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**“BETTER TO BUILD  
A CHILD THAN FIX AN ADULT”**

A REPORT ON THE PREDICTORS OF RISK  
FOR YOUTH WHO PROCEED TO THE ADULT  
JUSTICE SYSTEM AND THE PROGRAMS  
THAT WORK TO REDUCE THAT LIKELIHOOD

**NATIONAL CRIME PREVENTION CENTRE / CENTRE NATIONAL DE PRÉVENTION DU CRIME**

ACTING TO PREVENT  
**CRIME**  
AGIR POUR PRÉVENIR

Canada 



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*La présente publication est aussi disponible en français. Elle s'intitule : Mieux vaut éduquer un enfant que corriger un adulte : un rapport sur les prédicteurs, chez les jeunes, de comportements criminels à l'âge adulte et sur les programmes qui permettent d'en réduire les risques.*

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## Executive summary

Sufficient research now exists in the psychology of criminal conduct literature to address the long-term impact of early childhood and adolescent experiences on later adult outcomes. In the present literature review, a meta-analysis was first conducted to examine research studies that tracked the impact of a variety of early childhood and adolescent experiences on individuals who, as adults, became involved in criminal justice systems. Long-term outcomes were characterized as relating to the likelihood of early experiences being linked with later criminal behaviour. Once these early predictors were determined, a further literature search was conducted to examine treatment studies that related to these predictors. In the Canadian context, the immediate relevance of this review is to inform the National Crime Prevention Centre of targets for prevention and early intervention that coincide with established predictors of adult criminal behaviour.

Thirty-eight studies met the following selection criteria for inclusion in the meta-analysis: the studies are longitudinal, prospective in nature; they report characteristics of the child, the adolescent and their family experiences; they include data that is amenable to meta-analytic investigation; they provide follow-up data for individuals that placed them potentially within the jurisdiction of the adult criminal justice system within the country where the study was completed; and, they provide follow-up data that reported findings related to guilt based on the criminal charges.

Major findings indicate that dynamic versus static predictors are more highly related to adult criminal justice involvement. Within the set of dynamic predictors, childhood factors that rate most highly include a variety of behavioural concerns including aggression, attentional problems, motor restlessness and attention seeking. Emotional concerns relating to depression are also represented. These include withdrawal, anxiety, self-deprecation, social alienation as well as a variety of other mood/psychiatric disorders. A number of family descriptors also factor into the set of predictors. These include a variety of parenting strategies, such as coerciveness, authoritarian behaviours and lack of child supervision, as well as family structure variables, such as family conflict, witnessing violence, interparental conflict, a number of family stressors and poor communication.

These findings from the meta-analysis formed the basis for a second literature search. This search focused on treatment studies that related to the predictors of criminal behaviour. One hundred and twenty-eight studies met the following selection criteria: they were published within the past 10 years; the research is quantitative in nature and addresses outcomes related in some way to criminogenic risk; and, the reports are sufficiently detailed to allow for an appreciation of the nature of the components of service presented. A qualitative summary of these studies is provided within this report.

This qualitative summary is organized around the following major themes: behavioural and emotional concerns of childhood and adolescents; domestic violence; parenting strategies; and, family-based interventions. A brief overview of the components of service that characterize these treatment studies is provided at the beginning of each section. Following these overviews, a brief but detailed summary of each study is provided, emphasizing the characteristics of effective service within each treatment evaluation.

Increasingly, intervention within the human services is concerned with the prevention of later difficulties. This paradigm represents a departure from what has largely been a reactive response to persons following the identification of trauma, crisis, or other form of risk. While there will forever be a necessity for such reactive services, proactive services that prevent either the nature or intensity of the effect of early trauma will continue to be emphasized. Therefore, it is necessary to identify targets for such services. It is in this area that the relevance of this report falls.



## Organization of the Report

There are 3 phases to the current project. Chapters One and Two address the literature related to the prediction of risk for youth to the age of 18. This was not intended to be the basis of a meta-analysis on this literature as there are a number of current analyses in existence. Rather, these sections of the report provide an overview of the major themes related to risk.

Chapter Three presents the methodology and results of the current meta-analysis. As mentioned, there are numerous relevant meta-analyses that already exist. Their findings provide a benchmark for the information provided in this study. The results section in Chapter Three reveals the major predictors of risk for youths who continue to offend into their adult years. By definition, this is defined as the 18<sup>th</sup> birthday of the participants, or the age of majority from the country of origin in which the study was conducted and the age which corresponds to entry into the adult criminal justice system. The parameters of the search were restricted to published, peer-reviewed studies as well as unpublished studies.

Chapter Four presents an examination of the literature on interventions targeting factors of identified risk. The analysis of literature in this phase followed the theme of the National Crime Prevention Centre (NCPC).

***“The National Crime Prevention Strategy is based on the principle that the surest way to reduce crime is to focus on the factors that put individuals at risk -- factors like family violence, school problems and drug abuse. It aims to reduce crime and victimization by tackling crime before it happens.”***

## Statement of the issue

Research during the past decade has identified a number of correlates of risk related to young persons who become involved in the youth justice system. Our understanding of these risk factors is based largely on studies using cross-sectional research designs. Nevertheless, the findings from this research helped direct intervention strategies in an effort to promote the rehabilitation of young people. The next generation of research addressing risk that is now emerging is based on more sophisticated longitudinal designs. These new studies allow for a better understanding of the long term outcomes of antisocial behaviour as well as the impact of interventions and life experiences of high risk children. The current meta-analytic review of the developmental trajectory literature summarizes the knowledge to date regarding the predictors of risk for children and adolescents who continue to offend into their adult years. It further summarizes intervention programs described in the literature, specifically those that targeted these risk factors and reported a reduction in childhood and family symptoms associated with one or more of the risks.



## CHAPTER ONE: Our Present Knowledge Base

### Knowledge of Risk for Youth Crime and Effective Interventions

Much of the knowledge regarding youth risk is drawn from narrative reviews and cross-sectional studies comparing youth who have experienced behavioural difficulty leading to youth justice involvement versus those who have had no involvement in the youth justice system. The status of the general literature continues to be reinforced by findings reported in recent cross-sectional and longitudinal studies by Farrington and Loeber (1999). There is a move away from the findings of general personality theory that may have driven much of the research evidence through to the early 1980s (e.g., Megargee's MMPI classification system) to a more *risk specific* means of offender classification. The work summarized by Henggeler (1989) and Andrews and Bonta (2001) reinforces a social psychological understanding in young offender risk findings. Specific assessment strategies have now been developed and implemented for specific purposes in young offender management (Hoge and Andrews, 1996).

#### **General principles from the assessment literature**

Primarily based on cross-sectional studies, past or current conditions have been linked with risk for criminogenic involvement. It is evident that individuals may cognitively process certain conditions in their environment, or reward certain styles or content of thinking, that are reflected in anti-social behaviour. Systemic variables that influence risk to a greater extent include families of origin, peer associates, and school or working conditions. Data also support the link between anti-social behaviour and substance use in the understanding of crime cycles (Huizinga, Menard & Elliott, 1989).

#### **Risk assessment in the psychology of criminal conduct emphasizes:**

- a move away from general personality theory to empirically-based measures of risk;
- risk factors that can be changed thus influencing the probability of the likelihood of treatment outcomes; and,
- the nature and strength of predictors in an effort to identify the type and intensity of intervention.

Accurate and relevant assessment of criminogenic risk is also tied to the major outcomes of effective treatment. While Lipsey and Wilson (1998) have identified the major *general* contributors to successful correctional programs, Andrews et al. (1990) addressed the issue of identifying the appropriate target of intervention. While Lipsey's results were encouraging regarding the average effect sizes supporting reductions of 10-30 per cent in re-offending within particular types of programming (i.e., behavioural over psychodynamic), Andrews' findings proposed that certain program components targeted to specific criminogenic risk factors – referred to as *clinical relevance* – could improve outcomes by an even greater extent. Hence, Andrews articulated the *risk principle of case classification* as a critical component of effective service thereby linking assessment with service delivery in the overall approach to effective correctional treatment. These findings suggest that assessments of appropriate risk relevant to criminal justice involvement are a necessary and fundamental part of successful program implementation.

