstracts and/or full versions of the 26 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link spirituality with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 4 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

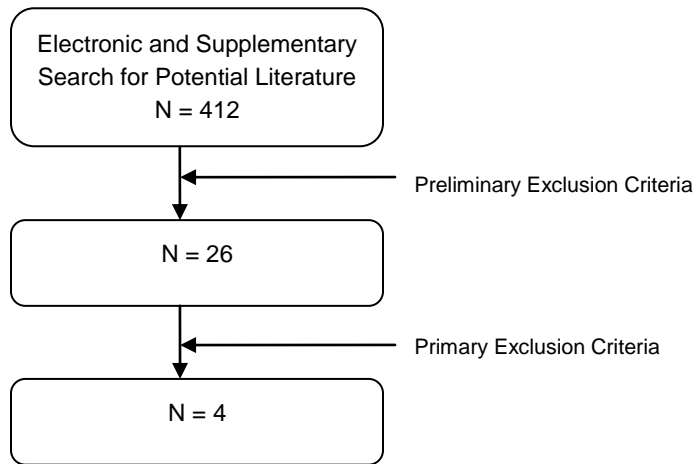
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<sup>38</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsychINFO approximates children as 'birth-17 years'.

<sup>39</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.

## Literature Review Volume Report

***Dimension:*** Mental / Emotional Health ***Concept:*** Spirituality



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Spirituality*

	<b>Title of Review</b>	<b>Lead Author</b>	<b>Year</b>	<b>Journal</b>	<b>Journal Impact Factor (2009)</b>	<b>Year Range of Studies</b>	<b>No. of Studies</b>
1	Religion/spirituality and adolescent health outcomes: A review	Cotton et al.	2006	Journal of Adolescent Health	3.325	1987-2004	18
2	A systematic review of recent research on adolescent religiosity/spirituality and mental health	Wong et al.	2006	Issues in Mental Health Nursing	n/a	1998-2004	20
3	Religion/Spirituality and adolescent psychiatric symptoms: A review	Dew et al.	2008	Child Psychiatry & Human Development	1.533	1967-2006	115
4	Youth religiosity and substance use: A meta-analysis from 1995 to 2007	Yeung et al.	2009	Psychological Reports	0.346	1995-2007	22

## Detailed Results

For the 4 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

<b>Spirituality and Mental/Emotional Health</b> <i>Summary Table of Reviews</i>			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Cotton et al. (2006)</b>	Religion/spirituality and adolescent health outcomes: A review	18	Religion/spirituality (R/S) is important to adolescents, and is usually considered a protective factor against a host of negative health outcomes. This article reviewed the literature examining proximal domains of R/S (e.g., spiritual coping) in adolescent health outcomes research: Health Behaviours / Mental health / Physical Health. Eight studies focused on mental health outcomes, with findings showing mixed results. Although certain aspects of R/S are associated with lower levels of depression in adolescents and are inversely related to behaviors such as suicidal ideation, other aspects such as negative interpersonal religious experience in adolescents have been linked with greater levels of depressive symptoms, possibly from negative experiences with their congregations.
<b>Wong et al. (2006)</b>	A systematic review of recent research on adolescent religiosity/spirituality and mental health	20	This systematic review reports on recent research on the relationships between adolescent religiosity/spirituality (R/S) and mental health. Most studies (90%) showed that higher levels of R/S were associated with better mental health in adolescents. Institutional and existential dimensions of R/S had the most robust relationships with mental health. The relationships between R/S and mental health were generally stronger or more unique for males and older adolescents than for females and younger adolescents.
<b>Dew et al. (2008)</b>	Religion/Spirituality and adolescent psychiatric symptoms: A review	115	One hundred and fifteen articles were reviewed that examined relationships between religion/ spirituality (R/S) and adolescent substance use, delinquency, depression, suicidality, and anxiety. Ninety-two percent of articles reviewed found at least one significant ( $p < .05$ ) relationship between religiousness and better mental health. Evidence for relationships between greater religiousness and less psychopathology was strongest in the area of teenage substance use.
<b>Yeung et al. (2009)</b>	Youth religiosity and substance use: A meta-analysis from 1995 to 2007	22	The magnitude of the protective effects of religiosity on youth involvement in substance use was investigated. The average weighted mean correlation was $Zr = .16$ , significant regardless of the definitions of religiosity. The homogeneity test of variance showed consistent protective effects of religiosity on four types of substance use, namely, alcohol, cigarette, marijuana, and other illicit drugs

## Bibliography for Summary Table

Cotton, S., Zebracki, K., Rosenthal, S.L., Tsevat, J. & Drotar, D. Religion/spirituality and adolescent health outcomes: A review. *Journal of Adolescent Health*, 2006; 38, 472–480.

Wong, Y.J., Rew, L. & Slaikeu, K.D. A systematic review of recent research on adolescent religiosity/spirituality and mental health. *Issues in Mental Health Nursing*, 2006; 27, 161–183.

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## Summary of Results

A total of four reviews were identified under the concept of spirituality that included pertinent research evidence regarding mental/emotional health outcomes. Among these reviews, one focused on overall health outcomes, while the other three specifically focused on reviewing the literature concerning psychiatric/mental health and substance use. Adolescents or older children were the target age group of each review, and no studies included samples of younger children (i.e. <12 years).

The review carried out by Cotton et al., (2006) examined the domains of health behaviours, mental health and physical health. Among the studies included in the mental health domain (eight studies total) there were mixed results with respect to the role of religiosity/spirituality. While certain aspects of religiosity/spirituality were associated with lower levels of depression and were inversely related to behaviours such as suicidal ideation, other aspects such as negative interpersonal religious experience in adolescence were linked with greater levels of depressive symptoms. These mixed results have been attributed to possible negative experiences with religious communities.

Among the reviews that focused specifically on psychiatric outcomes and their relationship to religion/spirituality, all found statistically significant protective effects of religiosity/spirituality against mental illness symptoms. In the review conducted by Wong et al., (2006), higher levels of religiosity/spirituality were associated with better mental health, and this relationship was generally shown to be stronger in males and older adolescents than for females and younger adolescents. Similarly, Yeung et al. (2009) found consistent protective effects of religiosity against four types of substance use including alcohol, cigarette, marijuana and other illicit drugs. Finally, Dew et al. (2008) reviewed the greatest number of studies, finding that 92 percent of articles reviewed showed at least one significant relationship between religiousness and improved mental health. Among these studies, it was further summarized that greater religiousness and less psychopathology was strongest in the area of teenage substance use.

## Discussion

A total of four review articles were deemed suitable for inclusion in this review, however, with the exception of the review conducted by Dew et al., (2008), roughly 20 studies were reviewed for each review article, pointing to possible empirical weaknesses in research literature and limiting our ability to arrive at definitive conclusions of causal association. According to Dew et al., (2008) who reviewed the greatest number of articles, there was substantial variance in methodological rigor which could bias results in either direction, and only 8% of articles failed to find any significant relationship between religiosity/spirituality. This finding may attest to the overall robustness of the protective influence of religiousness (i.e., the effect transcends variability in measurement), or may alternatively suggest the possibility of a structural publication bias toward positive findings.



Religiosity/spirituality within the reviewed articles was inconsistently defined and the specific aspects of religion/spirituality which offer protective benefits to adolescents are largely unknown. As such, Dew et al. (2008) recommended a multi-faceted approach to understanding the role of religion/spirituality, including employing measures which examine multiple dimensions of the spirituality-psychopathological relationship. They recommended the possible use of three different measurement instruments including the “Brief Multidimensional Measure of Religiousness/Spirituality”, the “Religious Orientation Scale” and/or the “Spirituality Wellbeing Scale”. Further, it was suggested that in order to develop a more accurate understanding of the role of religion/spirituality in mental illness, it is necessary to control for substance use, as it may be the case that avoidance of substance use may be the mechanism through which a the mental health benefit is conferred – not necessarily religiosity/spirituality.

## Conclusion

Despite variability in definitions and in the overall quality of research, reviewers have consistently found a positive association between “religiousness/spirituality” (R/S) and mental/emotional health among youth aged 12-19 years. A relatively clear and inverse association exists between R/S and substance use, and it is possible that this relationship mediates many of the other positive developmental findings associated with R/S. No existing measures are known to examine R/S among youth in British Columbia. A single item examining R/S may feasibly be introduced, and the available literature has found that positive effects of R/S are evident despite variable approaches to measurement. Nevertheless, researchers have recommended the standardization of measurement and greater attention to psychometrics in this area. We note, however, that the latter recommendation is primarily directed to the research community, and has limited relevance to the selection of population-level indicators.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Spirituality</b> <i>% of youth (12-19) reporting religiousness / spirituality</i>	3 -18 yrs	-	Moderate	Moderate	Unknown

## Mental Illness Theme

### Mental Health Disorders

#### Systematic Review of Mental Health Disorders Related to Mental/Emotional Health

##### Background and Context

The purpose of this review is to find research evidence of an association between mental health disorders and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking and monitoring mental health disorders. Mental Disorders are defined within the international Classification of Diseases as well as the Diagnostic and Statistical Manual of the American Psychiatric Association. These classificatory systems include a number of disorders that may be diagnosed among individuals of all ages. Many of these disorders are common among children and youth, such as Mood Disorders or Anxiety Disorders. The classificatory systems also include subgroups of disorders that are developmentally sensitive, identified as Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence. These include Mental Retardation and Learning Disorders.

There is a face valid relationship between Mental Disorders and the broader construct of mental/emotional health. One of the most common criteria for many Mental Disorders is that the symptoms produce significant distress. However, distress is not a necessary concomitant aspect of mental disorders, and good quality of life is often observed (and is a frequent goal of treatment) for people with mental disorders, particularly those disorders that have a chronic or continuing course.

##### Methodology and Provisional Results

###### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

###### Electronic Search Keywords

(MH "Mental Disorders Diagnosed in Childhood+")

## AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MH "Resilience, Psychological+" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>40</sup> and Web of Science<sup>41</sup> databases for reviews using key terms such as (**mental health disorders**) AND **children** AND **mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: (**mental health disorders**) AND **children** AND **mental health**. Finally, as the most recent systematic reviews of the association of mental health disorders with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 517 reviews for consideration.

### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between mental health disorders and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 55.

### Primary Exclusion

The abstracts and/or full versions of the 55 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link mental health disorders with mental/emotional health outcome(s), or if it was not about children, it was excluded.

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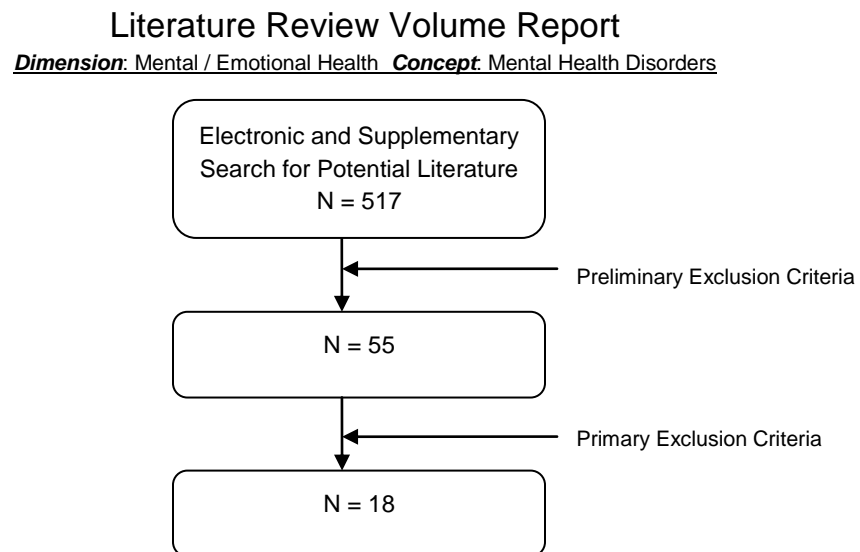
<sup>40</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as 'birth-17 years'.

<sup>41</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.

There were 18 reviews remaining in the list following primary exclusion.

### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Mental Health Disorders*

	<u>Title of Review</u>	<u>Lead Author</u>	<u>Year</u>	<u>Journal</u>	<u>Journal Impact Factor (2009)</u>	<u>Year Range of Studies</u>	<u>No. of Studies</u>
<b><i>Emotional Disorders</i></b>							
1	Depression in children and adolescents: Linking risk research and prevention	Garber, J.	2006	American Journal of Preventive Medicine	n/a	-	-
2	Common emotional and behavioral disorders in preschool children: presentation, nosology, and epidemiology	Egger & Angold	2006	Journal of Child Psychology and Psychiatry	4.983	-	-
3	Anxiety disorders during childhood and adolescence: Origins and treatment	Rapee et al.	2009	Annual Review of Clinical Psychology	9.613	-	-
4	Prodromal symptoms and atypical affectivity as predictors of major depression in juveniles: Implications for prevention	Kovacs & Lopez-Duran	2010	Journal of Child Psychology and Psychiatry	4.983	-	-
<b><i>Disruptive Behavioural Disorders</i></b>							
5	Childhood disruptive behaviour disorders: Review of their origin, development, and prevention	Petitclerc & Tremblay	2009	Canadian Journal of Psychiatry-Revue Canadienne de Psychiatrie	2.293	-	-
6	Development and etiology of disruptive and delinquent behavior	Loeber et al.	2009	Annual Review of Clinical Psychology	9.613	1986-2007	22
7	Risk factors for conduct disorder and delinquency: Key findings from longitudinal studies	Murray & Farrington	2010	Canadian Journal of Psychiatry-Revue Canadienne de Psychiatrie	2.293	-	-
<b><i>Bipolar Disorder</i></b>							
8	Pediatric bipolar disorder	Liebenluft & Rich	2008	Annual Review of Clinical Psychology	9.613	-	-

## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Mental Health Disorders*

	<u>Title of Review</u>	<u>Lead Author</u>	<u>Year</u>	<u>Journal</u>	<u>Journal Impact Factor (2009)</u>	<u>Year Range of Studies</u>	<u>No. of Studies</u>
<b><i>Eating Disorders</i></b>							
9	Partial eating disorders among adolescents: A review	Chamay-Weber et al.	2005	Journal of Adolescent Health	3.325	-	-
10	Childhood risk factors: Longitudinal continuities and eating disorders	Micali, N.	2005	Journal of Mental Health	n/a	-	-
11	The relation between eating- and weight-related disturbances and depression in adolescence: A review	Rawana et al.	2010	Clinical Child and Family Psychology Review	2.600	1989-2009	16
<b><i>ADD / ADHD</i></b>							
12	Attention-deficit/hyperactivity disorder and social dysfunctioning	Nijmeijer et al.	2008	Clinical Psychology Review	4.901	1987-2005	11
13	The quality of life of children with attention deficit/hyperactivity disorder: a systematic review	Danckaerts et al.	2010	European Child Adolescent Psychiatry	n/a	1988-2008	36
<b><i>Substance Use</i></b>							
14	The association between psychopathology and substance use in young people: A review of the literature	Saban & Flisher	2010	Journal of Psychoactive Drugs	0.811	-	-
<b><i>Co-Morbidity</i></b>							
15	Psychiatric comorbidity in children and adolescents	Arcelusa & Vostanis	2005	Current Opinion in Psychiatry	3.574	-	-
16	Comorbid psychopathology in adolescents and young adults treated for substance use disorders: A review	Couwenbergh et al.	2006	European Child & Adolescent Psychiatry	1.651	1998-2004	10
17	Co-occurrence of bipolar and attention-deficit hyperactivity disorders in children	Singh et al.	2006	Bipolar Disorders	n/a	1966-2006	17

## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Mental Health Disorders*

	<u>Title of Review</u>	<u>Lead Author</u>	<u>Year</u>	<u>Journal</u>	<u>Journal Impact Factor (2009)</u>	<u>Year Range of Studies</u>	<u>No. of Studies</u>
18	A review of attention-deficit/hyperactivity disorder complicated by symptoms of oppositional defiant disorder or conduct disorder	Connor et al.	2010	Journal of Developmental & Behavioral Pediatrics	2.265	-	-

## Detailed Results

For the 18 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Mental Health Disorders and Mental/Emotional Health			
Summary Table of Reviews			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Emotional Disorders</b>			
<b>Garber, J. (2006)</b>	Depression in children and adolescents: Linking risk research and prevention	-	Basic epidemiologic and clinical research indicates that increased risk for depression is associated with being female; a family history of depression, particularly in a parent; subclinical depressive symptoms; anxiety; stressful life events; neurobiological dysregulation; temperament/personality (e.g., neuroticism); negative cognitions; problems in self-regulation and coping; and interpersonal dysfunction. These vulnerabilities both increase individuals' chances of encountering stress and decrease their ability to deal with the stress once it occurs.
<b>Egger &amp; Angold (2006)</b>	Common emotional and behavioral disorders in preschool children: presentation, nosology, and epidemiology	-	Focus on the five most common groups of childhood psychiatric disorders: attention deficit hyperactivity disorders, oppositional defiant and conduct disorders, anxiety disorders, and depressive disorders. Despite the relative lack of research on preschool psychopathology compared with studies of the epidemiology of psychiatric disorders in older children, the current evidence now shows quite convincingly that the rates of the common child psychiatric disorders and the patterns of comorbidity among them in preschoolers are similar to those seen in later childhood.
<b>Rapee et al. (2009)</b>	Anxiety disorders during childhood and adolescence: Origins and treatment	-	<ul style="list-style-type: none"> <li>- Anxiety disorders in children have a high prevalence and moderate life impact.</li> <li>- There is a moderate genetic influence in the development of anxiety in children.</li> <li>- Twin studies indicate involvement from individual and, to some extent, common environmental factors. These include parenting, parent psychopathology, family demographic factors, or family stressors. Children with anxiety disorders are considerably more likely than are other children to have a parent with an anxiety disorder.</li> <li>- Features of inhibited temperament are demonstrated very early in development and increase risk for anxiety directly as well as in interaction with most other risk factors.</li> <li>- The strongest evidence for treatment efficacy for anxious children currently comes from generic treatment packages that address different forms of anxiety.</li> </ul>
<b>Kovacs &amp; Lopez-Duran (2010)</b>	Prodromal symptoms and atypical affectivity as predictors of major depression in juveniles: Implications for prevention	-	The pediatric literature is remarkably consistent that the presence of any combination of several depressive symptoms for at least one week (in the context of no prior episodes) is one of the best predictors of subsequent first episode Major Depressive Disorder (MDD). According to studies of young offspring at familial risk for MDD, such youngsters are characterized by generally low levels of positive affectivity (compared to typical peers), emerging difficulties with mood repair (the appropriate attenuation of sad, dysphoric affect), and signs of atypical functioning in three intertwined physiological systems (HPA axis, cerebral hemispheric asymmetry, and cardiac vagal control) that are implicated in affectivity and mood repair.



## Mental Health Disorders and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Disruptive Behavioural Disorders</b>			
<b>Petitclerc &amp; Tremblay (2009)</b>	Childhood disruptive behaviour disorders: Review of their origin, development, and prevention	-	<p>Longitudinal studies starting at birth show that disruptive behaviour disorders (DBD), ODD, CD, and ADHD, symptoms are clearly present during the second year after birth. With age, most children gain relatively adequate control over these impulsive-disruptive behaviours that are characteristic of an immature neurological system. However, children with control problems tend to have been among the most disruptive from the start.</p> <ul style="list-style-type: none"> <li>- Potentially alterable risk factors for child DBDs are identifiable in the mothers before, during, or shortly after pregnancy.</li> <li>- Serious consequences of DBDs can be prevented when interventions start during pregnancy and target multiple risk factors.</li> </ul>
<b>Loeber et al. (2009)</b>	Development and etiology of disruptive and delinquent behavior	22	<ul style="list-style-type: none"> <li>- Factor analyses suggest that two ODD factors exist, one of negative affect and the other representing defiance. The negative affect but not the defiant component of ODD predicts later depression.</li> <li>- ODD rather than CD may explain the comorbidity between CD and depression.</li> <li>- It is not clear whether and how child temperament may be distinguished from ODD symptoms.</li> <li>- Factor analyses suggest that interpersonal features of psychopathy can be reliably distinguished from behaviors consistent with ODD, CD, and ADHD.</li> <li>- Psychopathic features in childhood are about as stable as ODD/CD symptoms, but developmental changes have also been noted.</li> <li>- Psychopathic features independently predict later conduct problems and antisocial behavior beyond earlier initial conduct problem severity.</li> <li>- Etiological factors of psychopathic features appear similar to those factors associated with ODD and CD, but there is a need to document etiological factors that are unique to psychopathic features.</li> <li>- Research on developmental pathways shows that ODD and CD symptoms appear to be stepping stones to serious forms of delinquency.</li> <li>- Research on developmental trajectories often shows four groups: those whose problem behavior remains high over time, those whose problem behavior remains low, those whose problem behavior increases, and those whose problem behavior decreases between childhood and early adulthood.</li> <li>- Most of the risk factors predicting delinquency also predict symptoms of disruptive behavior.</li> <li>- There is replicated evidence of a dose-response relationship between children and adolescents' exposure to an accumulation of risk factors across multiple domains and an increased probability of later adverse outcomes.</li> <li>- It is probable that the most salient risk window of children's exposure to risk factors is prior to adolescence.</li> <li>- The sum of promotive and risk factors is a better predictor of later problems compared to knowledge of risk or promotive factors only.</li> <li>- Promotive factors tend to buffer the impact of risk factors.</li> <li>- The natural occurring balance between risk and promotive factors may change over time; the</li> </ul>

## Mental Health Disorders and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			prevalence of promotive factors appears highest in middle childhood, and risk compared to promotive factors tends to be more dominant during adolescence.
<b>Murray &amp; Farrington (2010)</b>	Risk factors for conduct disorder and delinquency: Key findings from longitudinal studies	-	<ul style="list-style-type: none"> <li>- CD and delinquency peak in mid to late adolescence and show considerable continuity over time.</li> <li>- The most important risk factors include impulsiveness, low IQ and low school achievement, poor parental supervision, punitive or erratic parental discipline, cold parental attitude, child physical abuse, parental conflict, disrupted families, antisocial parents, large family size, low family income, antisocial peers, high delinquency rate schools, and high crime neighbourhoods.</li> </ul>
<b>Bipolar Disorder</b>			
<b>Liebenluft &amp; Rich (2008)</b>	Pediatric bipolar disorder	-	<ul style="list-style-type: none"> <li>- The diagnosis of bipolar disorder (BD) in youths has increased dramatically over the past decade in community clinics and hospitals.</li> <li>- Severe mood dysregulation (SMD) youths reflect the sample in whom the diagnosis of BD is most controversial, given their chronic severe irritability and ADHD and ODD symptomatology, yet these youths appear to differ from those with BD and bipolar disorder-not otherwise specified (BD-NOS).</li> <li>- Neurocognitive studies of cognitive flexibility and response to frustration are beginning to identify divergent pathophysiologies between BD and SMD youths, indicating they may be different disorders.</li> <li>- Comparable deficits in face emotion identification highlight neurocognitive overlap between BD and SMD.</li> <li>- Initial evidence indicates that group, family, and individually based cognitive-behavioral and psychoeducational approaches may be efficacious for treating pediatric BD.</li> </ul>
<b>Eating Disorders</b>			
<b>Chamay-Weber et al. (2005)</b>	Partial eating disorders among adolescents: A review	-	Many adolescents do not fulfill all the DSM-IV criteria's for anorexia nervosa and bulimia, but do nevertheless suffer from partial eating disorders (EDs). Affected adolescents often suffer from physical and psychological problems owing to co-morbidity or as a consequence of their eating patterns: chronic constipation, dyspeptic symptoms, nausea, abdominal pain, fatigue, headaches, hypotension, menstrual dysfunction as well as dysthymia, depressive and anxiety disorders, or substance misuse and abuse. In comparison with those who are unaffected, adolescents with partial ED are at higher risk of evolving into full ED. However, most of them evolve into spontaneous remission.
<b>Micali, N. (2005)</b>	Childhood risk factors: Longitudinal continuities and eating disorders	-	The literature suggests that feeding difficulties and childhood weight status might be part of a developmental marker for eating disorders. Psychopathology and adversities in childhood also increase the risk for later eating disorders, although they might not be specific factors. The literature lends some weight to the role of childhood overweight in increasing the risk for bulimic disorders. The risk attributable to psychiatric morbidity and psychological problems also seems to be a robust and replicated finding. Childhood maltreatment, physical and sexual abuse are also likely to be involved in increasing the risk for ED.
<b>Rawana et al. (2010)</b>	The relation between eating- and weight-related disturbances and depression in adolescence: A review	16	Depression often emerges during adolescence and persists into adulthood. One set of risk factors that has been recently studied in adolescent depression research is eating- and weight-related disturbances (EWRDs). EWRDs encompass negative cognitions related to one's body or physical appearance, negative attitudes toward eating, and unhealthy weight control behaviors. In synthesizing the findings,

## Mental Health Disorders and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			there is support for the inclusion of EWRDs in contemporary models of adolescent depression.
<b>ADD / ADHD</b>			
<b>Nijmeijer et al. (2008)</b>	Attention-deficit/hyperactivity disorder and social dysfunctioning	11	Children with ADHD often have conflicts with adults and peers, and suffer from unpopularity, rejection by peers, and a lack of friendships, in part as a consequence of their ADHD symptoms. Comorbid oppositional defiant or conduct disorder aggravates these impairments. In some cases the inadequate social behavior of children with ADHD may be phenomenologically and etiologically related to pervasive developmental disorders (PDD). Social dysfunctioning in children with ADHD appears to increase their risk of later psychopathology other than ADHD. Thus far effective treatment for social dysfunctioning is lacking.
<b>Danckaerts et al. (2010)</b>	The quality of life of children with attention deficit/hyperactivity disorder: a systematic review	36	Robust negative effects on QoL are reported by the parents of children with ADHD across a broad range of psycho-social, achievement and self evaluation domains. Children with ADHD rate their own QoL less negatively than their parents and do not always seeing themselves as functioning less well than healthy controls. ADHD has a comparable overall impact on QoL compared to other mental health conditions and severe physical disorders. Increased symptom level and impairment predicts poorer QoL. The presence of comorbid conditions or psychosocial stressors helps explain these effects. There is emerging evidence that QoL improves with effective treatment. In conclusion, ADHD seriously compromises QoL especially when seen from a parents' perspective.
<b>Substance Use</b>			
<b>Saban &amp; Flisher (2010)</b>	The association between psychopathology and substance use in young people: A review of the literature	-	Evidence exists for associations between depression and cigarette smoking, between anxiety and cigarette smoking, and between anxiety and alcohol use. The strength of the associations is increased with greater frequency and quantity of substance use, and is influenced by the nature of the psychopathology, the specific substances of use, and demographic factors such as gender, age or developmental stage.
<b>Co-morbidity</b>			
<b>Arcelusa &amp; Vostanis (2005)</b>	Psychiatric comorbidity in children and adolescents	-	Several epidemiological studies have confirmed previous findings in relation to the high rates of psychiatric comorbidity in children and adolescents. In particular, psychiatric comorbidity has been detected in children with substance abuse, and with conduct and oppositional defiant, anxiety and attention deficit–hyperactivity disorders. Psychiatric comorbidity has been found to influence the manifestation of the symptoms as well as the outcome of the disorder and response to treatment (i.e. different studies have shown that young people with anxiety and comorbid depressive disorder have a more severe functional impairment than do those without comorbid depression). Those studies found that children with anxiety and comorbid depressive disorders had significantly more anxiety symptoms than did those without comorbid depressive disorders. In addition, children with both disorders were at greater risk for suicide attempts, substance abuse and conduct disorder than were those with either diagnosis alone.
<b>Couwenbergh et al. (2006)</b>	Comorbid psychopathology in adolescents and young adults treated for substance use disorders: A review	10	The prevalence of comorbid psychiatric disorders varied from 61% to 88%. Externalizing disorders, especially Conduct Disorder (CD), were most consistently linked to SUD in treatment seeking adolescents. Girls are distinguished by their high rate of comorbid internalizing disorders. Comparison

## Mental Health Disorders and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			data from community and juvenile justice studies shows an ascending trend of comorbidity rates of externalizing disorders from community to clinical and finally to juvenile justice samples. It seems that young addicts with comorbid disorders are at high risk of ending up in the juvenile justice system.
<b>Singh et al. (2006)</b>	Co-occurrence of bipolar and attention-deficit hyperactivity disorders in children	-	<p>- Pediatric bipolar disorder (BPD) and attention-deficit hyperactivity disorder (ADHD) co-occur more frequently than expected by chance. There is a bidirectional overlap between BPD and ADHD in youth, with high rates of ADHD present in children with BPD (up to 85%), and elevated rates of BPD in children with ADHD (up to 22%).</p> <p>- Phenomenologic, genetic, family, neuroimaging, and treatment studies revealed that BPD and ADHD have both common and distinct characteristics. the literature most strongly suggests that ADHD symptoms represent a prodromal or early manifestation of pediatric-onset BPD in certain at-risk individuals. Bipolar disorder with comorbid ADHD may thus represent a developmentally specific phenotype of early-onset BPD. The etiology of comorbid BPD and ADHD is likely multifactorial.</p>
<b>Connor et al. (2010)</b>	A review of attention-deficit/hyperactivity disorder complicated by symptoms of oppositional defiant disorder or conduct disorder	-	Attention-deficit/hyperactivity disorder (ADHD) is a highly prevalent disorder with significant functional impairment. ADHD is frequently complicated by oppositional symptoms, which are difficult to separate from comorbidity with oppositional defiant disorder, conduct disorder, and aggressive symptoms. Oppositional defiant disorder or conduct disorder may be comorbid in more than half of ADHD cases and are more common with the combined than with the inattentive ADHD subtype. Comorbid symptoms of oppositional defiant disorder and conduct disorder in patients with ADHD can have a significant impact on the course and prognosis for these patients and may lead to differential treatment response to both behavioral and pharmacologic treatments. Oppositional symptoms are a key consideration in ADHD management.

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## **Summary of Results**

A total of 18 reviews were identified under the concept of mental health disorders that included pertinent research evidence regarding mental/emotional health outcomes, and meet the inclusion criteria for consideration in this chapter. The identified reviews can be organized according to the disorder or disorders that constitute their substantive focus. Seven clusters of reviews are presented, consisting of: Emotional Disorders; Disruptive Behavioural Disorders; Bipolar Disorder; Eating Disorders; ADD/ADHD; Substance Use Disorders; and Co-Morbid Mental Disorders.

The Emotional Disorders include both mood (e.g., depression) and anxiety (e.g., phobias). These disorders have been shown to be as common among preschoolers as they are among older children. The presence of these disorders (and even certain symptoms) very early in life is associated with longer-term harm to mental/emotional health. Emotional disorders in childhood are associated with impaired ability to cope with stress, greater sensitivity to stress, impaired mood repair, and greater likelihood of recurrent symptoms.

Disruptive Behavioural Disorders (DBDs), including Oppositional Defiant Disorder and Conduct Disorder, usually present clear symptoms by the second year after birth. These disorders produce distress to affected children as well as their family members and others. Attention-Deficit/Hyperactivity Disorder is strongly associated with negative effects on the quality of life (QoL) of parents, and is also associated with impaired QoL among children.

The diagnosis of Bipolar Disorder among youth has increased dramatically in the past decade, and this diagnosis overlaps with the phenomenon of severe mood dysregulation and its occurrence among children.