### **General principles from the treatment literature**

Similar to the assessment literature, increasing knowledge with respect to young offender management and treatment has also been witnessed over the past decade. Progress in this area has capitalized not only on the specific effects of young offender programs, but also on the general knowledge base regarding child and adolescent and family-based intervention (Carr, 2000). Kazdin and Weisz (1998) recently noted in their review of child and adolescent interventions that expressions such as *knowledge-based*, *data-driven* and *empirically-supported* now routinely appear in selections made regarding treatment options for specific client groups. Knowledge with respect to successful programs for conduct-disordered and anti-social youth has progressed not only in the description of successful *components* of intervention (i.e., cognitive-behavioural) but also in the method of *service delivery* (i.e., custody versus community). Descriptions of promising programs are presented that can guide general decisions with respect to youth management. Specific service components are also detailed that can help guide placement decisions in regard to the *context* in which programs are offered.

### **Effective programmatic requirements**

Research has addressed the programmatic components of correctional interventions for youth by identifying the content and quality of effective programs (for a detailed review of this application to young offenders see Andrews, Leschied & Hoge, 1992; and to the general criminogenic literature see Andrews and Bonta, 2001). Components of effective programs are assessed in relation to their ability to meaningfully reduce recidivism within the targeted group.

#### **Programs assessed as effective:**

- systematically assess risk in clients;
- use the risk principle of case classification;
- adopt program orientations known to be effective;
- employ well educated and well trained staff;
- monitor program integrity and adherence to the intervention model used; and,
- rigorously evaluate the extent to which program goals are met.

Cognitive-behavioural interventions are often identified as having the greatest promise in reducing recidivism when compared with other programming orientations (e.g., Vennard, Sugg & Hedderman, 1997).

### **Institutional versus non-institutional placement for treatment**

While the vast majority of evaluative literature in youth justice has focused on community-based services, there is sufficient literature to compare the differential effects of programs in both community and residential contexts. Lipsey and Wilson’s (1997) review distinguished placement of treatment (i.e., residential versus community) in differentiating characteristics of effective programs. This is a critical differentiation since much of the debate regarding effective youth justice policies centres on the importance of incarceration as a relevant factor in community safety. This is despite the overwhelming evidence that has supported the increased safety offered by ecologically relevant community-based services as opposed to institutional placements.

### ***Evidence-based outcomes from the children's treatment literature***

Children's services have benefited from the treatment literature reporting outcomes based on specific interventions. Over the past decade, a number of literature reviews and meta-analyses have identified which treatments can be effective with which disorders (Kazdin & Weisz, 1998). Research has also assisted service providers in knowing how to translate effective services into everyday practice (Bernfeld, Farrington & Leschied, 2001). Despite the research caveats of the need for on-going replication and refinement of the treatments, Kazdin and Weisz (1998) suggest, "...empirically supported treatments, even in their current state, may be preferable to practice procedures that lack supporting evidence" (p. 37). The areas attracting the greatest attention in the evidence-based literature on effective childhood treatment are: anxiety; depression; oppositional, aggressive and antisocial behaviour; social skills; and, self-esteem.

### **The Emerging Field of Developmental Criminology<sup>1</sup>**

A number of longitudinal studies are now reporting results related to the trajectory of early life experience on later development. Major work being done in this area reflects the contributions of David Farrington, Rolf Loeber, Richard Tremblay, Terrie Moffitt and Philip Kendall, to name a few. This work conceptualizes developmental trajectories as reflecting a variety of causal factors that influence the potential development of antisocial outcomes. Some of these include parental inability to foster self-control in their children, neuropsychological disorders, a variety of parenting practices, coercive family interactions, and an inability of children to develop age-appropriate social skills (Lacourse, Cote, Nagin, Vitaro, Brendgen & Tremblay, 2002). Though more limited in number than the cross-sectional literature, the emergence of these longitudinal studies greatly assists in understanding important linkages between early childhood experience and the development of later childhood disorders.

### ***Systemic context of childhood disorders***

Silk, Nath, Seigel & Kendall et al. (2000) note that the history of studying developmental disorders in children reflects a progression from seeing children in isolation to understanding the social contexts which contribute to a child's potential for risk. These authors reflect the current appreciation that "[childhood] disorders develop via complex interactions between multiple etiologic factors" (Silk et al., 2000, p. 727). Longitudinal studies reflect that certain childhood disorders may have different developmental trajectories, influenced by different systemic variables. There remain those childhood disorders, such as depression, that are more strongly influenced by genetic or physiological contributors than other disorders that reflect learned responses from environmental influences (Goodman, 1999).

Despite these exceptions, the majority of childhood disorders reflect "age normative problem behaviours which most children give up as they grow up" (Loeber & Farrington, 2000, p. 746). The challenge for longitudinal researchers is to identify which behaviours identified early in childhood are not transient developmental reactions but relate to later difficulty. Early warning signs of protracted difficulty identified by a number of researchers (Loeber & Farrington, 2000; Hanish & Guerra, 2002; LaCourse et al., 2002; and Moffitt et al., 2002) reflect childhood factors such as temperament, impulsivity, social withdrawal, aggression and hyperactivity when it is associated with disruptive behaviour. Family-based risk factors reflect poor parenting practices, low supervision, physical punishment, neglect and poor communication. Age and gender are also associated with different childhood outcomes. For example, Offord et al. (2003) note that 8-9 year old boys' aggression is associated with the committal of property offences by the ages of 12-13 years.

<sup>1</sup> This section draws from previous work by 2 of the investigators, Debbie Chiodo and Alan Leschied, who previously generated a meta-analysis on school-based interventions for children.

The call to carefully use developmental models has been strongly reinforced in recent years (Conduct Problems Prevention Group, 1999; Kazdin, 1997). Greenberg, Domitrovich, and Bumbarger (2001) emphasize the important role of developmental theory in creating a conceptual framework for preventive interventions and for helping to identify appropriate targets for intervention activities. Clearly, therapeutic progress is more likely to occur when *theory* is emphasized in intervention research. However, as Jenson (1999) has noted, “excessive pressures to obtain immediately practical results and short-range gains may inadvertently lead to the selective de-emphasis of theory development” (p. 553).

**Developmental Criminology is particularly sensitive to:**

- the systemic context of many childhood disorders;
- a differential understanding of disorders that are influenced more by dynamic as opposed to static characteristics within the child’s early history; and,
- the timing of influence of certain systemic factors that can differentially affect childhood and adolescent outcomes.

***Persistent offenders create large resource demands***

Judy Findlay of the Ontario Child Advocate’s Office (2002) recently documented how the behaviour of high risk children and youth result in significant costs to their communities. Often, these children and their families are consumers of extensive multi-agency involvement. Findlay’s use of the term “cross-over kids” aptly describes the use of cross sector services – often including education, child welfare and youth justice – required by these children. The Washington State Social Policy Center, in tracking the costs of persistent social service involvement with high risk youth, suggest that numerous programs now exist that not only improve life-course outcomes of children but also dramatically lessen the economic cost to communities. Their recent release of the effectiveness of prevention efforts with children suggest the “good news” that there now exists sufficient evidence on which decision-makers can draw to make informed choices about services that are both cost-effective as well as cost-efficient (Aos, Phipps, Barnoski & Lieb, 2001).