Eating Disorders include anorexia and bulimia, and occur across continua that include “partial eating disorders”. Psychopathology and adversity in childhood increases risk of eating disorders in adolescence, and these disorders are frequently accompanied by concurrent disorders that collectively exert a large negative influence on mental/emotional health.

A number of disorders frequently co-occur. These Comorbid Disorders exert a synergistic negative impact on mental/emotional health, and are less effectively treated than their constituent disorders when encountered independently. Common comorbid disorders include: depression with anxiety; substance use with conduct disorder; and ADHD with Oppositional Defiant Disorder. Substance Use Disorder commonly co-occurs with other mental disorders, and the use of substances in adolescence (including cigarette smoking) is associated with common mental disorders such as depression, anxiety, and the use of other substances.

## **Discussion**

A number of mental disorders commonly present throughout childhood and adolescence, and exert clear negative influences on cognitive, emotional, and social aspects of

development. Left unaddressed, these disorders tend to recur and adversely permeate an individual's life through their compromising influence on the attainment of maturational milestones. The signs and symptoms of most mental disorders are detectable by others including parents, health professionals, and teachers. Early overt signs include emotional dysregulation in infancy, social withdrawal in childhood, and the use of substances (e.g., binge drinking, cigarette smoking) in adolescence.

## Conclusion

Strong evidence exists associating child/adolescent mental disorders with compromised mental/emotional health. Universal screening in infancy can consider risk factors such as child temperament. The professional development of teachers and school counselors (or their fte representation in schools) can aid in the detection of those mental disorders that commonly present during school-aged years. Finally, cigarette smoking and binge drinking are indicative of risks to mental health, alongside other adverse consequences for healthy development.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Mental Health Disorders</b> <i>a. Universal screening post natal</i> <i>b. Cigarette smoking</i>	0 – 18 yrs	2.7%**	High Moderate	High Moderate	HA/MHS AHS, CCHS
** Percent of Canadian youth (age 12-19) reporting having been diagnosed by a health professional as having a mood disorder (i.e., depression, bipolar disorder, mania, or dysthymia)					

## Suicide & Suicidation

### Systematic Review of Suicide & Suicidation Related to Mental/Emotional Health

#### Background and Context

The purpose of this review is to find research evidence of an association between suicide and suicidation and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking suicide and suicidation. Suicidality in young people encompasses a range of behaviours including ideation, deliberate self-harm, suicide attempts and completed suicide. As the third leading cause of mortality among adolescents, and with as many as 3% of youth experiencing serious medical consequences as a result of attempted suicide<sup>42</sup>, suicide and suicidality among youth is a very serious concern.

#### Methodology and Provisional Results

##### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

##### Electronic Search Keywords

(MH "Suicide+")

**AND**

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

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<sup>42</sup> Spirito, A. & Esposito-Smythers, C. Attempted and completed suicide in adolescence. *Annual Review of Clinical Psychology*, 2006; 2, 237-66



The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>43</sup> and Web of Science<sup>44</sup> databases for reviews using key terms such as **(suicide OR attempted suicide) AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(suicide OR attempted suicide) AND children AND mental health**. Finally, as the most recent systematic reviews of the association of suicide and suicidation with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 262 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between suicide and suicidation and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 27.

#### Primary Exclusion

The abstracts and/or full versions of the 27 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link suicide and suicidation with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 4 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

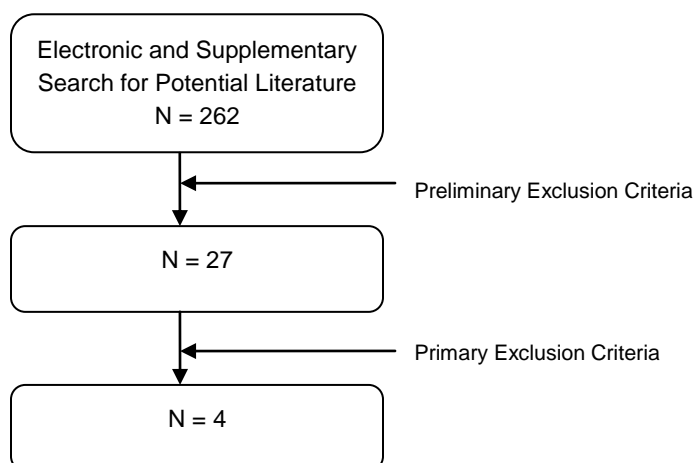
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<sup>43</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as ‘birth-17 years’.

<sup>44</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, ‘child\*’, ‘adolescen\*’ and ‘youth’ were included in the search definitions.

## Literature Review Volume Report

***Dimension:*** Mental / Emotional Health ***Concept:*** Suicide & Suicidation



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Suicide & Suicidation*

	<b>Title of Review</b>	<b>Lead Author</b>	<b>Year</b>	<b>Journal</b>	<b>Journal Impact Factor (2009)</b>	<b>Year Range of Studies</b>	<b>No. of Studies</b>
1	Attempted and completed suicide in adolescence	Spirito & Esposito-Smythers	2006	Annual Review of Clinical Psychology	9.613	-	-
2	Deliberate self-harm in adolescents	Portzky & van Heeringen	2007	Current Opinion in Psychiatry	3.574	2005-2006	-
3	Suicidal behaviour in children and adolescents. Part 1: Etiology and risk factors	Steele & Doey	2007	The Canadian Journal of Psychiatry-La Revue Canadienne de Psychiatrie	2.293	1966-2006	-
4	The association of suicide and bullying in childhood to young adulthood: A review of cross-sectional and longitudinal research findings	Klomek et al.	2010	The Canadian Journal of Psychiatry-La Revue canadienne de psychiatrie	2.293	-	31

## Detailed Results

For the 4 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

<b>Suicide &amp; Suicidation and Mental/Emotional Health</b> <i>Summary Table of Reviews</i>			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
<b>Spirito &amp; Esposito-Smythers (2006)</b>	Attempted and completed suicide in adolescence	-	Suicide is the third leading cause of death in adolescence, and medically serious suicide attempts occur in approximately 3% of adolescents. A prior suicide attempt is one of the best predictors of both a repeat attempt and eventual completed suicide. Depression, disruptive behavior disorders, and substance-use disorders also place adolescents at high risk for suicidal behavior, with comorbidity further increasing risk. Research on families indicates that suicidal behavior is transmitted through families. Groups at high risk for suicidal behavior include gay, lesbian, and bisexual youths, incarcerated adolescents, and homeless/runaway teens. Although abnormalities in the serotonergic system have not been consistently linked to suicidal behavior, genetic and neurobiologic studies suggest that impulsive aggression may be the mechanism through which decreased serotonergic activity is related to suicidal behavior.
<b>Portzky &amp; van Heeringen (2007)</b>	Deliberate self-harm in adolescents	-	Studies have confirmed that deliberate self-harm at a young age is an important indication of mental health problems in later life, including a strongly increased risk of subsequent suicidal behavior. Risk factors include the importance of depressive disorders, deficient problem solving, exposure to suicidal behavior and familial characteristics. The association between the use of antidepressants in depressed children and adolescents and the emergence of suicidal behavior continues to be a matter of debate due to the conflicting evidence from ecological or observational studies and meta-analyses.
<b>Steele &amp; Doey (2007)</b>	Suicidal behaviour in children and adolescents. Part 1: Etiology and risk factors	-	<ul style="list-style-type: none"> <li>- Suicide rates in youth are declining, but the reasons are speculative. Suicidal behaviour comprises a spectrum with differing frequencies and risk factors. While some risk factors are fixed, such as age and family history, others, such as psychiatric illness and stressors, may be amenable to intervention.</li> <li>- The frequency of suicidal behaviour escalates steeply from childhood through middle to late adolescence and into adulthood, with suicide rates peaking in the 19- to 23-year-old population; rates have decreasing slightly in recent years. Family, school, and peer conflicts play a major role during childhood and early teens, and the effect of major mental illness comes on later. Although the recent fall in suicide rates in adolescents is attributed by many to SSRIs and the other new antidepressants, there has been concern over the possible provocation of suicidal behaviour by these drugs in those under 18 years of age. Suicidality in young people encompasses a full range of behaviours, including ideation, deliberate self-harm, attempts, and completed suicide.</li> <li>- A complex interplay of risk factors facilitates suicidal behaviour among children and youth. These factors include age, sex, ethnicity (much higher risk among Native North Americans), psychiatric disorders, prior attempts, a preexisting cognitive profile (rigidity, poor problem solving, pessimism, impulsivity), abuse during childhood, dysfunctional family backgrounds, firearm availability, and stressful life events. The biological risk factors continue to be elucidated and include serotonergic and dopaminergic dysfunction. Positive, cohesive family relationships may be protective, but in general, protective factors have not been well studied.</li> </ul>

## Suicide & Suicidation and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Klomek et al. (2010)	The association of suicide and bullying in childhood to young adulthood: A review of cross-sectional and longitudinal research findings	31	<p>Bullying and peer victimization constitute more than correlates of suicidality. Cross-sectional findings indicate that there is an increased risk of suicidal ideation and (or) suicide attempts associated with bullying behaviour and cyberbullying. The few longitudinal findings available indicate that bullying and peer victimization lead to suicidality but that this association varies by sex.</p> <ul style="list-style-type: none"> <li>• Bullying and peer victimization are risk factors for later suicidality, especially when there is comorbid psychopathology.</li> <li>• Children who are involved in bullying behaviour should be actively screened for psychiatric problems and suicidality.</li> </ul>

### Bibliography for Summary Table

Spirito, A. & Esposito-Smythers, C. Attempted and completed suicide in adolescence. *Annual Review of Clinical Psychology*, 2006; 2, 237-66.

Portzky, G. & van Heeringen, K. Deliberate self-harm in adolescents. *Current Opinion in Psychiatry*, 2007; 20, 337-342.

Steele, M.M. & Doey, T. Suicidal behaviour in children and adolescents. Part 1: Etiology and risk factors. *The Canadian Journal of Psychiatry*, 2007; 52, (Supplement 1), 21S-33S.

Klomek, A.B., Sourander, A. & Gould, M. The association of suicide and bullying in childhood to young adulthood: A review of cross-sectional and longitudinal research findings. *Canadian Journal of Psychiatry-La Revue canadienne de psychiatrie*, 2010; 55(5), 282-288.

## Summary of Results

A total of four reviews were identified under the concept of suicide and suicidation that included pertinent research evidence regarding mental/emotional health outcomes. Suicidality in youth has very grave consequences in terms of both mortality and morbidity and as such, has been the subject of many studies. The articles included in this review focused on attempted and completed suicide, deliberate self-harm, and risk factors for suicidality.

A range of studies have examined the trajectories of adolescents who have attempted and completed suicide and have identified risk factors associated with suicidal behaviour. Individual risk factors include depression, disruptive behaviour disorders, abuse during childhood, dysfunctional family background, firearm availability, stressful life events and substance use disorders – with comorbid psychiatric conditions further increasing this risk. Engaging in self-harm at a young age has been identified as an important indication of mental health problems later in life and a strongly increased risk of subsequent suicidal behaviour. Suicidal behaviour has been shown to be transmitted through families; therefore individuals with family histories of suicidality may be at greater risk of suicide. A personal history of attempted suicide is one of the best predictors of future attempts and completed suicide, and thus an important indicator of risk<sup>45</sup>. Further, specific high-risk groups of youth have been identified as being at greater risk of suicidality including gay, lesbian and bisexual youth, youth in the criminal justice system, and homeless/runaway teens. While studies have identified a wide range of indicators of youth suicide risk, protective factors have not been well studied<sup>46</sup>.

The review conducted by Steele & Doey (2007) stated that suicide rates in youth are declining, but that the explanations for this trend are largely speculative. It has been suggested that this decline in suicide rates may be attributable to increased availability and utilization of prescription Selective Serotonin Reuptake Inhibitors (SSRIs) and other new antidepressants. Unlike some risk factors, which are arguably fixed (i.e. age, family history), suicidal ideation resulting from psychiatric illness and stressful life events may be amenable to preventative intervention (i.e. psychoactive medication) – possibly explaining the trend of decreasing youth suicide rates.

Findings from both cross-sectional and longitudinal research studies show an association between bullying in childhood and suicide. In the review conducted by Klomek et al. (2010), an increased risk of suicidality and suicide was observed with respect to bullying behaviour and cyberbullying. Further, among the few longitudinal studies, findings

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<sup>45</sup> Spirito, A. & Esposito-Smythers, C. Attempted and completed suicide in adolescence. *Annual Review of Clinical Psychology*, 2006; 2, 237-66.

<sup>46</sup> Steele, M.M. & Doey, T. Suicidal behaviour in children and adolescents. Part 1: Etiology and risk factors. *The Canadian Journal of Psychiatry*, 2007; 52, (Supplement 1), 21S-33S.

consistently showed that bullying and peer victimization are risk factors for later suicidality, and this risk is compounded in the presence of comorbid psychopathology.

### Potential Indicator Sources

Statistics Canada routinely collects and reports statistics on suicide at the population level stratified by age and gender. The Canadian Community Health Survey (CCHS) additionally collects population level data on certain known risk factors for suicide including substance use, and mental health problems.

### Discussion

The reviews of the extant evidence regarding youth suicidality highlight the importance of knowing and understanding key risk factors in order to identify opportunities for early identification and to facilitate intervention. As identified in the results section above, numerous specific risk factors have been identified and have shown utility as indicators of suicidality and suicide risk. As such, interventions that target individuals showing these early warning signs are likely to translate to meaningful outcomes in terms of fewer attempts and completed suicides. While the body of literature describing known risk factors is fairly extensive, limited empirical evidence exists that explains the protective factors that prevent suicidality. Understanding the role of protective factors would help in designing health promoting strategies with the potential to further prevent youth suicidality at the population level.

### Conclusion

Age and gender specific rates of suicide are an extremely important indicator of multiple causal pathways leading to mortality. Evidence suggests that a number of these pathways are subject to modification through public policies and initiatives, ranging from programs that address bullying in schools to the detection and treatment of psychiatric disorders among youth.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Suicide &amp; Suicidation</b> <i>rates of suicide</i>	10 – 14 yrs	1.6***	High	High	Vital Statistics
	15 – 19 yrs	8.3***			
*** Suicide rate per 100,000 population (2007)					

## **Mental Health System Utilization**

### **Systematic Review of Mental Health System Utilization Related to Mental/Emotional Health**

#### **Background and Context**

The purpose of this review is to find research evidence of an association between mental health system utilization and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking mental health system utilization. Access to appropriate care and resources has an important impact on the experience of mental illness among children and youth. The mental health system is a term that makes broad reference to services and health human resources that have expertise regarding the promotion of mental health and the treatment of mental disorders among children and youth. Diverse health professionals are included in these activities, including medical (e.g., paediatricians, child/adolescent psychiatrists) and non-medical (e.g., child/adolescent psychologists) clinicians. These clinicians and other relevant resources are governed through diverse structures, and are less well coordinated with one another than the term "system" might imply.

#### **Methodology and Provisional Results**

##### **Initial Search Process**

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

##### **Electronic Search Keywords**

(MH "Mental Health Services+")

**AND**

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")



Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>47</sup> and Web of Science<sup>48</sup> databases for reviews using key terms such as **(mental health services) AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(mental health services) AND children AND mental health**. Finally, as the most recent systematic reviews of the association of mental health system utilization with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 351 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between mental health system utilization and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 35.

#### Primary Exclusion

The abstracts and/or full versions of the 35 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link mental health system utilization with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 7 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

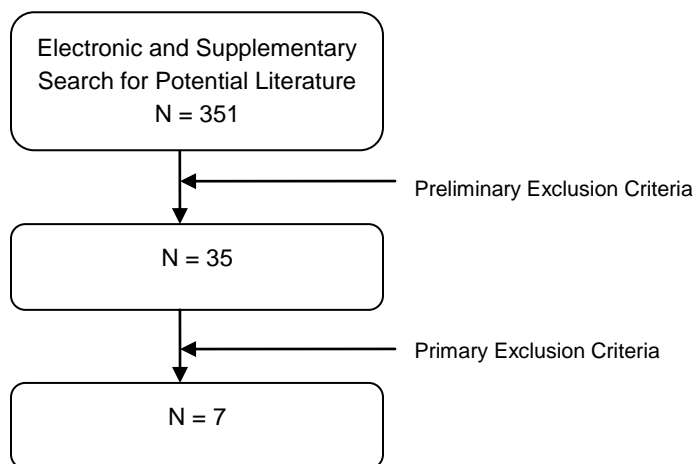
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<sup>47</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as ‘birth-17 years’.

<sup>48</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, ‘child\*’, ‘adolescen\*’ and ‘youth’ were included in the search definitions.

## Literature Review Volume Report

**Dimension:** Mental / Emotional Health **Concept:** Mental Health System Utilization



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Mental Health System Utilization*

	<b>Title of Review</b>	<b>Lead Author</b>	<b>Year</b>	<b>Journal</b>	<b>Journal Impact Factor (2009)</b>	<b>Year Range of Studies</b>	<b>No. of Studies</b>
1	Pathways to care for children with mental health problems	Sayal, K.	2006	Journal of Child Psychology and Psychiatry	4.983	-	-
2	ADHD service use patterns in youth	Leslie & Wolraich	2007	Journal of Pediatric Psychology	3.050	1988-2005	40
3	Children's mental health emergencies - Part 1- Challenges in care: Definition of the problem, barriers to care, screening, advocacy, and resources	Baren et al.	2008	Pediatric Emergency Care	n/a	-	-
4	Transition of care from child to adult mental health services: the great divide	Singh, S.P.	2009	Current Opinion in Psychiatry	3.574	-	-
5	Connecting youth with health services: Systematic review	Anderson & Lowen	2010	Canadian Family Physician-Le Médecin de famille canadien	n/a	1996-2008	24
6	Stigma in child and adolescent mental health services research	Heflinger & Hinshaw	2010	Administration and Policy in Mental Health	1.780	-	-
7	Access to treatment for adolescents with substance use and co-occurring disorders: Challenges and opportunities	Sterling et al.	2010	Journal of the American Academy of Child & Adolescent Psychiatry	4.983	-	-

## Detailed Results

For the 7 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Mental Health System Utilization and Mental/Emotional Health			
Summary Table of Reviews			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Sayal, K. (2006)	Annotation: Pathways to care for children with mental health problems	-	Although many children with mental health problems are in contact with primary health care services, few receive appropriate help. Following parental awareness of child symptoms, parental perception of problems is the key initial step in the help-seeking process. Although children with mental health problems or disorders are regular attenders within primary care and most parents acknowledge that it is appropriate to discuss concerns about psychosocial issues in this setting, few children are presented with mental health symptoms even if their parents have such concerns. Subsequently, less than half of children with disorders are recognised in primary care. Amongst recognized children, about half are referred to specialist services. Overall, up to one-third of children with disorders receive services for mental health problems. Factors such as the type and severity of disorder, parental perceptions, child age and gender, and family and social background factors determine which affected children access services.
Leslie & Wolraich (2007)	ADHD service use patterns in youth	40	<p>- The primary care, mental health, and educational service system sectors all play an essential role in caring for youth with ADHD. Recent studies suggest there is an increasing use of stimulants and other psychoactive medication for youth with ADHD, decreasing mental health visits for ADHD unassociated with medication use, increased use of other psychotropic medications, and a number of barriers to care coordination across primary care, mental health, and schools.</p> <p>- It is clear that the current service use for youth with ADHD is highly variable and that, whereas good evidence-based information is available about diagnosing and treating children with ADHD, much still needs to be done in order to translate the science into practice and improve the care of children with this condition. In addition, data regarding trends over time and factors affecting service use are much more detailed for medication use than for mental health visits. Finally, there is a serious paucity of available literature regarding service use in the educational sector.</p>
Baren et al. (2008)	Children's mental health emergencies - Part 1- Challenges in care: Definition of the problem, barriers to care, screening, advocacy, and resources	-	The national increase in children's mental disorders is having a dramatic effect on emergency departments (ED). There are numerous barriers and challenges to appropriate recognition, screening, and intervention. Emergency departments would best serve children with mental health emergencies by establishing collaborative efforts with social service agencies, psychologists and psychiatrists, local mental health agencies, schools, and mental health advocacy groups. These relationships create a continuum of care for the child and promote better identification of pediatric and adolescent patients with mental disorders. Early recognition and intervention are key to effective referral and treatment.
Singh, S.P. (2009)	Transition of care from child to adult mental health services: the great divide	-	This review is a synthesis of current research and policy literature focusing on barriers at the interface between child and adolescent mental health services and adult mental health services, and outcomes associated with poor transition between service systems. Adolescence is a risk period for emergence of serious mental disorders. Child and adolescent mental health services and adult mental health services use rigid age cut-offs to delineate service boundaries, creating discontinuities in provision of care. Poor

## Mental Health System Utilization and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			transition leads to disruption in continuity of care, disengagement from services, and is likely to lead to poorer clinical outcomes. Some young people, such as those with neurodevelopmental disorders and complex needs, are at a greater risk of falling through the care gap during transition. Services need robust and high-quality evidence on the process and outcomes of transition so that effective intervention strategies can be developed.
<b>Anderson &amp; Lowen (2010)</b>	Connecting youth with health services: Systematic review	24	<ul style="list-style-type: none"> <li>- This article reviews the literature to identify models of health care delivery that provide youth with opportunities to readily access service and to initiate and develop relationships with health and mental health care providers.</li> <li>- Almost half of teenagers are at moderate to high risk of adverse health outcomes due to high-risk sexual behaviour, psychosocial pressures, substance abuse, and lifestyle choices.</li> <li>- Youth might not consult their family physicians for matters related to substance use, sexual health, or personal and emotional problems, because of concerns about confidentiality and discomfort with difficult subjects.</li> <li>- School-based and community-based health care centres might be better positioned to meet the needs of youth than traditional office-based practices are.</li> <li>- The health needs and challenges of youth are often predictable. Available evidence highlights the importance of including youth experience and voices in planning, delivery, and evaluation of services.</li> <li>- The literature clearly indicates a need for a rational, comprehensive, and integrated approach to health care services for youth.</li> </ul>
<b>Heflinger &amp; Hinshaw (2010)</b>	Stigma in child and adolescent mental health Services research	-	To understand the low utilization rates of child and adolescent mental health services, it is necessary to recognize the kinds of professional and institutional stigma that may produce barriers to care. There is a large literature on the stigmatization of mental illness, linkages between such literature and children's mental health services use, and the kinds of professional and institutional attitudes and practices that communicate shame and low expectations to youth and their families. It will take recognition of such stigmatizing practices—including overcoming resistance to the messages presented herein—to make real progress in the effort to increase utilization of evidence-based practices.
<b>Sterling et al.</b>	Access to treatment for adolescents with substance use and co-occurring disorders: Challenges and opportunities	-	<ul style="list-style-type: none"> <li>- This article examines the literature on adolescent access to alcohol and drug services, including early intervention, and integrated and specialty mental health treatment for those with co-occurring disorders. The researchers examine the role of health care systems, public policy (health reform), treatment financing and reimbursement systems (public and private), implementation of evidence-based practices, confidentiality practices, and treatment costs and cost/benefits in relation to the needs of adolescents.</li> <li>- Barriers to treatment, particularly integrated treatment, are largely rooted in an organizationally fragmented health care system, which encompasses public and private, carved-out and integrated systems, each with different funding mechanisms. In both systems, carved-out programs de-link services from other mental health and general health care. (U.S. context)</li> <li>- Barriers are also rooted in disciplinary differences and weak clinical linkages between psychiatry, clinical psychology, primary care and substance use, and in confidentiality policies that inhibit communication and coordination in the name of protecting patient privacy.</li> </ul>

### **Bibliography for Summary Table**

Sayal, K. Annotation: Pathways to care for children with mental health problems. *Journal of Child Psychology and Psychiatry*, 2006; 47(7), 649-659.

Leslie, L.K. & Wolraich, M.L. ADHD service use patterns in youth. *Journal of Pediatric Psychology*, 2007; 32(6), 695-710.

Baren, J.M., Mace, S.E., Hendry, P.L., Dietrich, A.M. Grupp-Phelan, J. & Mullin, J. Children's mental health emergencies - Part 1- Challenges in care: Definition of the problem, barriers to care, screening, advocacy, and resources. *Pediatric Emergency Care*, 2008; 24(6), 399-408.

Singh, S.P. Transition of care from child to adult mental health services: the great divide. *Current Opinion in Psychiatry*, 2009; 22, 386-390.

Anderson, J.E. & Lowen, C.A. Connecting youth with health services: Systematic review. *Canadian Family Physician-Le Médecin de famille canadien*, 2010;56, 778-84.

Heflinger, C.A. & Hinshaw, S.P. Stigma in child and adolescent mental health services research. *Administration and Policy in Mental Health* , 2010; 37, 61-70.

Sterling, S., Weisner, C., Hinman, A. & Parthasarathy, S. Access to treatment for adolescents with substance use and co-occurring disorders: Challenges and opportunities. *Journal of the American Academy of Child & Adolescent Psychiatry*, 2010; 49(7), 637-646.

## Summary of Results

A total of seven reviews were identified under the concept of mental health system utilization that included pertinent research evidence regarding mental/emotional health outcomes. Each of these reviews focused on a different aspect of mental health system utilization either from the perspective of a specific mental disorder, or from the perspective of accessibility. Results show that in general children with mental illnesses are underserved by mental health services, and that among children with mental disorders approximately only one-third receives services for these problems. Several factors related to poor mental health service utilization rates have been identified in the extant research literature and are discussed as follows.

Two reviews focused on disorder-specific aspects of service utilization, which included service use among children with attention deficit/hyperactivity disorder (ADHD) and adolescents with substance use and co-occurring disorders. Primary care, mental health, and education system sectors were identified as playing key roles in caring for youth with mental disorders, particularly with respect to ADHD. Recent literature has identified trends of increasing stimulant and other psychoactive medication use for youth with ADHD, and decreasing mental health visits unassociated with medication use<sup>49</sup>. Findings suggest that service use patterns among youth with ADHD are highly variable and while prescription medication use is well documented, less is known about mental health visits with specialized service providers. While the education system stands out as a viable point of access to service for ADHD, little information is presently available regarding service use in this sector. Conclusions derived from the review conducted by Sterling et al. (2010) suggest that youth experiencing concurrent mental illness and substance use face considerable barriers to appropriate service use due to institutionally rooted fragmentation in service delivery. Mental health service and substance use treatment tend to be poorly integrated, often as a result of disciplinary differences, funding mechanisms, and conflicting philosophies. Consequently, youth experiencing concurrent disorders face multiple barriers to service use, adversely impacting the trajectory of their recovery.

Much of the literature concerning mental health system utilization has focused on issues related to accessibility, including pathways into mental health service, navigational issues, and barriers to appropriate service use. Youth are likely to present with acute mental health issues through primary care and emergency services; however, these services are often ill equipped to identify and deal with mental health issues directly. Further, perceptions of stigma associated with mental illness and substance use in particular, may inhibit youth from seeking services through their primary care physicians. School or community-based health centres may be better positioned to meet the needs of young people seeking help. The disconnection between institutional and community based services further undermines comprehensive service access and disrupts individual continuity of care. Reviewers have suggested various means by which to improve mental health service engagement among youth, including better collaboration between

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<sup>49</sup> Leslie, L.K. & Wolraich, M.L. ADHD service use patterns in youth. *Journal of Pediatric Psychology*, 2007; 32(6), 695-710.

institutional care services (i.e. hospitals/emergency departments), community health and social service providers, schools and mental health advocacy groups, in order to improve the continuity of care between these different sectors. The continuum of care is further disrupted by the fact that mental health services for youth and adults are generally segregated, and the transition from youth to adult services is often poorly managed. The chronological fact of adulthood signals a point where many older youth will lose contact with essential services, leading to poorer clinical outcomes and impaired mental/emotional health.

## Discussion

Mental health service utilization for children and youth experiencing mental illness is an important concept to consider in terms of accessibility and continuity of care. As highlighted by the reviews described previously, perceptions of stigma, barriers to access, fragmentation and discontinuities between services all have detrimental implications for engagement in appropriate services and clinical outcomes, producing decrements in the mental/emotional health of children and youth.

## Conclusion

Important measures of the mental health system include choice between and timely access to evidence based services for children and adolescents with substance use and mental disorders. Continuity of care throughout childhood, adolescence, and adulthood is another important measure with strong implications for mental/emotional health. The measurement of these variables requires direct consultation with parents of children and adolescents seeking care. Unfortunately, no existing sources of data are known. More positively, improvements in this domain are overwhelmingly subject to the influence of government, including policy decisions and related legislation.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Mental Health System Utilization</b> <i>Continuity of care through development</i>	0 – 20 yrs	-	High	High	Unknown



## Prescription Drug Utilization

# Systematic Review of Prescription Drug Utilization Related to Mental/Emotional Health

## Background and Context

The purpose of this review is to find research evidence of an association between prescription drug utilization and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking and monitoring relevant phenomena related to prescription drug utilization. The use of prescription drugs by children and youth has been cited as a contributor to reductions in suicide, and improved academic performance among individuals with ADHD. By contrast, prescription drugs have been implicated as a risk factor for self-harm, and the misuse of prescription medicines has emerged as risk factor for the use of illicit drugs.

## Methodology and Provisional Results

### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

### Electronic Search Keywords

(MH "Drug Therapy+" OR "pharmacotherapy" OR MH "Pharmaceutical Preparations+")

## AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary

search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>50</sup> and Web of Science<sup>51</sup> databases for reviews using key terms such as **(prescription drug utilization) AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(prescription drug utilization) AND children AND mental health**. Finally, as the most recent systematic reviews of the association of prescription drug utilization with mental/emotion health was dated 2010, an update related to more recent studies was not pursued.

Taken together, the search processes returned 2,740 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between prescription drug utilization and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 67.

#### Primary Exclusion

The abstracts and/or full versions of the 67 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link prescription drug utilization with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There were 33 reviews remaining in the list following primary exclusion.

#### Secondary Exclusion

Studies that were deemed to be of lesser quality or usefulness were excluded. This secondary exclusion step yielded a final total of 10 reviews, as reflected in the following Volume Report and subsequent table of results.

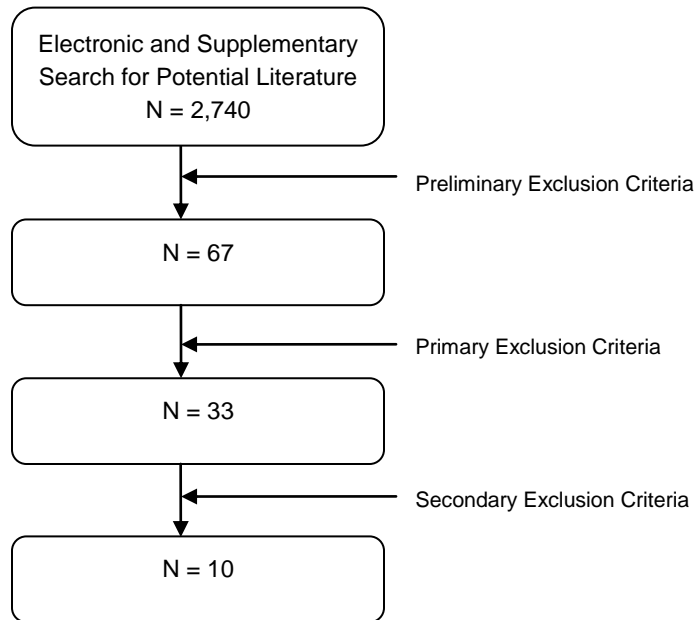
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<sup>50</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as 'birth-17 years'.