***The identification of experimenters and persistent criminals***

Rolf Loeber (Loeber, Stouthamer-Loeber, Farrington & Lahey, 2002) is the major researcher regarding children’s life course trajectories and anti-social outcomes. The Pittsburgh Longitudinal Study, of which Loeber is the principal investigator, has been the source of much of what is known about age of onset, gender differences and the nature of initial antisocial behaviour and the long term consequences. Loeber and Farrington (2000), in summarizing much of this work indicate that age of onset of anti-social behaviour – defined as prior to 10 years of age – is indicative of a variety of consequences including: stability of antisocial behaviour over time; an inability to develop prosocial behaviours during the formative years; low interest and motivation to achieve educationally; higher risk towards mental health concerns such as depression and suicide; criminal victimization due to their differential association with other antisocial peers; and, an increase in substance use. Moffitt, Caspi, Harrington & Milne (2002) suggest 3 groups emerge from their analysis of poor long term outcomes as a result of the age of onset of offending. The child-onset offenders were regarded as the most problematic relative to adolescent and adult-onset. This was reflected in later psychopathy, mental health traits, substance dependence, financial and work problems, and violent crime including domestic violence.



## The Application of Knowledge to Crime Prevention

The science of criminal conduct is mature to the point where sufficient studies exist reporting the long term outcomes for children who experience early disruptions that lead to later persistent involvement in both the youth and adult systems. While still small relative to the cross-sectional literature related to risk, the number of longitudinal studies is now sufficiently large that general findings drawn together through meta-analysis can provide policy makers, practitioners, and researchers with the following: identification of factors placing children/youth at risk; knowledge regarding the naturally occurring factors that promote resiliency in children; and, information on programs and services that can lessen the probability of children/youth continuing their lives of crime. Organizations, such as the NCPC, can use this information to assist with decisions related to programs that should be funded for further evaluation, programs that are worthy of promotion through funding as pilots, and programs that are at a developmental period where they require more sophisticated designs in their evaluation such as with randomized trials.

### *The role of meta-analysis in knowledge building – advantages over narrative review*

Meta-analysis is the term used to report *quantitative* summaries of the treatment literature. Gendreau, Goggin and Smith (2001) have suggested that the application of meta-analysis to the review of the correctional literature has been pivotal in furthering the influence of that literature in justice policy formulation. Meta-analysis represents a significant advancement over earlier qualitative reviews (Wells, 1991). Meta-analysis statistically compares the types of treatments that are offered, to whom they are directed and with what nature and degree of outcomes. The meaningfulness of meta-analysis is limited only by the number and quality of the studies that are included in the review. Fortunately, adequate quality and quantity of studies now exist to make interpretations of the treatment literature in youth justice with confidence, although Losel (1997) has offered up some reservations with respect to the generalizing such findings. The limitations along with the major outcomes are summarized in the following section.

Meta-analytic reviews of the outcome literature support the desirability of providing programs that are related to the causes of crime (Andrews et al., 1990; Lipsey & Wilson, 1998; Gendreau & Goggin, 1996). Sanctions provided independent of appropriate rehabilitative efforts fail to demonstrate significant reductions in offending. These reviews have given rise to a clearer understanding of both the *systemic requirements* for the delivery of effective service as well as the *programmatic requirements* to provide meaningful reductions in youth recidivism.

## Purpose of This Work

The purpose of this meta-analysis is to help guide the research and program agenda for the National Crime Prevention Centre. The goal of the NCPC is to support and fund projects in Canada that increase community safety by reducing risk personally, or environmentally. As previously summarized, much is known of the evidence to support effective rehabilitative service. The current focus in research relates to prevention strategies that lower risk, increase resiliency and improve community safety (Leschied, 2000). This current review:

- examines the longitudinal data on youth as it relates to risk across a number of dimensions; and,
- examines the variables related to lowering risk in acknowledged higher risk cases through crime prevention strategies.



## CHAPTER TWO: Predictors of Risk

### Prediction Studies in Youthful Offending

Prediction studies in youthful offending reflect that there are multiple pathways to antisocial outcomes. The presence of certain factors are more powerful predictors than others, yet the presence of even the strongest predictors are not so definitive that all youth who have one, or even two, of these factors will become antisocial. However, it is now accepted that with more risk factors present there is an increased likelihood of offending behaviour occurring. Further, there is now evidence that the combination of certain factors at particular developmental periods influence the likelihood of offending. Specific factors at certain developmental periods are predictive of certain types of offences (i.e., violent or non-violent) and the persistence of offending. This is the area referred to as *developmental criminology*. It is the understanding that life events interact with youth at different developmental periods to influence the likelihood of an antisocial outcome.

These results are helpful in appropriately targeting services that influence the likelihood of antisocial outcomes. Since one of the missions of NCPIC is to inform and indeed fund projects that are consistent with evidence-based practice (i.e., relating interventions to the major predictors of risk), this context of linking services with known risk continues to be a valuable one. Hence, this study builds upon this science of criminal conduct by extending the empirical basis of risk prediction within a developmental framework.

#### ***Relating the current prediction literature to youthful offending***

The first phase of the current work required the location of studies that identified predictors of criminogenic risk for youths to their 18<sup>th</sup> birthday. In order to locate and retrieve relevant literature, both published and unpublished, a literature search was performed on multiple databases (i.e., Psychinfo, Eric, Social Work Abstracts, Medline, and Criminal Justice Abstracts). Limitations on search terms included: dates of publication to the last 10 years (i.e., 1994-2004); and, publication type (i.e., peer reviewed journal). If a database allowed, the population was limited to *childhood* and *school age* and *adolescence*. If the database did not allow for population limits, the keyword *youth* was included in each search.

A total of 37 literature searches were performed on each database. Each search reflected a variation in the combination of 17 keywords that were used within the aforementioned limitations. Keywords included *meta-analysis*, *longitudinal*, *crime*, *criminality*, *criminal*, *involvement*, *prediction*, *predictors*, *trajectories*, *risk and risk factors*, *at risk populations*, *determinants*, *delinquency*, *offending*, *young offenders*, and *recidivism*.

In addition to the former searches, 11 author searches were conducted using the database Psychinfo to ensure all articles published by the prominent researchers in the field were retrieved. The authors included David Farrington, Rolf Loeber, Richard Tremblay, Marc Leblanc, Don Andrews, Paul Gendreau, Claire Goggin, Alan Kazdin, David Wilson, and Mark Lipsey. These studies were then grouped into their common theme areas reflecting the following: methodological studies related to risk prediction in youthful offending; meta-analyses; attitudes; prediction of the type of offending; emotional adjustment/personality; family factors; peer influence; multi-domain studies; age of onset; and, resiliency. The following sections provide a brief summary of the findings in each area along with the studies that were generated.

#### ***Methodological studies related to risk with youthful offending***

Commentaries in methodological issues related to risk prediction are no different than in other areas of research and measurement. If there is one distinguishing aspect to methodology issues in young offender risk prediction, it is that the stakes are high when data is used to support decisions related to case management. The themes encountered include the following: extrapolating from large samples and complicated statistics to handle multilevel designs that are then applied to individual cases; trying to



predict low base rate phenomenon such as re-arrest violent behaviour; differences in self-reported criminal involvement versus official crime statistics; contrasting effects of retrospective versus prospective studies; cross-sectional versus longitudinal studies; and the use of adequate follow-up periods, to name a few.

### ***Meta-analytic studies***

Meta-analyses have been extensively reported in the criminal justice literature for both adult and youth offenders (Bonta, Law & Hanson, 1998; Cottle, Lee & Heilbrun, 2001). With youth justice prediction studies, meta-analyses findings are consistent in identifying factors of risk (Jolliffe & Farrington, 2004; Latimer, 2001). The primary risk factors fall in 2 distinct categories: static and dynamic risk. Static risk factors include characteristics such as gender and age. Dynamic risk, which are the areas where intervention studies are most helpful, tend to include characteristics of the family, peers, school, attitudes, substance use, use of leisure time, and certain personality variables. There is also variation in the strength of prediction of certain factors, as well as the combination of certain characteristics that influence the prediction.