<sup>51</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.

## Literature Review Volume Report

**Dimension:** Mental / Emotional Health **Concept:** Prescription Drug Utilization



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Prescription Drug Utilization*

	<b>Title of Review</b>	<b>Lead Author</b>	<b>Year</b>	<b>Journal</b>	<b>Journal Impact Factor (2009)</b>	<b>Year Range of Studies</b>	<b>No. of Studies</b>
1	Children with schizophrenia: Clinical picture and pharmacological treatment	Masi et al.	2006	CNS Drugs	n/a	-	27
2	Pharmacological treatment options for panic disorder in children and adolescents	Masi et al.	2006	Expert Opinion on Pharmacotherapy	n/a	-	-
3	Systematic review of pharmacotherapy of disruptive behavior disorders in children and adolescents	Ipser & Stein	2007	Psychopharmacology	n/a	1970-2006	30
4	Pharmacological treatment of pathologic aggression in children	Barzman & Findling	2008	International Review of Psychiatry	2.172	1985-2006	6
5	Evidence-based treatments for alcohol use disorders in adolescents	Deas, D.	2008	Pediatrics	n/a	1990-2004	14
6	Long-term safety of stimulant medications used to treat children with ADHD	Lerner & Wigal	2008	Journal of Psychosocial Nursing and Mental Health Services	0.707	-	-
7	Treatment of preschoolers with attention-deficit/hyperactivity disorder	Murray, D.W.	2008	Current Psychiatry Reports	n/a	1989-2008	9
8	Efficacy of methylphenidate, psychosocial treatments and their combination in school-aged children with ADHD: A meta-analysis	Van der Oord et al.	2008	Clinical Psychology Review	4.901	1985-2006	26
9	Pharmacotherapy of major depressive disorder in adolescents	Masi et al.	2010	Expert Opinion on Pharmacotherapy	n/a	-	-
10	Atypical antipsychotics for acute manic and mixed episodes in children and adolescents with bipolar disorder: Efficacy and tolerability	Singh et al.	2010	Drugs	n/a		

## Detailed Results

For the 10 reviews identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Prescription Drug Utilization and Mental/Emotional Health			
Summary Table of Reviews			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Masi et al. (2006)	Children with schizophrenia: Clinical picture and pharmacological treatment	27	<p>- Awareness of childhood-onset schizophrenia is rapidly increasing, with a more precise definition now available of the clinical picture and early signs, the outcome and the treatment strategies. The main diagnostic challenges are with differentiating childhood-onset schizophrenia from affective disorders (both depression and bipolar disorder) with psychotic symptoms, pervasive developmental disorders and severe personality disorders. Post-traumatic stress disorder and obsessive-compulsive disorder without insight may also be misdiagnosed as schizophrenia.</p> <p>- In the context of a multimodal approach, including behavioral, social, scholastic and familial interventions, a pharmacological treatment is usually the core treatment. Available experience from the few controlled studies, open studies and case reports on pharmacotherapy in children with schizophrenia aged &lt;12 years is critically analysed in this review, with particular reference to the use of atypical antipsychotics in clinical practice.</p> <p>- Empirical evidence for the efficacy of antipsychotic medications in prepubertal children is still scarce. Antipsychotics seem to be effective in treating acute symptoms in schizophrenic children, even if the long-term prognosis of the illness often remains poor. The tolerability of antipsychotics in young children is a major issue, mostly during long-term treatment. Although atypical antipsychotics seem safer than the older conventional agents, weight gain and related complications and hyperglycaemia and hypercholesterolaemia require careful monitoring. Further research, with placebo-controlled studies, as well as long-term, naturalistic follow-up of large cohorts of these young patients is warranted.</p>
Masi et al. (2006)	Pharmacological treatment options for panic disorder in children and adolescents	-	<p>Although panic disorder usually emerges in early to middle adulthood, adults with panic disorder often retrospectively report that their panic symptoms began in childhood or early adolescence. The majority of these juvenile cases are being misdiagnosed, and/or do not come to clinical attention. Awareness of early-onset panic disorder, as well as a more precise definition of early signs and possible clinical subtypes, can favour timely diagnosis and treatment, reduce clinical impairment and improve the prognosis of these patients. In the context of a multimodal approach, supportive psychotherapy can increase the subjects' coping capacities, and pharmacological treatment can be helpful. However, data supporting efficacy are still limited.</p>
Ipser & Stein (2007)	Systematic review of pharmacotherapy of disruptive behavior disorders in children and adolescents	30	<p>The aim of this work is to determine whether medication is effective in treating pediatric disruptive behavior disorders (DBD) and related problems of impulse control, as well as to examine differences in the treatment response and tolerability of different medication classes and agents. There is some evidence of the effectiveness of medication in treating DBDs, with positive outcomes for lithium and risperidone in particular. Pharmacotherapy also demonstrated some efficacy in reducing symptoms of aggression. Medication was relatively well-tolerated, as indicated by equivalent dropout rates in medication and comparison groups.</p>

## Prescription Drug Utilization and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			There are relatively few controlled trials of the pharmacotherapy of disruptive behavior disorders or other impulse control disorders, despite the importance of research in this area. Given the potential adverse effects of agents such as lithium and risperidone, a careful risk–benefit analysis is needed for each patient.
<b>Barzman &amp; Findling (2008)</b>	Pharmacological treatment of pathologic aggression in children	6	Children with psychiatric illness may display pathologic aggression (PA) that is destructive, severe, chronic, and unresponsive to psychosocial and psychopharmacological treatment of their underlying condition(s) and psychosocial interventions specifically targeting PA. For this subset of children with PA, pharmacotherapy may be an appropriate treatment option to optimize their functioning. This article reviews pharmacological treatment studies for PA in children and the safety and efficacy of risperidone, olanzapine, lithium, divalproex sodium, methylphenidate, and typical antipsychotics in this patient population. While safety needs to be emphasized when prescribing medication for these patients, serious health and safety risks are also raised when PA is not effectively treated. Future research is needed to evaluate whether the long-term risks associated with the pharmacological treatment of PA outweigh the potential benefits to the child.
<b>Deas, D. (2008)</b>	Evidence-based treatments for alcohol use disorders in adolescents	14	<ul style="list-style-type: none"> <li>- The prevalence of adolescent alcohol use and its related consequences underscore the need for evidenced-based treatments in this population. During the past decade, much progress has been made in treating adolescent alcohol use disorders with evidenced-based modalities developed specifically for adolescents. Psychosocial treatments such as family-based interventions, motivational enhancement therapy (motivational interviewing), behavioral therapy, and cognitive-behavioral therapy, as well as the limited pharmacotherapy studies, are discussed in this review. All of the studies used assessment tools validated for use in adolescent populations.</li> <li>- Most studies assessed and targeted multiple substances of abuse, which reflects the fact that adolescents tend to use multiple substances. Alcohol and marijuana are the most common substances of abuse among adolescents and frequently represent co-occurring substance use disorders.</li> <li>- Pharmacological treatment of adolescent alcohol use disorders has lagged behind that of psychosocial treatments. Although clinicians are not reluctant to use pharmacotherapy to treat adolescents with psychiatric disorders, medications are rarely used to target alcohol use disorders directly. When medications are used in this population, they are often used to counteract adverse effects of alcohol withdrawal or to treat co-occurring psychiatric disorders. The extant literature reveals only 2 double-blind, placebo-controlled trials targeting adolescents with AOD use disorders. And conclusive statements regarding the impact of cognitive development could not be made, given the variance among clients. Future studies may be enhanced by the use of state-of-the-art assessment instruments designed specifically to assess AOD use in adolescents.</li> </ul>
<b>Lerner &amp; Wigal (2008)</b>	Long-term safety of stimulant medications used to treat children with ADHD	-	<p>This article reviews the emerging literature on the safety of long-term stimulant medications in ADHD—the most commonly prescribed medications for this condition.</p> <ul style="list-style-type: none"> <li>- Because attention-deficit/hyperactivity disorder (ADHD) is a chronic condition and typically requires effective treatment for several years or more, information on the benefits and risks of long-term pharmacotherapy for ADHD is vital.</li> <li>- The possible negative effects of long-term stimulant medication for ADHD (e.g., loss of appetite, temporary weight loss, minor increases in blood pressure and heart rate) can be tracked and are clinically</li> </ul>

## Prescription Drug Utilization and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			<p>significant for a minority of patients.</p> <ul style="list-style-type: none"> <li>- The minor side effects that commonly occur with the initiation of stimulant medication may dissipate over time, or with adjustments to dosage and timing.</li> <li>- The benefits versus risks of long-term ADHD treatment should be weighed individually for all children, and ongoing safety monitoring is one of the continuing responsibilities of the prescribing clinician.</li> </ul>
<b>Murray, D.W. (2008)</b>	Treatment of preschoolers with attention-deficit/hyperactivity disorder	9	<p>This article reviews the current treatment literature for attention-deficit/hyperactivity disorder (ADHD) in preschoolers. Parent training studies show consistent behavioral improvements reported by teachers and observers as well as parents, with evidence of clinically significant improvement in ADHD symptoms for up to 2 years. There is evidence to support the benefit of immediate-release stimulant medication for up to 1 year; however, effects do not seem to be as large, and some of the side effects may be greater than for school-age children. With regard to non-stimulants such as atomoxetine, there are literally no controlled outcome data for children with ADHD who are younger than 5 years of age. Overall, a great deal remains to be learned about the safety and efficacy of pharmacotherapy in this age group.</p>
<b>Van der Oord et al. (2008)</b>	Efficacy of methylphenidate, psychosocial treatments and their combination in school-aged children with ADHD: A meta-analysis	26	<ul style="list-style-type: none"> <li>- This meta-analysis compares effect-sizes of methylphenidate and psychosocial treatments and their combination on ADHD, concurrent oppositional, conduct symptoms, social behaviors and academic functioning. ADHD outcomes showed large mean weighted effect-sizes for both methylphenidate and combined treatments, psychosocial treatments had a moderate mean weighted effect-size; a similar pattern emerged for oppositional and conduct related behavior symptoms. Social behavior outcomes showed comparable moderate mean weighted effect-sizes for all treatments, while on academic functioning, all treatments had low mean weighted effect-sizes. There was no correlation between duration of psychosocial treatment and effect-size.</li> <li>- Both methylphenidate and psychosocial treatments are effective in reducing ADHD symptoms. However, psychosocial treatment yields smaller effects than both other treatment conditions. Psychosocial treatment has no additional value to methylphenidate for the reduction of ADHD and teacher rated ODD symptoms. However, for social behavior and parent rated ODD the three treatments were equally effective. For improvement of academic functioning no treatment was effective.</li> </ul>
<b>Masi et al. (2010)</b>	Pharmacotherapy of major depressive disorder in adolescents	-	<p>At any one time, major depressive disorder (MDD) affects 4 - 6% of adolescents. When untreated, MDD leads to a high immediate and subsequent suicide risk, long-term chronicity and a poor psychosocial outcome. Whereas psychotherapy can be effective in mild depression, it seems to be less effective in moderate and severe depression. However, the use of antidepressants has decreased in recent years due to the emergence of suicidality during antidepressant treatment.</p> <ul style="list-style-type: none"> <li>- Major depressive disorder (MDD) in adolescence is frequent, tends to recur, and is a major risk factor for poor social outcomes, future psychopathology, suicidal attempts and completed suicide.</li> <li>- The efficacy of psychotherapy, alone or in association with pharmacotherapy, is reduced in more severe depression.</li> <li>- The majority of studies using fluoxetine suggest the superiority of this medication over placebo. Weaker and/or inconsistent data are available on escitalopram, sertraline and citalopram. The magnitude of the antidepressant effect of the selective serotonin reuptake inhibitors (SSRIs) is 'small to moderate'.</li> <li>- Data from controlled studies suggest a weak but consistent increased risk for suicidality for all the</li> </ul>

## Prescription Drug Utilization and Mental/Emotional Health

### Summary Table of Reviews

Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
			antidepressants. However, epidemiological studies do not support a relationship between use of antidepressants and suicide rate in the community. - Findings indicate that an effective treatment of depression is a major route for reducing suicide risk in youths, whereas failure to improve depression results in suicidal events
<b>Singh et al. (2010)</b>	Atypical antipsychotics for acute manic and mixed episodes in children and adolescents with bipolar disorder: Efficacy and tolerability	-	The diagnosis of bipolar disorder (BD) in children is increasing, and often requires a comprehensive treatment plan to address a complex array of symptoms and associated morbidities. Pharmacotherapy, in combination with psychotherapeutic interventions, is essential for the treatment and stabilization of disrupted mood. Current evidence collectively demonstrates, by randomized controlled design, that atypical antipsychotics have efficacy for the treatment of acute manic or mixed symptoms in children and adolescents with BD.

### Bibliography for Summary Table

Masi, G., Mucci, M., & Pari, C. Children with schizophrenia: Clinical picture and pharmacological treatment. *CNS Drugs*, 2006; 20(10), 841-866.

Masi, G., Pari, C., & Millepiedi, S. Pharmacological treatment options for panic disorder in children and adolescents. *Expert Opinion on Pharmacotherapy*, 2006; 7(5), 545-554.

Ipser, J. & Stein, D.J. Systematic review of pharmacotherapy of disruptive behavior disorders in children and adolescents. *Psychopharmacology*, 2007; 191, 127-140.

Barzman, D.H & Findling, R.L. Pharmacological treatment of pathologic aggression in children. *International Review of Psychiatry*, 2008; 20(2), 151-157.

Deas, D. Evidence-based treatments for alcohol use disorders in adolescents. *Pediatrics*, 2008; 121 Suppl 4, S348-S354.

Lerner, M., & Wigal, T. Long-term safety of stimulant medications used to treat children with ADHD. *Journal of Psychosocial Nursing and Mental Health Services*, 2008; 46(8), 38-48.

Murray, D. W. Treatment of preschoolers with attention-deficit/hyperactivity disorder. *Current Psychiatry Reports*, 2008; 12(5), 374-381.

Van der Oord, S., Oosterlaan, P.J. & Emmelkamp, P.M.G. Efficacy of methylphenidate, psychosocial treatments and their combination in school-aged children with ADHD: A meta-analysis. *Clinical Psychology Review*, 2008; 28,783-800.



Masi, G., Liboni, F., & Brovedani, P. Pharmacotherapy of major depressive disorder in adolescents. *Expert Opinion on Pharmacotherapy*, 2010; 11(3), 375-386.

Singh, M. K., Ketter, T. A., & Chang, K. D. Atypical antipsychotics for acute manic and mixed episodes in children and adolescents with bipolar disorder: Efficacy and tolerability. *Drugs*, 2010; 70(4), 433-442.

## Summary of Results

A total of 10 reviews were identified under the concept of prescription drug utilization that met inclusion criteria for our search and contained relevant research evidence regarding mental/emotional health outcomes. The available literature examines the relationship between prescription drugs and a number of mental disorders and behavioural disruptions among children and youth.

The early detection of child-onset schizophrenia has been a major development in psychiatric practice, leading to earlier and longer-term prescription drug use among prepubertal children. Evidence suggests that a number of challenges and uncertainties are associated with this area of practice, including differential diagnosis, tolerability of medications and side effects, and an unclear impact of treatment on development generally – or on the long-term course of schizophrenia. The use of atypical medications is indicated for both psychotic disorders and acute manic and bipolar disorder among children and adolescents. However, the efficacy of these medications is accompanied by side effects that are well known in the short term, and more poorly understood over time.