While there is convergence in the meta-analyses regarding what the most common risk factors are, Cottle et al. (2001) suggest not all studies agree on the strength of prediction represented by the risk factors. For example, while substance use emerges in most studies as differentiating between groups of offenders versus non-offenders, the type and extent of substance use is also critical.

### ***Predicting type of offending***

There have been studies that have examined whether it is possible to predict the nature of youth offending based on early developmental factors (Capaldi & Patterson, 1996; Chung, Hill, Hawkins, Gilchrist & Nagin, 2002). The purpose of these studies was to differentiate violent from non-violent offenders (Baron & Hartnagel, 1998; Brame, Mulvey & Piquero, 2001). Findings revealed the following differentiating factors for violent youth: exposure to parental violence; a history of physical abuse at home; parental criminality; prior history of violent behaviour; prior institutional behaviour (e.g., rule violations); early leaving from school; and, the use of illicit drugs immediately after termination of a court order (Lattimore, Visher & Linster, 1995; Loeber & Stouthamer-Loeber, 1998; Nagin & Tremblay, 1999). However, despite the accuracy of individual factors and the increased accuracy from the use of multiple factors (e.g., the inclusion of 5 or more factors), “the overall accuracy of predicting youths who would go on to commit violent acts was limited” (Herrenkohl et al., 2000, p. 176). Gender differences are also apparent as the trajectory of prediction for boys, relative to girls, is more accurate based on early childhood variables. The prediction for girls increases in accuracy around 13 years of age (Loeber & Stouthamer-Loeber, 1996).

Several researchers argued that the best set of predictors is the following cluster of factors: prior history of parental violence; drug use; prior delinquent history that increases in severity; and, weak bonds to family and school. Prevention and intervention programs based on factors that strengthen efforts to improve these attachments – family and school – while coincidentally responding to the needs of youth exposed to parental violence are viewed as holding the greatest potential in reducing crime (Saner & Ellickson, 1996). One noteworthy caveat here was that prediction was greater for persistent, chronic offending as opposed to differentiating the type of offending. In other words, studies show greater accuracy differentiating minimal offenders from chronic offenders than violent offenders from non-violent offenders (Brame et al., 2001).

### ***Emotional adjustment/personality***

Data has tended to show only modest links between emotional adjustment and offending. This may reflect the significant differences linking gender, violence and emotional disorder. Depression has shown modest predictive accuracy when controlling for other common factors such as family and peer influences. However, without differentiating samples based on gender, the personality variables most frequently studied, self-esteem, extroversion and psychoticism, had only modest explanatory value (Beyers & Loeber, 2003; Heaven, 1996).

### **Family factors**

Literature linking family related factors to youthful offending focused on the following: nature of parenting (authoritarian, authoritative, coercive and inconsistent); parental management practices (use of physical discipline); exposure to violence within the home; involvement of a family member in the criminal justice system; child physical maltreatment (physical abuse, neglect); family transitions (parental separation/divorce/remarriage); and, the effects of sibling behaviour (Arseneault, Tremblay, Boulerice, Séguin & Saucier, 2000; Herrera & McCloskey, 2001; Juby & Farrington, 2001). Strongest predictors included exposure to parental violence, family member involvement in the criminal justice system, and maternal mental illness. It would appear that for many youth, authority conflicts emerge within families where there is a lessening in the strength of attachments. This can be triggered by events such as violence, criminality, and transitions such as the death of a parent or parental separation.

### **Peer influence**

Relationships with peers are amongst the strongest predictors of youthful offending (Brendgen, Vitaro & Bukowski, 1998). The strength of this relationship however has been more closely explored looking at trajectories from early childhood experience to early and later onset offending (Lacourse, Nagin, Tremblay, Vitaro & Claes, 2003).

Overall, differential association seems to explain peer influence. That is, the probability of offending is influenced by both the density of reward attached to being with certain antisocial peers and the inability or unwillingness to associate with prosocial peers (Tremblay, Masse, Vitaro & Dobkin, 1995). For boys, this trajectory seems to be a stable characteristic based on several studies utilizing teacher ratings of friends, and behaviour from 5 years of age. The majority of these studies were provided by kindergarten teachers with follow-up periods ranging from 10 to 12 years of age. There are also studies reporting the obvious regarding gang-related membership and antisocial activity (Garnier & Stein, 2002).

### **Attitudes**

Of all of the factors studied relating to risk prediction in criminal justice, attitudes tend to draw the most attention since, in both the youth and adult literature; they emerge as amongst the strongest predictors (Mills, Kroner & Forth, 2002). Indeed, some studies now routinely include a measure of attitudes in an effort to show how much variance is being accounted for solely by attitudes and how much additional variance can be explained by adding in new and different types of information (Zhang, Loeber & Stouthamer-Loeber, 1997). Also, attitude inventories are now routinely used in young offender assessment such as the Criminal Sentiments Scale and the Criminal Neutralization Scale. In terms of the treatment literature, interventions that are cognitive behavioural have tended to show the strongest effect since they influence the attitudes that are most closely linked to offending (e.g., Anger Replacement Training).

### **Multi domain studies**

The multi domain studies draw not on specific theoretical contexts in explaining youthful offending, but, rather at prediction as an empirical exercise that only after the fact has a theoretical context, such as social learning. For example, the studies by Loeber and the group from the University of Pittsburgh have collected large amounts of data on children and youth and then tracked, over long periods of time, the trajectories of criminal justice involvement (Stouthamer-Loeber, Loeber, Wei, Farrington & Wikström, 2002; Wiesner & Silbereisen, 2003). Regression and factor analysis were the methods used to examine the linkages. Similar to the summary under the section on meta-analyses, the domains that emerged most frequently were: certain child behaviours such as cruelty, manipulateness, ODD, and ADHD; attitudes relating to antisocial behaviours or to school, peers, family supervision, and communication; and, groupings of demographic characteristics such as the age of mother at time of birth, neighbourhood factors and education of the caretaker (Broidy, Tremblay, Brame, Ferghussen, Horwood, Laird et al., 2003).

***Age of onset***

Perhaps of all the recent published studies in risk prediction, the area relating age of onset to the extent and nature of offending has been the most significant (Tolan, Gorman-Smith & Loeber, 2000; Elander, Rutter, Simonoff & Pickles, 2000). The 3 categories of age of onset and the risk for persistent and type of offending include life-course type, limited duration, and late onset. The general findings support the following conclusions: early onset of antisocial behaviour “rob” children/youth of learning more adaptive, prosocial ways of interacting; children with early onset of antisocial behaviour, of all 3 categories related to age of onset, are the most persistent in continuing involvement in antisocial behaviour; evidence that those most at risk for adult violent behaviour are those with early age onset antisocial behaviour; and, characteristics of those in each category are differentiated by important developmental markers that are relevant for prevention (Loeber & Farrington, 2000; Tolan & Thomas, 1995).

***Resiliency***

This search identified 3 studies that help us understand what it takes for some youth who have many of the obvious risk factors to desist in offending or subsequent offending. Characteristics that were identified include intellectual capacity, emotional stability, and social maturity. Within a strength-based understanding of helping communities cope, building on “naturally occurring” sources of strength is an extremely valuable source of knowledge on which to draw (Carr & Vandiver, 2001; Stattin, Romelsjo & Stenbacka, 1997; Todis, Bullis, Waintrup, Schultz & D’Ambrosio, 2001).

**The current understanding related to the major predictors of risk in youthful offending emphasizes:**

- type of offending;
- emotional adjustment/personality;
- family factors;
- peer influence;
- attitudes; and,
- age of onset.



## CHAPTER THREE: The Meta-Analysis

### Methodology

#### Literature Search

Two sets of searches were performed. The first set was conducted on PsychINFO, ERIC, Social Work Abstracts, Medline, and Criminal Justice Abstracts. The second set of searches focused on Google Scholar. For the first set of searches, the following limitations were used: publication dates between 1994 and 2005; peer reviewed journals; and population of childhood, school age, adolescence and youth. In addition to these restrictions, each database was subjected to 37 searches involving various combinations of the following 17 keywords: *meta-analysis*, *longitudinal*, *crime*, *criminality*, *criminal*, *involvement*, *prediction*, *predictors*, *trajectories*, *risk*, *risk factors*, *at risk populations*, *determinants*, *delinquency*, *offending*, *young offenders*, and *recidivism*. A total of 219 studies were located. These results were further refined to remove duplications of studies as well as articles from the author search that were published prior to 1994, leaving a total of 146.

The second set of searches was conducted with Google Scholar. The first search focused on longitudinal, prospective and criminality studies by prominent researchers, including Farrington, Fergusson, Lipsey, Loeber, Tremblay, Leblanc, Andrews, Gendreau, Goggin, Kazdin, Paternoster, Weisz, and Wilson. Twenty-two articles were retrieved but only one was not a duplicate of studies resulting from the previous search protocol. The second search was used to collect articles drawn from large cohort studies, specifically, the Pittsburgh Youth Study, Philadelphia Cohort, National Youth Survey, Cambridge Study in Delinquent Development, Dunedin Multidisciplinary Health and Development Study, Seattle Social Development Project, Columbia County Longitudinal Study, Iowa Youth and Families Project, National Longitudinal Study of Youth, Oregon Youth Study, National Collaborative Perinatal Project, Buffalo Longitudinal Study of Young Men, Individual Development and Adjustment, and Young Lawbreakers as Adults. This search yielded 30 articles, but 27 of them were duplicates of articles previously obtained. The third search focused on combinations of the following key phrases: *adult crime*, *recidivism*, *criminality*, *longitudinal*, *criminal behavior*, *conviction*, and *offenses*. A total of 46 articles were retrieved with 40 of them being duplicates. In summary, 10 new studies were selected from the Google Scholar searches and were retained after review. Combining this number with the previous search yielded a total of 156 articles. Study investigators reviewed these articles and 118 were rejected due to lack of data (e.g., review or descriptive articles), samples at follow-up that had not yet met the age of majority as defined by the country where the study was conducted, duplication, statistical summaries that did not allow for extraction of effect sizes, or redundancies in data (e.g., two or more articles reporting the same data). A total of 38 studies were included in the meta-analysis. Child factors were obtained from 29 studies and family factors were reported in 19.

#### Coding of studies

Prior to statistical analysis, data from the selected studies were coded into several key categories including authorship and cohort name. Studies were also coded according to predictor variables that were assigned to 1 of 2 major categories: (a) family factors that included static risk, parental mental health, parental management, family structure, and adverse family environment (see Table 1); and (b) child factors including static risk, emotional, behavioural, social interpersonal and developmental concerns, child specific school and learning issues, prosocial behaviour, and criminal history (see Table 2). Outcomes for each study were coded for official conviction or self-report. A further category focused on the age of participants prior to reaching the age of majority, and data were coded as early (birth to 6 years), mid (7 to 11 years), or late childhood/adolescence (12 to age of majority). The last category was designated as a moderator variable and denoted samples as either community (i.e., birth cohorts) or non-community (i.e., drawn from special populations). Table 3 provides a summary of coding categories for each study included in the meta-analysis.

TABLE 1. FAMILY FACTOR DESCRIPTIONS

Factors	Factor Sub-Categories	
<i>Static Risk</i>	<ul style="list-style-type: none"> <li>• Mother's age at birth of child</li> <li>• Complications at               <ul style="list-style-type: none"> <li>– Birth</li> <li>– Pregnancy</li> </ul> </li> <li>• Substance abuse during pregnancy</li> <li>• Mental health status during pregnancy</li> <li>• Birth weight</li> </ul>	<ul style="list-style-type: none"> <li>• Unwanted pregnancy</li> <li>• Parent criminal history and incarceration history</li> <li>• Family criminal history and incarceration history</li> <li>• Immigrant status</li> <li>• Socioeconomic status (SES)</li> </ul>
<i>Parental Mental Health</i>	<ul style="list-style-type: none"> <li>• Depression</li> <li>• Substance abuse               <ul style="list-style-type: none"> <li>– Smoking</li> <li>– Drugs</li> <li>– Alcohol</li> </ul> </li> <li>• Psychiatric problems</li> <li>• Psychiatric hospitalization</li> </ul>	
<i>Parental Management</i>	<ul style="list-style-type: none"> <li>• Discipline</li> <li>• Authoritarianism</li> <li>• Supervision</li> <li>• Endorsement of punishment</li> <li>• Bedtime issues</li> <li>• Eating habits</li> </ul>	
<i>Family Structure</i>	<ul style="list-style-type: none"> <li>• Number of children in family</li> <li>• Size of family</li> <li>• Marital status</li> <li>• In or out of care</li> <li>• Family separation</li> <li>• Number of consecutive caregivers</li> </ul>	<ul style="list-style-type: none"> <li>• Church attendance</li> <li>• Living with family</li> <li>• Child welfare system involvement</li> <li>• Residence change</li> <li>• Change in structure</li> </ul>
<i>Adverse Family Environment</i>	<ul style="list-style-type: none"> <li>• Family conflict</li> <li>• Witnessing violence</li> <li>• Interparental conflict</li> <li>• Sibling relationships</li> <li>• Disharmony</li> <li>• Family stress</li> <li>• Poor communication</li> <li>• Adverse family environment</li> </ul>	<ul style="list-style-type: none"> <li>• Physical and sexual abuse</li> <li>• Neglect</li> <li>• Rejection</li> <li>• Poor social circumstances</li> <li>• Parent-child relationship</li> <li>• Physical abuse</li> <li>• Sexual abuse</li> <li>• Spousal physical abuse</li> </ul>

**TABLE 2. CHILD FACTOR DESCRIPTIONS**

<b>Factors</b>	<b>Factor Sub-Categories</b>	
<i>Static Risk</i>	<ul style="list-style-type: none"> <li>• Age</li> <li>• Gender</li> <li>• Age began crime</li> <li>• Age began drug use</li> <li>• Race</li> </ul>	
<i>Emotional Concerns</i>	<ul style="list-style-type: none"> <li>• Depressive symptoms</li> <li>• Substance abuse</li> <li>• Denial</li> <li>• Restraint</li> <li>• Dependency</li> <li>• Mood</li> <li>• Psychiatric disorders</li> <li>• Self-deprecation</li> <li>• Withdrawal</li> <li>• Anxiety</li> <li>• Internalizing</li> </ul>	<ul style="list-style-type: none"> <li>• Somatic complaints</li> <li>• Withdrawn</li> <li>• Emotional disturbance</li> <li>• Child's expression of guilt</li> <li>• Fears</li> <li>• Value orientation</li> <li>• Thought disturbance</li> <li>• Vulnerable</li> <li>• Alienation</li> <li>• Distress</li> </ul>
<i>Behavioural Concerns</i>	<ul style="list-style-type: none"> <li>• Aggression</li> <li>• MMPI</li> <li>• Antisocial behaviour</li> <li>• Attentional problems</li> <li>• Compliance</li> <li>• Submissive behaviour</li> <li>• Risky sexual behaviour</li> <li>• Daring</li> <li>• Delinquent behaviours</li> <li>• Externalizing</li> <li>• Hyperactivity</li> <li>• Impulsivity</li> <li>• Suicide attempt</li> <li>• Conduct problems</li> <li>• Motor restlessness</li> <li>• Tantrums</li> <li>• Truancy</li> <li>• Attention seeking</li> <li>• Goal orientation</li> </ul>	<ul style="list-style-type: none"> <li>• Sexual perpetration</li> <li>• Disruptive behaviour disorder</li> <li>• Promiscuous behaviour</li> <li>• Reliable</li> <li>• Activity</li> <li>• Troublesome</li> <li>• School discipline</li> <li>• Emotionally-behaviourally disturbed</li> <li>• Lack of control</li> <li>• Pica</li> <li>• Soiling</li> <li>• Quarrelsome</li> <li>• Immaturity</li> <li>• Night waking</li> <li>• Night time and day time enuresis</li> <li>• Prior incarcerations</li> </ul>
<i>Social and Interpersonal Concerns</i>	<ul style="list-style-type: none"> <li>• Social skills</li> <li>• Gang membership</li> <li>• Peer deviancy</li> <li>• Asocial</li> <li>• Peers present during offence</li> <li>• Social maladjustment</li> </ul>	