Prescription medications for major depressive disorder are indicated for the subset of children and youth who have severe symptoms. The majority of instances of MDD will be of lower severity, and can be treated effectively with psychotherapy. There is a small but consistent risk for suicidality associated with antidepressant prescription drugs among children and youth. Anxiety disorders commonly have their onset in childhood, but evidence indicates they are often not detected for many years. Evidence supports greater vigilance in screening for anxiety disorders.

Considerable research has examined pharmacotherapy and psychosocial interventions for Attention-Deficit Hyperactivity Disorders (ADHD). Among preschool-aged children there is limited evidence supporting the effectiveness of immediate-release stimulants, and no trial-level evidence for non-stimulant medications. Psychosocial interventions (i.e., parent training) are consistently associated with improvements as rated by teachers, parents, and independent observers. Comparisons between psychosocial (PS), pharmacotherapeutic (PH), and combined treatments (CT) for ADHD have produced the following results: both PS and PH are effective in reducing ADHD symptoms; all three treatments produce improvements in social behaviour, while none are particularly effective at improving academic functioning. The long-term effectiveness of stimulant medications is associated with known side effects including loss of appetite, and minor increases in blood pressure and heart rate. Careful and continuous monitoring is indicated.

Several studies have begun advancing knowledge in new areas of pharmacotherapy among children and youth. This research addresses disruptive and aggressive behavioural syndromes, as well as the field of alcohol and substance use. Disruptive behaviour and pathological aggression are relatively uncommon but serious accompaniments to other mental disorders. The use of prescription medications for the treatment of these conditions is showing promise. But the incipient status of knowledge in this area requires a careful risk-benefit analysis on a case by case basis. Similarly, knowledge regarding the

effective use of prescription drugs in the treatment of child/youth alcohol and drug related disorders is in a relatively early stage of development. Research over the past decade has led to the refinement of several psychosocial interventions for child/adolescent substance use, including family-based interventions, motivational enhancement therapy (motivational interviewing), behavioral therapy, and cognitive-behavioral therapy.

## Discussion

The available research advances knowledge regarding the effectiveness, indications, side effects and clinical management of pharmacotherapies for various mental disorders. Prescription drugs have a positive therapeutic impact on symptoms, particularly among children and youth with severe forms of common disorders. The literature on prescription medications also highlights that psychosocial interventions have equivalent, and in some cases superior evidence of effectiveness, and that these treatments do not engender the side effects and risks associated with prescription drugs. Evidence-based psychosocial and pharmacological treatments should both be available as referral options for physicians, and as treatment options for parents and children.

## Conclusion

The risks associated with prescription drugs are offset by therapeutic gains among children and youth who have not responded to evidence-based psychosocial treatments, and who have relatively severe symptoms. The equal availability of both psychosocial and pharmacological treatments (e.g., as a choice to parents) indicates that children are not exposed to therapeutic risks due to the absence of alternative forms of treatment.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Prescription Drug Utilization</b> <i>Choice of evidence-based therapies</i>	0 – 18 yrs	-	High	High	Unknown

## Life Outlook Theme

### Life Satisfaction

#### Systematic Review of Life Satisfaction Related to Mental/Emotional Health

##### Background and Context

The purpose of this review is to find research evidence of an association between life satisfaction and the mental/emotional health of children and youth. Life satisfaction represents a subjective state, and is associated with current theoretical and empirical work in the fields of happiness research and positive psychology. An additional goal of this review is to assess the status of potential indicators that can aid in the ongoing assessment of life satisfaction within the population of children and youth in BC.

##### Methodology and Provisional Results

###### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

###### Electronic Search Keywords

("Life Satisfaction" OR MM "Personal Satisfaction" OR MM "Quality of Life")

###### AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

The search for review articles ultimately returned a sufficient volume (see below) of papers to qualify for a Level A search process. As well, a selective approach to the supplementary search was deemed to be all that was necessary. This involved a search of PsycINFO<sup>52</sup> and Web of Science<sup>53</sup> databases for reviews using key terms such as **(life satisfaction OR personal satisfaction OR quality of life) AND mental health**, and a scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as: **(life satisfaction OR personal satisfaction) AND children AND health**. Finally, as the most recent systematic review of the association of life satisfaction with mental/emotion health was dated 2009, an update related to more recent studies was not pursued.

Taken together, the search processes returned 106 reviews for consideration.

#### Preliminary Exclusion

The articles were scanned *by title*, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between life satisfaction and mental/emotional health outcome(s) in children, then it was excluded.

After completing this first exclusion process, the list of articles was reduced to 6.

#### Primary Exclusion

The abstracts and/or full versions of the 6 articles were then reviewed. Articles not pertinent to the research topic were excluded; specifically, if the article did not link life satisfaction with mental/emotional health outcome(s), or if it was not about children, it was excluded.

There was 1 comprehensive review remaining in the list following primary exclusion.

#### Secondary Exclusion

The secondary exclusion step was not applied due to the small number of articles identified in the search process, and is reflected in the following Volume Report and the subsequent table of results.

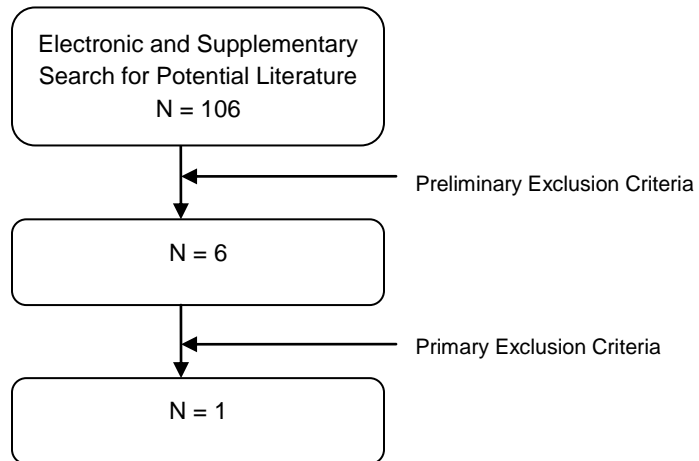
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<sup>52</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as 'birth-17 years'.

<sup>53</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, 'child\*', 'adolescen\*' and 'youth' were included in the search definitions.

## Literature Review Volume Report

***Dimension:*** Mental / Emotional Health ***Concept:*** Life Satisfaction



## Summary of Relevant Reviews

Dimension: *Mental/Emotional Health*

Concept: *Life Satisfaction*

	<u>Title of Review</u>	<u>Lead Author</u>	<u>Year</u>	<u>Journal</u>	<u>Journal Impact Factor (2009)</u>	<u>Year Range of Studies</u>	<u>No. of Studies</u>
1	Youth life satisfaction: A review of the literature	Proctor et al.	2009	Journal of Happiness Studies	n/a	1972-2006	141

## Detailed Results

For the review identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Life Satisfaction and Mental/Emotional Health			
Summary Table of Reviews			
Lead Author	Review Title	Number of Studies Reviewed	Conclusions/Comments
Proctor et al. (2010)	Youth life satisfaction: A review of the literature	141	A central construct within the positive psychology literature is life satisfaction. This article provides a review of the extant research on youth life satisfaction. The review details how life satisfaction among youth relates to various other important emotional, social, and behavioural constructs. Although the majority of research studies conducted in this area have been correlational in nature, providing general positive and negative associations between LS and various variables, this article aims to specifically highlight the benefits of positive youth LS and draw attention to its role as a buffer against the negative effects of stress, psychological problems, and disorders. Evidenced by the review are the conditions that foster positive life satisfaction and the implications of positive life satisfaction among youth.

## Bibliography for Summary Table

Proctor, C.L., Linley, P.A. & Maltby, J. Youth life satisfaction: A review of the literature. *Journal of Happiness Studies*, 2009; 10, 583-630.



## Summary of Results

One comprehensive review was identified focusing on the concept of life satisfaction including its' relation to mental/emotional health outcomes. Life satisfaction is acknowledged as a central construct in positive psychology and as such, has received growing attention in recent years. The review conducted by Proctor et al. (2010) incorporated a total of 141 studies pertaining to youth life satisfaction and its relationship with health and quality of life outcomes. Life satisfaction is sometimes used synonymously with terms such as 'happiness', and is associated with optimal functioning. Assessment of life satisfaction is generally measured in terms of subjective wellbeing (SWB), which includes "emotional responses (e.g. joy, optimism) and negative affect (e.g. sadness, anger), domain satisfactions (e.g. work satisfaction, relationship satisfaction), and global judgments of life satisfaction (Diener et al., 1999)" (Proctor et al., 2010, p. 583). The following summarizes key findings from the comprehensive review completed by Proctor et al. (2010):

- life satisfaction is not merely an outcome of various psychological states, but a predictor of psychological states and psychosocial systems;
- life satisfaction mediates the relationships between the social support-involvement dimension of authoritative parenting and adolescent problem behaviour;
- life satisfaction mediates the relationship between stressful life events and internalizing behaviour;
- increased life satisfaction buffers negative effects of stress and psychological disorder;
- and life satisfaction acts as a moderator for externalizing behaviour in adolescents;

Based on their review, Proctor et al. (2010) observed that a healthy lifestyle, good physical health, exercise, and participation in sports contribute to fostering positive life satisfaction. Non-participation in risk-taking behaviour, including alcohol, drug and tobacco use, violence, aggression and sexual victimization, were associated with higher levels of life satisfaction. Additionally, positive environmental exposures (e.g. living in safe neighborhoods, housing quality, stability and security) and adequate social supports (e.g. good familial and parental relationships, peer and other social support) helped to produce positive youth life satisfaction. It has been found that the vast majority of youth report positive life satisfaction (up to 90%); however, the importance of improving the life satisfaction of those youth who fall below the average and occupy the lower threshold has been emphasized. Due to the strong association between life satisfaction and health and psychosocial wellbeing, it is advisable to focus attention on those youth reporting low life satisfaction.

### Life Satisfaction Indicator Sources

The Canadian Community Health Survey (CCHS) is a cross-sectional study that routinely collects and reports results related to life satisfaction among Canadians 12 years and older. In 2009 the CCHS found that among youth between the ages of 12-19, 95.4% reported being 'satisfied' or 'very satisfied' with their life in general. This finding is consistent with the estimate of overall youth life satisfaction reported by researchers (Proctor et al., 2010).

## Discussion

Empirical research has highlighted the importance of life satisfaction as an important construct within the field of positive psychology. Life satisfaction has implications beyond the domain of psychopathology, and has been shown to be related to broader social determinants that impact health and quality of life. The available research findings emphasize the importance of positive life satisfaction as a predictor of positive physical and mental health outcomes, and as a mediator of other potentially negative outcomes. These findings have important implications for health promotion efforts among youth.

Despite a large volume of correlational evidence, the causal status of life satisfaction is unclear. This is due to the subjective nature of life satisfaction, as well as inconsistencies in definition of the construct and variations in methodological procedures for assessment and analysis across studies. There is currently weak evidence of a causal association between youth life satisfaction and specific health outcomes. Furthermore, research literature concerning the correlation between youth life satisfaction and health outcomes is less well established than the comparable evidence concerning adults. Additional research is needed in order to further clarify the possible causal relationships between personal, social and environmental factors that influence perceived life satisfaction among youth. Additionally, the majority of research in this subject area has been conducted outside of Canada (largely in the United States) and therefore an empirical scientific basis for assessing life satisfaction in Canadian/British Columbian youth has not been locally established. There is, however, nothing to suggest that the extant findings are not applicable to youth in BC.

## Conclusion

There is strong correlational evidence and relatively weak causal evidence suggesting that life satisfaction is associated with positive mental health and wellbeing. Evidence is particularly strong among adults, but is replicated among those studies that focus on youth samples. A minority of youth report poor overall life satisfaction, and this should be treated with concern. Emphasis may therefore be best placed on identifying and reducing the number of youth who report poor life satisfaction. The policies and practices that would be expected to improve life satisfaction are many, and varied across such domains as education, employment, public safety, and social inclusion. It may therefore be difficult to narrowly associate changes in youth life satisfaction with discrete policies or initiatives introduced by government.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Life Satisfaction</b> <i>% Reporting poor life satisfaction</i>	12 – 19 yrs	95.4%****	High	Moderate	CCHS

\*\*\*\* Percentage of Canadian youth (age 12-19) reporting life satisfaction as satisfied or very satisfied (CCHS 2007)

## Optimism

### Systematic Review of Optimism Related to Mental/Emotional Health

#### Background and Context

The purpose of this review is to find research evidence of an association between optimism and the mental/emotional health of children and youth. An additional goal is to determine what the most useful indicators are for tracking optimism. Optimism is a multidimensional construct in the field of positive psychology, and incorporates aspects of hope, life satisfaction and happiness.

#### Methodology and Provisional Results

##### Initial Search Process

For the electronic search for reviews in this area, the database used was Medline with Fulltext (PubMed), with the following limits:

*Date:* 2005-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Review, Meta-analysis

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

##### Electronic Search Keywords

("Optimism" OR "Positive Psychology" or "Enthusiasm" OR MM "Happiness)

#### AND

(MM "Mental Health" OR MM "Social Adjustment" OR MM "Adaptation, Psychological" OR MM "Resilience, Psychological" OR MM "Child Psychology" OR MM "Adolescent Psychology" OR MM "Risk Factors")

Note that, in order to provide as targeted a search as possible, Medical Subject Headings (MeSH) were applied, qualified by subheadings and whether or not it was a Major term (MM) or Main Heading term (MH) for the article.

As this initial search process located 99 papers that were not suitable for this concept, a "Level B" search process was executed to locate individual studies.

##### Study Search Process

A second electronic search was conducted for individual studies in this area. The database used was again Medline with Fulltext (PubMed), with the following limits:

*Date:* 2000-present   *Language:* English   *Subjects:* Human   *Age:* 0-18 years\*

*Type of Article:* Clinical Trial, Randomized Controlled Trial, Controlled Clinical Trial

The same search terms were used as in the review search process outlined previously. There were another 34 studies identified in this search process.

\*While the protocol defines a child as 0-20 years of age, the search limit available in PubMed for All Child is 0-18 years, so this approximation was used.

In addition to the above search method, the following searches were conducted:

- PubMed search using “Related Citations” link
- A search of PsycINFO<sup>54</sup> and Web of Science<sup>55</sup> databases using key terms such as **optimism AND mental health**.
- A scan in Google Scholar for grey literature and for any obvious articles missed, using terms such as **optimism AND children AND mental health**
- Hand-searching bibliographies of key papers
- Checking for study updates (by author)

Taken together, the various search processes returned 392 articles for consideration.

#### Preliminary Exclusion

The articles were scanned *by title* by two reviewers working individually, with articles not pertinent to the research topic being excluded; specifically, if the article did not appear to be investigating the association between optimism and mental/emotional health outcome(s), or if it was not about children, then it was excluded. When there was disagreement between the reviewers, the article in question was examined in more detail until a consensus was reached.

After completing this first exclusion process, the list of articles was reduced to 25.

#### Primary Exclusion

The full articles were then reviewed, with articles not pertinent to the research topic being excluded; specifically, if the article did not link optimism with mental/emotional health outcome(s), it was excluded. Also excluded was any study that focused on a specific subgroup of children, such as those with learning disabilities, African-Americans, or studies that did not take place in Western developed countries, where there would be a limitation

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<sup>54</sup> PsycINFO is the most comprehensive database for psychological research and literature. The search limit available for PsycINFO approximates children as ‘birth-17 years’.