<i>Developmental Concerns</i>	<ul style="list-style-type: none"> <li>• Autism</li> <li>• Immaturity</li> <li>• Speech development</li> <li>• Motor development</li> <li>• Temperament</li> <li>• Belief in the moral order</li> <li>• Language development</li> <li>• Physical development</li> <li>• Social development</li> </ul>	
<i>School/Learning: Child Specific</i>	<ul style="list-style-type: none"> <li>• Academic achievement</li> <li>• Cognitive ability</li> <li>• Neuropsychological risk</li> <li>• Academic aspirations</li> <li>• Grade point average (GPA)</li> <li>• School completion</li> </ul>	<ul style="list-style-type: none"> <li>• Vocational training</li> <li>• Unemployment</li> <li>• Conflictual school settings</li> <li>• Learned focused school setting</li> </ul>
<i>Prosocial Behaviour</i>	<ul style="list-style-type: none"> <li>• Peaceable</li> <li>• Prosocial (i.e., behaviour, bonding, involvement, opportunities, rewards)</li> <li>• Good relationships with all teachers</li> <li>• Strives for social justice</li> <li>• Reasonable</li> <li>• Constructiveness</li> </ul>	
<i>Criminal History</i>	<ul style="list-style-type: none"> <li>• Property offences only</li> <li>• Violence offences only</li> <li>• Property and violence offences</li> <li>• Prior incarcerations</li> <li>• Juvenile arrests</li> <li>• Victimized a child</li> <li>• Victimized an adult</li> </ul>	<ul style="list-style-type: none"> <li>• Victimized a male</li> <li>• Number of victims</li> <li>• Type of crime</li> <li>• Attended correctional school</li> <li>• Trouble with police prior to first incarceration</li> </ul>

**TABLE 3. ALPHABETIZED LISTING BY FIRST AUTHOR SUMMARIZING STUDY CHARACTERISTICS: PREDICTORS, SAMPLE, AND OUTCOME TYPE**

Study	Citation	Predictors	Sample	Outcome
1	Andersson, Magnusson & Wennberg (1997)	<b>Child factors:</b> <b>Behavioural concerns</b> – aggression, hyperactivity	Non-community sample Male (n=540) Initial age 13 Follow-up age 25	Official conviction Criminality official record
2	Barkley, Fischer, Smallish & Fletcher (2004)	<b>Child factors:</b> <b>Behavioural concerns</b> – hyperactivity	Non-community (n=147) and community (n=73) (M=200,F=20) Initial age 4-12 Follow-up age 19-25	Official convictions Self-report 3+ arrests Self-report ever arrests Official misdemeanor arrests Self-report 2+ arrests
3	Benda, Corwyn & Toombs (2001)	<b>Child factors:</b> <b>Static risk</b> – age began crime, age began drug use, gender, race <b>Emotional concerns</b> – value orientation, withdrawal, alienation, depressive symptoms, substance abuse, denial, repression, self-deprecation, thought disturbance <b>Behavioural concerns</b> – MMPI, prior incarcerations, aggression, antisocial behaviour <b>Social and interpersonal concerns</b> – asocial, gang membership, peers present during offence, social maladjustment <b>Developmental concerns</b> – autism, immaturity <b>School/learning specific</b> – cognitive ability <b>Family factors:</b> <b>Static risk</b> – family incarceration <b>Parental mental health</b> – substance abuse (drugs; father and/or mother) <b>Family structure</b> – family structure <b>Adverse family environment</b> – abuse, parent-child relationship	Non-community sample (M=339, F=75) Initial age 17 Follow-up age 19	Official conviction Violent offence



4	Brennan, Grekin, Mortensen & Mednick (2002)	<p><b>Family factors:</b>  <b>Static risk</b> – complications at pregnancy and birth, parental criminal history (father), mother’s age at birth of child, substance abuse during pregnancy (drugs, smoking), SES</p> <p><b>Parental mental health</b> – substance abuse (both parents – drug, smoking, alcohol), psychiatric problems or hospitalization (both parents)</p> <p><b>Adverse family environment</b> – rejection</p>	Community sample (M=4169, F=3943) Initial age 2 Follow-up age 35	Official arrest Offence official record
5	Cannon, Huttunen, Tanskanen, Arseneault, Jones & Murray (2002)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – attentional problems, truancy</p> <p><b>School/learning specific</b> – academic achievement (e.g., reading, writing, math, religion, music, handcraft, sports)</p> <p><b>Family factors:</b>  <b>Static risk</b> – complications at pregnancy and birth</p>	Non-community sample (n=400, 38 offenders, M=31, F=7) Initial age 0 or 11 Follow-up age 35-44	Official conviction Official records
6	Christoffersen, Francis & Soothill (2003)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – suicide attempt, psychiatric disorders</p> <p><b>School/learning specific</b> – vocational training, school completion, unemployment</p> <p><b>Family factors:</b>  <b>Static risk</b> – mother’s age at birth of child, parent criminal history/incarcerations (father or mother – sexual crime, violence), SES</p> <p><b>Parent mental health</b> – substance abuse (both parents – drug and alcohol) father alcohol abuse, father drug abuse, psychiatric problems or hospitalization (both parents)</p> <p><b>Family structure</b> – family separation, child welfare system involvement</p> <p><b>Adverse family environment</b> – spousal physical abuse</p>	Community sample – limited to offenders Male (n=1936, 77 of cohort offenders) Initial age 14 Follow-up age 27	Official conviction Violent offence
7	Donnellan, Ge & Wenk (2000)	<p><b>Child factors:</b>  <b>School/learning specific</b> – academic achievement (i.e., CAT – arithmetic, language, reading, total; CTTM – language, non-language; GATB – general, numeric, perceptual, spatial, verbal; Raven’s Progressive Matrices)</p>	Non-community sample Male (n=3652) Initial age 17 Follow-up age 25	Official arrests

8	Eklund & Klinteberg (2003)	<p><b>Child factors:</b>  <b>Static risk</b> – age began crime  <b>Behavioural concerns</b> – motor restlessness, aggression, attentional problems</p>	<p>Non-community young offenders (n=192) and community controls (n=95)                      Male (n=287)                      Initial age 11-14                      Follow-up age 32-38</p>	<p>Official criminal violent convictions</p>
9	Ezell & Cohen (1997)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – property and violence offences, violence offences only, property offences only</p>	<p>Non-community sample                      Male (n=2200)                      Initial age 15 or 16 or 17                      Follow-up age 24</p>	<p>Official arrests                      Offence official record</p>
10	Farrington (2000)	<p><b>Child factors:</b>  <b>Emotional concerns</b> – vulnerable  <b>School/learning specific</b> – academic achievement  <b>Family factors:</b>  <b>Static risk</b> – parent criminal history</p>	<p>Community sample                      Male (n=411)                      Initial age range 8-10                      Follow-up age 21-40</p>	<p>Official conviction</p>
11	Fergusson & Woodward (1999)	<p><b>Family factors:</b>  <b>Static risk</b> – mother's age at birth of child</p>	<p>Community sample (n=1025)                      Mixed (gender not reported)                      Initial age 0                      Follow-up age 18</p>	<p>Official conviction                      Violent/                      Non-violent                      Self-report                      non-violent</p>
12	Hamalainen & Pulkkinen (1995)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – aggression, submissive behaviour, impulsivity, conduct problems, reliable, attentiveness  <b>School/learning specific</b> – GPA  <b>Prosocial behaviour</b> – prosocial behaviour, peaceable, strives for justice</p>	<p>Community sample                      (M=196, F=173)                      Initial age 8                      Follow-up age 14-32</p>	<p>Official conviction</p>
13	Henry, Caspi, Moffitt, Harrington & Silva (1999)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – impulsivity  <b>Family factors:</b>  <b>Static Risk</b> – SES</p>	<p>Community sample                      Male (n=535)                      Initial age 3                      Follow-up age 21</p>	<p>Official conviction                      Self-report                      non-violent                      offence                      Delinquency scale</p>
14	Herrenkohl, Huang, Kosterman, Hawkins, Catalano & Smith (2001)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – antisocial behaviour (e.g., rewards, involvement, opportunities, bonding)  <b>Social and interpersonal concerns</b> – social skills  <b>Developmental concerns</b> – belief in the moral order</p>	<p>Community sample                      (M=396, F=372)                      Initial age 10 or age range 14-16                      Follow-up age 18</p>	<p>Self-report                      Violence                      Official record</p>

15	Hodgins (1994)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – conduct problems</p>	<p>Community sample  (M=7235, F=6975)  Initial age 12-16  Follow-up age 30</p>	<p>Official conviction  No. of violent crimes  Official conviction  No. of crimes</p>
16	Huesmann, Eron & Dubow (2002)	<p><b>Child factors:</b>  <b>Static risk</b> – birth weight  <b>Emotional concerns</b> – child's expression of guilt, discrepancy in parent-child self-image  <b>Social and interpersonal concerns</b> – peer nominations (popular, aggressive)  <b>School/learning specific</b> – cognitive ability  <b>Family factors:</b>  <b>Static risk</b> – mother's age at child's birth, birth weight, parent criminal history, SES  <b>Parental management</b> – authoritarianism, endorsement of punishment  <b>Family structure</b> – number of children in family, church attendance  <b>Adverse family environment</b> – disharmony, rejection</p>	<p>Community sample  (M=436, F=420)  Initial age 8  Follow-up age 30</p>	<p>Official arrests</p>
17	Johnson, Simons & Conger (2004)	<p><b>Family factors:</b>  <b>Static risk</b> – SES</p>	<p>Community sample  Male (n=153)  Initial age 12  Follow-up age 17</p>	<p>Self-report delinquency checklist</p>
18	Kasen, Cohen & Brook (1998)	<p><b>Child factors:</b>  <b>School/learning specific</b> – academic achievement, academic aspirations, conflictual school settings, learning focused school settings</p>	<p>Community sample  (M=213, F=239)  Initial mean age 13  Follow-up mean age 22</p>	<p>Self-report  Offence official record</p>
19	Kjelsberg (1999)	<p><b>Child factors:</b>  <b>Static risk</b> – age crime began  <b>Emotional concerns</b> – substance abuse (drug)  <b>Behavioural concerns</b> – disruptive behaviour disorder, conduct disorder, promiscuous behaviour  <b>Criminal history</b> – attended correctional school  <b>Family factors:</b>  <b>Parental mental health</b> – psychiatric problems (both parents – antisocial)  <b>Family structure</b> – living with family, number of successive caregivers</p>	<p>Non-community  (M=328, F=153)  Initial mean age 15  Follow-up age over 21</p>	<p>Official conviction,  Life course persistent criminal behaviour</p>

20	Klein, Forehand, Armistead & Long (1997)	<p><b>Family factors:</b>  <b>Parent mental health</b> – depression (mother)  <b>Family structure</b> – marital status  <b>Adverse family environment</b> – interparental conflict, parent-child relationship</p>	Community sample (M=55, F=77) Initial mean age 14 Follow-up mean age 20	Official convictions Minor delinquency Index offences Official arrests Arrests convictions
21	Levenston (2001)	<p><b>Child factors:</b>  <b>Emotional concerns</b> – anxiety, depressive symptoms, internalizing, somatic complaints, withdrawn  <b>Behavioural concerns</b> – aggression, delinquent behaviour, externalizing, hyperactivity, impulsivity, attentional problems</p>	Non-community sample Male (n=97) Initial mean age 8 Follow-up mean age 25	Official conviction violent offences/ non-violent offences
22	Moffitt, Caspi, Harrington & Milne (2002)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – antisocial behaviour (during adolescence)</p>	Community sample Male (n=477) Initial age 5 Follow-up age 26	Court conviction drugs/ property offence/order violation Violent conviction Self-report property offence/rule violation Drug offences Violent offences
23	Nicholson, Fergusson & Horwood (1999)	<p><b>Family factors:</b>  <b>Family structure</b> – living with family (step family)</p>	Community sample (M=455, F=436) Initial age range 6-16 Follow-up age 18	Self-report delinquency convictions Self-report non-violent contact with criminal justice system
24	Nisbet, Wilson & Smallbone (2004)	<p><b>Child factors:</b>  <b>Static risk</b> – age (i.e., at mental health assessment)  <b>Criminal history</b> – victimizing a child, adult, or male; number of victims, number of crimes</p>	Non-community Offenders Male (n=303) Initial mean age 16 Follow-up mean age 23	Official conviction Adult offender
25	Overbeek, Vollebergh, Meeus, Engels & Luijpers (2001)	<p><b>Child factors:</b>  <b>Emotional concerns</b> – emotional disturbance</p>	Community sample (M=550, F=752) Initial age 12 Follow-up mean age 22	Self-report non-violent offence Delinquency scale

26	Piquero & White (2003)	<p><b>Child factors:</b>  <b>Static risk</b> – gender  <b>Behavioural concerns</b> – school discipline  <b>School/learning specific</b> – cognitive ability, neuropsychological risk  <b>Family factors:</b>  <b>Static risk</b> – mother’s age at child’s birth, SES  <b>Family structure</b> – marital status (mother)</p>	Community sample (n=987) Mixed (gender not reported) Initial age under 18 Follow-up age over 18	Official conviction Offence official record
27	Pulkkinen & Hamalianen (1995)	<p><b>Child factors:</b>  <b>Emotional concerns</b> – fearful of other children, anxiety  <b>Behavioural concerns</b> – aggression, compliance, self-control, quarrelsome  <b>Social and interpersonal concerns</b> – never quarrels with others  <b>Prosocial behaviour</b> – constructiveness, acts reasonably</p>	Community sample (M=196, F=173) Initial age 8 or 14 Follow-up age 20	Official conviction Official criminal records
28	Raine, Brennan & Mednick (1994)	<p><b>Family factors:</b>  <b>Static risk</b> – complications at birth  <b>Adverse family environment</b> – rejection, poor social circumstances</p>	Community sample Male (n=4269) Initial age 0 Follow-up age 18	Offence official record Violent offences
29	Rasanen, Hakko, Isohanni, Hodgins, Jarvelin & Tihonen (1999)	<p><b>Child factors:</b>  <b>Developmental concerns</b> – language/motor development (problems prior to 1 year)  <b>Family factors:</b>  <b>Static risk</b> – SES, mother’s age at child’s birth, complications at birth, mental health during pregnancy, substance abuse during pregnancy (smoking), unwanted pregnancy  <b>Family structure</b> – number of children in family, marital status (mother)</p>	Community sample (M=5636, F=5381) Initial age under 1 Follow-up age 21	Official conviction Violent offence Non-violent crime Two or more crimes Violent crime
30	Satterfield & Schell (1997)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – hyperactivity</p>	Non-community (n=110) and community (n=89) Male (n=199) Initial age 13-21 Follow-up age 23	Official conviction Offence official record
31	Sauvola, Koskinen, Jokelainen, Hakko, Jarvelin & Rasanen (2002)	<p><b>Family factors:</b>  <b>Family structure</b> – marital status (reasons for single parenthood)</p>	Community sample Male (n=5589) Initial age 14 Follow-up age 15-32	Official conviction violent crimes Official conviction non-violent crimes