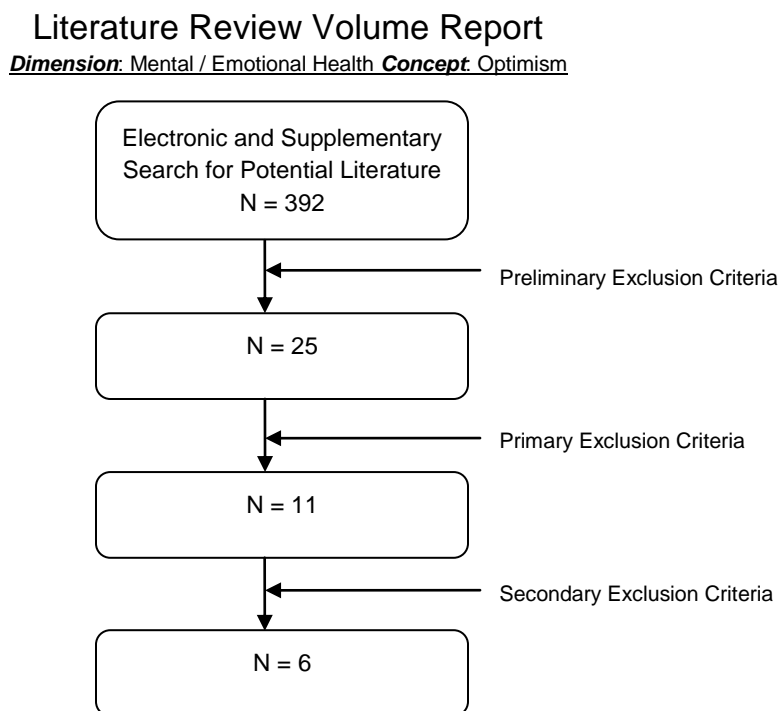
<sup>55</sup> The Web of Science database indexes over 10,000 high-impact journals in the sciences, social sciences, arts and humanities. Search limits available for the Web of Science database is by key word only; as such, ‘child\*’, ‘adolescen\*’ and ‘youth’ were included in the search definitions.

to the generalizability of results across the whole pediatric population in a jurisdiction such as British Columbia. If there was uncertainty as to whether an article should be excluded, the reviewers discussed the matter further to reach a consensus.

There were 11 reviews remaining in the list following the primary exclusion.

#### Secondary Exclusion

Studies that were deemed to be of lesser quality or usefulness were excluded. This secondary exclusion step yielded a final total of 6 studies, as reflected in the following Volume Report and subsequent table of results.



## Results After Applying Secondary Exclusion: Studies

Domain: *Mental/Emotional Health*

Concept: *Optimism*

	Title of Study	Author(s)	Year	Journal	Journal Impact		Sample Size	Sample Population	Location	Conflict of Interest
					Factor (2009)	Type of Study				
1	Experience of life hassles and psychological adjustment among adolescents: does it make a difference if one is optimistic or pessimistic?	Chang et al.	2003	Personality and Individual Differences	1.878	Cross-sectional study	263	Adolescents aged 14-19 years	United States	Not stated
2	Asian Adolescents' Perceptions of Parent, Peer, and School Support and Psychological Adjustment: The Mediating Role of Dispositional Optimism	Chong et al.	2006	Current Psychology	0.341	Cross-sectional study	519	Asian adolescents average age 13.5 years	Singapore	Not stated
3	Perceived emotional intelligence and dispositional optimism–pessimism: Analyzing their role in predicting psychological adjustment among adolescents	Extremera et al.	2007	Personality and Individual Differences	1.878	Cross-sectional study	509	Spanish adolescents aged 12-19 years	Spain	Not stated
4	Dispositional optimism buffers the impact of daily hassles on mental health in Chinese adolescents	Lai, J.C.L.	2009	Personality and Individual Differences	1.878	Cross-sectional study	345	Chinese high school students average age 13.2 years	Hong Kong	Not stated
5	Hope versus optimism in Singaporean adolescents: Contributions to depression and life satisfaction	Wong et al.	2009	Personality and Individual Differences	1.878	Cross-sectional study	334	Chinese high school students average age 15.6 years	Singapore	Not stated
6	The role of meaning in life and optimism in promoting well-being	Ho et al.	2010	Personality and Individual Differences	1.878	Cross-sectional study	1,807	Chinese adolescents aged 12-18 years	Hong Kong	Not stated

## Detailed Results

For the 6 studies identified by the literature search and exclusion process, a summary table of results was developed; this table is provided below.

Optimism and Mental/Emotional Health Summary Table of Studies							
Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
<b>Chang et al. (2003)</b>	To examine optimism–pessimism as a moderator of the link between recent hassles and psychological maladjustment (viz. depressive symptoms and hopelessness)	Self-report survey measures of optimism–pessimism, hassles, depressive symptoms and hopelessness	United States  263 public high school students aged 14-19 years  163 girls; 100 boys	Cross-sectional study	- Correlations between optimism–pessimism, recent hassles, and psychological adjustment to determine if and how optimism–pessimism moderates the link between hassles and adjustment	- Optimism–pessimism and hassles significantly predicted scores on each adjustment measure - A significant optimism pessimism x hassles interaction was found in predicting depressive symptoms and hopelessness	- The link between hassles and poor psychological adjustment was significantly more exacerbated for pessimistic compared to optimistic adolescents - Adolescents who are more pessimistic are likely to experience greater depressive symptoms and hopelessness under conditions of high chronic stress than those who are more optimistic
<b>Chong et al. (2006)</b>	To examine the respective contributions of perceived support from parents, peers, and school to psychological adjustment and the mediating role dispositional optimism plays in these relationships	Self-report measures of perceptions of self, support received, and adjustment to the environment; negative affect; and dispositional optimism	Singapore  519 Asian middle-school adolescents aged 13 years  259 females; 260 males	Cross-sectional study	- Correlations between perceived support from parents, peers, and school with respect to dispositional optimism and psychological adjustment in an Asian context to determine whether dispositional optimism mediates these relationships, and if this varies by sex	- Findings suggest that positive supportive relationships with parents, peers, and the school are important contextual factors influencing the psychological well-being of these adolescents. - Dispositional optimism partially mediates support from each of these three sources and psychological adjustment. - For early adolescent girls, dispositional optimism significantly accounted for the relationships between these perceived supports and psychological well-being.	- Highlights the role of a positive mechanism that underpins emotional well being and psychological adaptation in three developmental contexts that are important in shaping the beliefs, thinking and behavior of the growing Asian adolescent, particularly with respect to girls - Results should be interpreted within the cultural context of an Asian collectivistic and achievement-oriented society that is characteristic of Confucian heritage
<b>Extremera et al. (2007)</b>	To examine the relationships	Self-report measures of	Spain	Cross-sectional study	- Intercorrelations among dimensions of	- Dimensions of emotional intelligence and dispositional	- Data suggest that adolescents with high



## Optimism and Mental/Emotional Health

### Summary Table of Studies

Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
	between perceived emotional intelligence, dispositional optimism/pessimism and psychological adjustment	perceived emotional intelligence, dispositional optimism-pessimism, perceived stress scale and satisfaction with life scale	498 adolescents aged 12-19 years  296 girls; 202 boys		emotional intelligence, dispositional optimism/pessimism and psychological adjustment (perceived stress and life satisfaction)	optimism/pessimism showed significant correlations as a predictor of perceived stress and life satisfaction.  - emotional clarity and mood repair still remained significant in predicting perceived stress and life satisfaction after the influence of optimism/pessimism were controlled	perceptions of emotional abilities (in particular, high clarity and repair) generally show higher life satisfaction and lower perceived stress.  - Moreover, to some degree, this effect might be considered as independent from their own optimistic or pessimistic dispositions.
<b>Lai, J.C.L. (2009)</b>	To investigate the moderating effect of dispositional optimism on the link between daily hassles and mental health	Self reports of optimism, daily hassles and mental health were measured by a Chinese version of the revised Life Orientation Test, the Inventory of High School Students' Recent Life Experiences and the General Health Questionnaire	Hong Kong  345 Chinese high school students,  Mean age 13.2 years  182 female; 163 male	Cross-sectional study	- Correlations to determine whether hassles, optimism, and the interaction between hassles and optimism were predictive of mental health	- Optimism had a significant stress-buffering effect.  - Specifically, optimistic students tended to fare better than their pessimistic peers when the experience of hassles increased	- Findings suggest that the stress-buffering effect of optimism, which has been demonstrated largely in student or adult samples, may be extended to younger age groups in a non-Western context
<b>Wong et al. (2009)</b>	To explore the discriminant validity of optimism and hope in accounting for unique variance in depression and life satisfaction	Self-report measures of the revised Life Orientation Test, Children's Hope Scale, Satisfaction with Life Scale, and depressive symptoms	Singapore  334 secondary school students,  Mean age 15.6 years  189 girls; 145 boys	Cross-sectional study	- Correlations between optimism and hope; which is a stronger predictor of depression and life satisfaction; and what accounts for unique variance in depression and life satisfaction	- Optimism and hope were significantly correlated with each other  - Both optimism and hope significantly predicted depression and life satisfaction even after controlling for hope and optimism, respectively  - Only agency, optimism, and pessimism contributed uniquely to the variance in depression and life satisfaction	- Multidimensional constructs like hope and optimism shared large common variance between them, and accounted for a small amount of incremental unique variance in depression and life satisfaction.  - Important to examine the role of culture in moderating such a predictor-outcome relationship in terms of both individualistic and collectivistic frameworks
<b>Ho et al.</b>	To examine the relationship	Self-reported inventories that	Hong Kong	Cross-sectional	- Associations among meaning in life,	- Both meaning in life and optimism significantly associated with	- Optimism had beneficial effects on life satisfaction

<b>Optimism and Mental/Emotional Health</b> <i>Summary Table of Studies</i>							
Citation	Study Objective	Study Description	Setting/ Participants	Design/ Data Collection	Outcomes	Results	Conclusions/Comments
(2010)	between meaning in life, optimism and well-being among adolescents	assessed personality, psychosocial problems and life satisfaction	1,807 adolescents aged 12–18 years  52.4% females; 45.9% males	study	optimism, and well-being	multidimensional life satisfaction and multidimensional structure of psychosocial problems among adolescents - Optimism also served as a partial mediator in the relationships between meaning in life and both positive and negative aspects of wellbeing. - The mediating role of optimism did not differ across gender.	and was related to meaning in life leading to well-being - Findings imply that meaning in life is crucial to optimism and contributes to a happier and satisfying life

### Bibliography for Summary Table

Chang, E.C. & Sanna, L.J. Experience of life hassles and psychological adjustment among adolescents: does it make a difference if one is optimistic or pessimistic? *Personality and Individual Differences*, 2003; 34, 867-879.

Chong, W.H., Huan, V.S., Yeo, L.S. & Ang, R.P. Asian Adolescents' Perceptions of Parent, Peer, and School Support and Psychological Adjustment: The Mediating Role of Dispositional Optimism. *Current Psychology: Developmental • Learning • Personality • Social*, 2006; 25(3), 212-228.

Extremera, N., Dura'n, A. & Rey, L. Perceived emotional intelligence and dispositional optimism–pessimism: Analyzing their role in predicting psychological adjustment among adolescents. *Personality and Individual Differences*, 2007; 42, 1069-1079.

Lai, J.C.L. Dispositional optimism buffers the impact of daily hassles on mental health in Chinese adolescents. *Personality and Individual Differences*, 2009; 47, 247-249.

Wong, S.S. & Lim, T. Hope versus optimism in Singaporean adolescents: Contributions to depression and life satisfaction. *Personality and Individual Differences*, 2009; 46, 648-652.

Ho, M.Y., Cheung, F.M. & Cheung, S.F. The role of meaning in life and optimism in promoting well-being. *Personality and Individual Differences*, 2010; 48, 658-663.

## Summary of Results

A total of six studies were identified under the concept of optimism that included pertinent research evidence regarding mental/emotional health outcomes. No suitable comprehensive literature reviews or meta-analyses were identified for this concept. The available studies examine the empirical association between optimism and related constructs, with psychological outcomes. The concept of optimism was evaluated in varying ways across studies, incorporating aspects such as dispositional traits, responses to perceived stress, emotional clarity and mood repair, and psychological adjustment. All studies reviewed for this concept involved cross-sectional study designs, employed self-report measures, and were conducted outside of Canada. One study was carried out among high school students (age 14-19) in the United States, while all other studies were conducted outside of North America including one conducted in Spain, two in Singapore, and two in Hong Kong. Overall, the range of ages across all studies was 12-19 years; therefore, the primary focus for this concept was its application among pre-adolescent and adolescent youth.

Results from several of these studies found significant positive associations between optimism and mental health related outcomes. Two studies found that depressive symptoms were lower among optimistic youth<sup>56,57</sup>, while another found that optimism had a significant stress-buffering effect, and that optimistic youth fare better than their pessimistic peers in everyday situations when stress is increased<sup>58</sup>. Three studies identified significant positive associations between optimism and life satisfaction, with Wong et al., (2009) showing a significant correlation with hope and a further correlation between both constructs being negatively associated with depression. Additional non-significant findings showed that dispositional optimism mediates supportive relationships between youth with their parents, peers and schools; and further, that optimism served as a partial mediator in the relationships between meaning in life with both positive and negative aspects of wellbeing<sup>59</sup>.

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<sup>56</sup> Chang, E.C. & Sanna, L.J. Experience of life hassles and psychological adjustment among adolescents: does it make a difference if one is optimistic or pessimistic? *Personality and Individual Differences*, 2003; 34, 867-879.

<sup>57</sup> Wong, S.S. & Lim, T. Hope versus optimism in Singaporean adolescents: Contributions to depression and life satisfaction. *Personality and Individual Differences*, 2009; 46, 648-652.

<sup>58</sup> Lai, J.C.L. Dispositional optimism buffers the impact of daily hassles on mental health in Chinese adolescents. *Personality and Individual Differences*, 2009; 47, 247-249.

<sup>59</sup> Ho, M.Y., Cheung, F.M. & Cheung, S.F. The role of meaning in life and optimism in promoting well-being. *Personality and Individual Differences*, 2010; 48, 658-663.

## Discussion

Optimism, as discussed in the studies included in this review, is largely described as a dispositional (and often innate) character trait that influences how youth cope with stress, their propensity towards experiencing depressive symptoms, their quality of life, and perceptions of life satisfaction. The results suggest that optimistic youth are less likely to experience depression, have higher life satisfaction and be better able to cope with stress than their pessimistic peers.

There are several methodological and contextual factors that need to be taken into account when assessing the strength of the evidence for the concept of optimism in contributing to child mental/emotional health. Very few studies were deemed suitable for inclusion in this review and as such there was limited empirical evidence available in order to establish coherence or robustness of findings. All of the studies included were cross-sectional designs, and no studies were conducted involving Canadian children/youth. While it is reasonable to assume that similar outcomes may be observed among Canadian youth as compared to youth from other countries, differences in cultural factors (individualistic vs. collectivistic cultural differences), conceptualizations of mental illness and practices which influence stress and coping may vary greatly across cultures, thus impacting the ability to extrapolate findings with certainty. Research on optimism is proliferating, as investigators place increasing emphasis on positive aspects of psychology and well being. This is an area of research that is expected to grow rapidly in both depth and sophistication over coming years.

## Conclusion

A small but growing literature exists to support the relationship between the concept of optimism and mental/emotional health among children and youth. A measure of optimism (e.g., feeling positive about the future) may have particular value among adolescent youth. No known existing data sources include relevant measures of optimism.

Review/Summary of Concept					
Concept / Indicator	Age Group (years)	Magnitude	Significance / Impact	Modifiability	Data Availability / Validity
<b>Optimism</b> <i>Feeling positive about the future</i>	12 – 18 yrs	-	Moderate	Low/Moderate	Unknown

## Summary and Conclusion

### Introduction

This final section of this report serves to integrate relevant conclusions from the large body of research presented and summarized in the previous fourteen chapters. As with other documents in this series, the purpose of this report is to support the development of a recommended inventory of indicators that are actionable, meaningful, and sensitive to change in relation to the overall health and wellbeing of children.

The present review has focused on the mental and emotional health of children, and is organized into four themes: Family Functioning; Positive Mental Health; Mental Illness; and Life Outlook. The chapters within each of these themes reflected distinct areas of focus, and each of the associated reviews produced independent sets of literature (i.e., original studies, review articles or meta-analyses) that were specific to the concept under consideration.

Despite the independence of literature reviews between chapters, the implications of each review occasionally converged, with different concepts leading to similar conclusions when considering appropriate indicators. This convergence is likely a reflection of the fact that individual indicators are seldom specific and unique to a single concept. Indeed, many of the indicators that we recommend are likely applicable to other domains of child health and wellbeing, apart from mental/emotional health per se.

The primary focus of this summary is on specific candidate indicators that are derived from our reviews. For each candidate indicator we evaluate: the likely magnitude (i.e., prevalence) of the related child health concept; the significance or impact of the phenomena assessed; the modifiability of the indicated phenomena; and the availability of relevant data. Each of these evaluations involves the judgment of the review team, and requires the consideration of information that is outside of the scope of our formal literature reviews. We begin with a description of available data sources that could serve as the basis for a suite of evidence-supported indicators.

Gaps in the available suite of indicators are noted, and strategies to fill these gaps are outlined. The summary concludes with a tabulation of candidate concepts/indicators, and a list of recommended indicators.

## Data Sources

There are a limited number of known data sources that have direct relevance to the current domain of indicators. Both the Canadian Community Health Survey (CCHS) and the B.C. Adolescent Health Survey (AHS) have potential to serve as indicator sources. Where relevant, these two sources of data are listed in our tabulations. In addition to these known measures, other sources of data may be available to government departments, with the potential to serve as indicators. Possible data sources are the administrative databases maintained by the Provincial Ministry of Health Services (e.g., community nursing, vital statistics). In addition, the Minimum Reporting Requirements of B.C.'s Health Authorities may include variables that are closely related to the indicators that have been identified through this review.

The work of applied researchers is another source of information that is relevant to the formation of child emotional/mental health indicators in the Province of BC. The Human Early Learning Partnership and the McCreary Centre Society have each conducted repeated measurement of important health indicators with an emphasis on children and adolescents respectively. To date, emotional and mental health has not been a primary focus of these initiatives. However, the capacity of these and other applied researchers to develop, implement, and validate measures is of considerable importance, particularly when faced with gaps and omissions in the available suite of indicators.

Decision-makers must strike a balance when selecting indicators, taking into account both the overall strategic importance of indicators, the strength of evidence supporting the validity of a candidate indicator, and the availability of appropriate measures to enable monitoring of changes over time. Where existing data sources are not known, particularly for important indicators of health, it is worth carefully reviewing current data systems - those in the public domain and those held in trust by government agencies. Where genuine gaps exist, decision-makers have a responsibility to consider instituting new measures, such as through the evolution of reporting requirements, applied research initiatives, or through other means at the disposal of government as it seeks to achieve the best possible results from publicly-funded programs and services.

## Proposed Indicators By Theme

### Family Functioning

At the population-level, quality of *family functioning* is indicated by rates of divorce. Research indicates that the phenomenon of divorce is relevant not because of the event itself, but due to the emotional and economic hardships that often accompany the break-up of parents. Statistics Canada's Divorce Database includes regional specifiers (e.g., Province/Territory), as well as the number and date(s) of birth of

dependents. Divorce rates have a moderate overall association with child and youth mental/emotional health, and are recommended for consideration as an indicator.

Evidence suggests that *parenting style* is moderately related to child mental/emotional health. For pre-school and elementary school-aged children, the number of hours in childcare is an indicator of social and behavioural outcomes. For children of all ages, parental employment is an indicator of material resources. It is not known whether these measures are currently obtained in BC.

Universal screening for *parental mental health status* among new parents is a gateway to case finding and the delivery of indicated interventions. Appropriate indicators of professional screening are likely available through administrative data bases (e.g., percentage of parents seen by a health professional within 6 months of a new birth). These data are not available in the public domain and could not be scrutinized as part of the present review.

### Positive Mental Health

Very limited research has addressed relevant correlates or consequences of *self-rated emotional health*. However, emotional self-regulation is importantly related to mental/emotional health of children, and is relatively stable following the first years of development. Rather than relying on self-report, professional screening by qualified professionals (i.e., pediatrician) within the first years of life is an indicator that has a low/moderately strong association with emotional health, based on current evidence.

Moderately strong evidence exists to support the value of monitoring self-rated *self-esteem* in relation to the broader domain of child and youth mental and emotional health. This indicator overlaps with the conceptual scope of other constructs in this dimension, and is subject to improvement in response to environmental, community, family, and other social influences. It is therefore a modifiable area of measurement. The Adolescent Health Survey in BC includes seven items related to *self-esteem*. In addition, evidence suggests that *self-rated mental health* (e.g., using a Likert scale, or percentage rating “Good mental health”) is a moderate/high quality indicator of mental/emotional health among youth aged 11-19. This measure is available through the CCHS, and has unique relevance to mental/emotional health, independent of physical health.

Despite having an important place in the fields of developmental and clinical psychology, an insufficient volume of evidence was available to guide decision-making regarding indicators of *self-efficacy* in relation to the mental/emotional health of children and youth. No specific recommendation is made for this construct, pending further research.

Self-rated “*religiousness/spirituality*” is an indicator with moderate/high relevance to mental/emotional health among youth aged 12-19 years. No existing measures are known to examine R/S among youth in British Columbia. A single item examining R/S may feasibly be introduced in periodic surveys, and the available literature has found that positive effects of R/S are evident despite variable approaches to measurement.

## Mental Illness

*Mental disorders* among children and adolescents are strongly associated with compromised mental/emotional health. Screening programs are an important indicator of case finding, and could be measured through population rates of universal screening in infancy. In addition, cigarette smoking and binge drinking are indicative of risks to mental health, alongside other adverse consequences for healthy development. Relevant measures are included in the Adolescent Health Survey (AHS).

Rates of *suicide* are an extremely important indicator of multiple causal pathways leading to mortality. Encouragingly, new evidence suggests that an increasingly broad number of these pathways are subject to modification through public policies and initiatives. Rate of suicide are reported by Vital Statistics, while suicidal ideation and attempts are included in the AHS.

Continuity of care throughout childhood, adolescence, and adulthood is an important indicator of mental/emotional health in relation to *mental health system utilization*. Improvements to continuity (or elimination of discontinuities) are subject to policy reforms. Existing indicator sources are not known. However, administrative data (MHS) would enable analysis of the percentage of youth who remain continuously cared for across the age-defined boundaries of different agencies (e.g., 19-20 years). It is also possible that Minimum Reporting Requirements of Health Authorities include, or may include, relevant measures. Alternatively, surveys such as the AHS could be expanded to specifically assess continuity of mental health care, alongside existing items concerning access to care.

Benefits of prescription drugs must be weighed against risks to mental/emotional health. Equal access to psychosocial and pharmacological treatments is an indicator of appropriate *prescription drug utilization*. Research concludes that empirically-supported psychosocial interventions are under-supplied to children and youth in need of care, resulting in a relative over-reliance on pharmacotherapy. No appropriate measure is known in BC. Minimum Reporting Requirements may have relevance here.



## Life Outlook

Low levels of *life satisfaction* are associated with poor mental/emotional health. A low level of evidence links self-assessed life satisfaction with mental health among youth, other than when low ratings are reported. Despite the importance of identifying children and youth with low life satisfaction, it is unclear whether this concept is amenable to the direct influence of public policies and programs.

Feeling positive about the future is a moderately strong indicator of mental/emotional health, particular among adolescents. No known existing data sources include relevant measures of *optimism*, and the relationship between adolescent optimism and public policies and programs is subject to speculation.

## Gaps and Opportunities: Redressing An Emphasis on Harm

For several years, researchers and policy makers have voiced concern that the currently available suite of indicators of youth development is biased toward negative outcomes <sup>60,61</sup>. In addition, reviews of child and youth indicators have identified a disproportionate emphasis on measures of educational and physical health domains compared to the domain of mental and emotional functioning <sup>62</sup>. In Canada, as in the US, statistical systems tend to consist of measures that reflect behaviours of broad social concern, such as suicide, school drop-out, and substance use. Few, if any indicators have been implemented that reflect positive emotional or mental development.

The selection of indicators has a number of consequences, including having an influence on the direction of research. The greatest wealth of research attention has been on factors that precede various negative outcomes, or on interventions that aim to prevent or mitigate developmental problems. This bias is conspicuous in each of the fourteen systematic reviews that are included in this report.

A number of authors have called for the development of indicators of positive development, arguing that this would not only redirect the attention of researchers, but could also provide inspiration to families, to parents, and to youth themselves <sup>63</sup>.

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<sup>60</sup> Federal Interagency Forum on Child and Family Statistics. 2002. *America's children: Key national indicators of well-being*. Washington, DC: Government Printing Office.

<sup>61</sup> Moore, K.A. 1997. Criteria for indicators of child well-being. In *Indicators of child well-being*, edited by R. M. Hauser, B. B. Brown, and W. R. Prosser, 36-44. New York: Russell Sage Foundation.

<sup>62</sup> Moore, K.A., E.C. Hair, J. Zaff, Z. Redd, and E. Michelson. 2001. *Clark Youth Indicators Grid*. Washington, DC: Child Trends.

<sup>63</sup> Guzman, L., L. Lippman, and K.A. Moore. 2003. *What does the public know about children's economic and demographic characteristics?* Washington, DC: Child Trends for the Annie E. Casey Foundation.

Moreover, the public monitoring of positive mental/emotional health would help ensure that policy-makers and other decision-makers are objectively accountable for the promotion of health among all youth.

Despite these calls for restoring balance to the suite of measures, the implementation of indicators of positive mental and emotional development has proven difficult for several reasons. To begin with, new measures need to be defined, introduced, and validated. The latter includes the development of evidence that a candidate indicator is predictive of future positive outcomes in adulthood, and typically involves longitudinal research. There is also some concern that measures of positive mental/emotional development may be perceived as more vague or “fuzzy” than measures of morbidity and mortality.

Of the fourteen concepts/indicators included in this report, seven have a strong face valid association with positive aspects of development, and most of the remainder could be monitored using indicators of either positive or negative events. A long-term commitment is required in order to identify and validate measures that are associated with positive behaviours, are predictive of healthy development, and are meaningful across different communities and regions.

The availability of data is greater for adolescents than for children. In BC, the Early Development Index is a prominent and important source of information regarding the well-being of children. Applied researchers are an important source or advise and support in the collection of indicators such as childhood self-esteem and access to choice between empirically-supported pharmacological and psychosocial therapies. Researchers are also valuable partners in establishing the predictive validity of selected indicators, which requires the longitudinal analysis of indicators in relation to outcomes of importance to society.

### **Integrated Tables of Results**

The following tables further refine the recommendations and ratings established in this report. The first table, “Summary Assessment of Concept/Indicators for Mental/Emotional Health Dimension”, integrates each candidate indicator along with assessments (Low, Moderate, High) of the magnitude, significance, and modifiability of each. Specific data sources are listed or proposed for consideration.

The table of “Summary of Recommended Indicators” distills our results even further, presenting the core suite of proposed indicators. The recommended indicators are a function of all the major aspects of this review, including: current research concerning relevance; current knowledge about opportunities for modification; and currently available data. Each of the sources of guidance that we have relied upon is dynamic, and subject to continuous change and improvement. We therefore emphasize that our recommendations are a function of current evidence in a range of complex areas. Revisions to our recommendations are therefore to be expected, based on the development of new knowledge.

## Child Health and Well-Being

### Summary Assessment of Concepts/Indicators for Mental/Emotional Health Dimension

Concept/Indicator	Age Group (Years)	Estimated Prevalence Among B.C. Children	Magnitude	Significance / Impact	Modifiability	Data Availability/Validity
			Proportion of B.C. 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	Existence and validity of information for the component indicator(s) for each concept
Family Functioning <i>Divorce rates</i>	0-18 yrs			Low/Moderate	Low/Moderate	Stats Can
Parenting Style & Practices <i>Pre-school hours in childcare</i>	0-5 yrs.			Moderate	Moderate/High	Unknown
<u>Parental Mental Health Status</u> <i>Universal screening post natal</i>	Prenatal-1 yr.			Moderate	Moderate	HA/MHS
Emotional Health (self-rated) <i>(n/a)</i>	0-18 yrs.			Low	Low	Unknown
<u>Self-Esteem</u> <i>Rates of suicide, Satisfaction with life</i>	3-18 yrs.			Moderate	Moderate	AHS/CCHS
<u>Self-Rated Mental Health</u> <i>High self-rated MH (11-19)</i>	11-19 yrs.		3,1%*	Moderate/High	Moderate	CCHS
Self-Efficacy <i>(n/a)</i>	3-18 yrs.			Low	Low	Unknown
Spirituality <i>% of youth (12-19) reporting religiousness/spirituality</i>	3-18 yrs.			Moderate	Moderate	Unknown
<u>Mental Health Disorders</u> <i>a. Universal screening post natal b. Cigarette Smoking</i>	0-18 yr.		2.7%**	High Moderate	High Moderate	HA/MHS AHS, CCHS
<u>Suicide &amp; Suicidal Ideation</u> <i>Rates of suicide</i>	10-14 yrs. 15-19 yrs.		1.6*** 8.3***	High	High	Vital Statistics AHS
<u>Mental Health System Utilization</u> <i>Continuity of care through development</i>	0-20 yrs.			High	High	Unknown AHS modification?
Prescription Drug Utilization <i>Choice of evidence-based therapies</i>	0-18 yrs.			High	High	Unknown
<u>Life Satisfaction</u> <i>% reporting poor life satisfaction</i>	12-19 yrs.		95.4%****	High	Moderate	CCHS
Optimism <i>Feeling positive about the future</i>	12-18 yrs			Moderate	Low/Moderate	Unknown

Underlined concepts are recommended for inclusion

\* Percentage of Canadian youth (age 12-19) reporting perceived mental health as fair or poor (CCHS 2007)

\*\* Percent of Canadian youth (age 12-19) reporting having been diagnosed by a health professional as having a mood disorder (i.e., depression, bipolar disorder, mania, or dysthymia)

\*\*\* Suicide rate per 100,000 population (2007)

\*\*\*\* Percentage of Canadian youth (age 12-19) reporting life satisfaction as satisfied or very satisfied (CCHS 2007)

Note: CCHS=Canadian Community Health Survey; HA=Health Authority; MHS=BC Ministry of Health Services; AHS=Adolescent Health Survey

Seven recommended indicators appear in the “Summary of Recommended Indicators” below, addressing each of the four theme areas included in this report. The summary indicators are listed in relation to broad developmental stages. A disproportionate number of the indicators are related to one theme - Mental Illness. As noted, the preponderance of available research has been conducted on phenomena that represent negative outcomes, and on interventions intended to treat illness. A relatively recent resurgence of research on positive psychology, happiness, and wellbeing is welcome and overdue. But it will be some time before the products of this research will have equal status with research on psychopathology. A second consideration regarding the focus on mental illness is related to the current state of mental health care. Several reviews noted that current practices in mental health contribute to adverse mental and emotional wellbeing among children and adolescents. Among the practices that were associated with adverse effects are the avoidable prescribing of psychotropic medications, the related under-supply of evidence-based psychological treatments, and discontinuities as children are discharged from programs simply because of their age, but with ongoing care needs. Naturally, adverse effects occur alongside the many effective treatments and transformations provided by the field. But, at the present time, evidence suggests that improvements to the system of care will have an important impact on population mental health, in part through the reduction of preventable harms.

Summary of Recommended Indicators		
Pediatric Stage	Potential Core Indicator	Mental/Emotional Health Sub-dimension
Preschool	Universal post-natal screening	Family Functioning Mental Illness
Childhood	Treatment availability	Mental Illness
Adolescence	Suicide Continuity of care Self-esteem Life satisfaction Self-Rated Mental Health	Mental Illness Life Outlook Positive Mental Health



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