32	Scholte (1999)	<p><b>Child factors:</b>  <b>Static risk</b> – age, gender  <b>Social and interpersonal concerns</b> – peer deviancy  <b>Family factors:</b>  <b>Parental management</b> – parental supervision/control  <b>Family structure</b> – support  <b>Adverse family environment</b> – family conflict</p>	Community sample (M=113, F=37) Initial age 15 Follow-up age 21	Self-report non-violent offence Delinquency measure
33	Shepherd, Farrington & Potts (2002)	<p><b>Child factors:</b>  <b>Behavioural concerns</b> – daring, attentional problems, troublesome  <b>School/learning specific</b> – cognitive ability  <b>Family factors:</b>  <b>Static risk</b> – parent criminal history, SES  <b>Parental management</b> – supervision  <b>Family structure</b> – number of children  <b>Adverse family environment</b> – change in structure</p>	Community sample Male (n=411) Initial age range 8-10 Follow-up age range 19-40	Official convictions Violent offence
34	Smith & Farrington (2004)	<p><b>Family factors:</b>  <b>Parental management</b> – authoritarian (father), supervision</p>	Community sample Male (n=411) Initial age 8-10 Follow-up age 19-40	Parental report conduct problems
35	Steiner, Cauffman & Duxbury (1999)	<p><b>Child factors:</b>  <b>Emotional concerns</b> – distress, restraint</p>	Non-community sample Young offenders Male (n=481) Initial age 16 Follow-up age 20.5	Official conviction Offence official record personal offence Offence official record property offence

36	Stevenson & Goodman (2001)	<p><b>Child factors:</b>  <b>Static risk</b> – gender  <b>Emotional concerns</b> – dependency, mood, number of fears, anxiety  <b>Behavioural concerns</b> – daytime and nighttime enuresis, night waking, oiling, attentional problems, concentration, attention seeking, tantrums, pica  <b>Social and interpersonal concerns</b> – relations with others, relations with siblings  <b>Developmental concerns</b> – language, physical, and social development  <b>Family factors:</b>  <b>Static risk</b> – immigrant status, SES  <b>Parental management</b> – eating habits, bedtime issues, management  <b>Family structure</b> – family size, family status  <b>Adverse family environment</b> – family stress</p>	Community sample offenders (n=828) Mixed (gender not reported) Initial age 3-23 Follow-up age 23-24	Official conviction Offence official record
37	Wennberg & Bohman (2002)	<p><b>Child factors:</b>  <b>Social and interpersonal concerns</b> – temperament  <b>Behavioural concerns</b> – aggression, goal orientation</p>	Community sample Male (n=122) Initial age 4 Follow-up age 30	Official conviction Drug related offence Official record
38	Widom & Ames (1994)	<p><b>Family factors:</b>  <b>Adverse family environment</b> – abuse or neglect</p>	Abused and neglected (M=49% and F=51%) Initial age under 11 Follow-up age 26-27	Official conviction Offence official record general/ property/ violent

## Demographic Summary

Sample sizes were summed across the 38 studies included in the meta-analysis resulting in a total of 66,647 participants. There were 43,586 males (65.4%), 19,233 females (28.9%), and 3,828 (5.7%) participants not identified by gender. A total of 5,365 (8.0%) participants were from non-community samples. Half of all participants were from Scandinavian countries ( $n = 33,384$  or 50.1%), with the next largest group from the United States ( $n = 16,455$  or 24.7%). Other geographical areas included Denmark ( $n = 10,459$  or 15.7%), Australia and New Zealand ( $n = 3,247$  or 4.9%), Holland ( $n = 1,452$  or 2.2%), and the United Kingdom ( $n = 1,650$  or 2.5%).

The overall mean age at initial assessment was 10.5 years ( $SD = 5.0$ ). Twenty-five studies provided mean ages, but 13 provided age ranges. Therefore, in order to calculate an overall mean, the midpoint of each age range was used. The same procedure was used to determine mean age at follow-up,  $M = 24.6$  ( $SD = 5.6$ ), and the average number of years between childhood and adult assessments,  $M = 13.3$  ( $SD = 7.4$ ).



## Estimating Program Effects

Using the meta-analysis program, *Comprehensive Meta-analysis* (Version 2), effect size (*ES*) estimates were derived from 38 studies. *ES* is a common metric to reflect the magnitude of a treatment effect. That is, *ES* can be thought of as the average percentile standing of the average treated (or experimental group) participant, relative to the average untreated (control group) participant. In some cases in this report, *ES* was measured as the impact of the independent variable (e.g., behavioural predictor) on the dependent variable (e.g., official conviction). Because the dependent variable is often measured differently from one study to another (e.g., self-report, official convictions, violent versus non-violent offences), it is necessary to transform the reported data to a common metric (much like a z-score) before calculating the mean *ES*. In meta-analytic studies, the data reported are statistically combined to provide an estimated *ES*, in this case, the impact of a given predictor, such as the child’s behaviour, on measures of adult criminality.

The meta-analysis program allowed for study information to be entered according to the categories previously mentioned. Effect sizes were entered directly if provided within a study article, or else were computed by the program after relevant summary data were entered. The program was used to calculate weighted effect sizes and significance, 95% confidence intervals, tests of the null hypotheses, and heterogeneity statistics.

As a general guideline, Cohen (1988) proposed small, medium and large values for *ES*. A “medium” *ES* (0.50) was defined by Cohen to represent an effect likely to be visible to the naked eye of a careful observer. In fact, medium *ES* approximates the average size of observed effects in various fields. Cohen set a “small” *ES* (0.20) as one that is noticeably smaller than a medium *ES* but not too small as to be trivial. Finally, a “large” *ES* (0.80) was described as the same distance above medium as small was below it. While these conventions are useful and a valid way to summarize results, Weisz and colleagues (2005) argue that proper interpretation of *ES* values may differ depending on the particular independent variable examined, and practical significance must always be weighed. Thus, in the current meta-analysis, even a statistically “small” *ES* could be interpreted as having an impact in predicting adult convictions given that adult convictions in general, are relatively low-base rate phenomena.

Effect sizes were calculated in a similar manner for all studies such that positive values always meant that the independent variable (e.g., behavioural concerns) was a predictor of adult criminality. Negative values indicate that the independent variable was a predictor in the control group rather than the experimental group (or for single group studies, prediction was in the opposite direction).

Most studies compared predictors on more than one type of outcome measures. Because multiple *ES* values derived from the same study may not represent statistically independent observations, multiple *ES* values obtained from individual measures within the same study were averaged to obtain a single *ES* for the outcomes. Finally, *ES* values were not conducted on predictors and outcomes that did not include at least 3 studies for comparison.



**An effect size is:**

- represented by *ES*;
- the magnitude of the treatment effect, or;
- the impact of the independent variable (predictor) on the dependent variable (outcome).

An *average or overall ES* is the mean of the effect sizes obtained across studies.

A *small ES* is around .20, a *medium ES* is around .50, and a *large ES* is around .80.

Several other summary statistics are reported in Tables 4 through 6. First, the total number of effect sizes used to calculate an average or overall effect size is indicated by  $k$ . Next, the significance or reliability of an average or overall effect size is represented by  $p$ . The conventional probability level of .05 is used such that a  $p$  value of .05 or less indicates that an effect size is significant. The test of significance is based on the  $z$ -distribution so that significant average effect sizes are found when  $z$  is between  $-1.96$  and  $+1.96$  at the .05 level of significance. Confidence intervals (CI) for each average effect size are also reported. They indicate the range within which the population effect size is likely to be for a particular set of comparisons. For example, a 95% CI of .27 to .35 around an average effect size of .30 indicates a 95% probability that the population mean effect size is somewhere between these lower and upper limits. The other values reported in these tables are associated with heterogeneity of variance ( $Q$ ). This statistic indicates the degree to which the various effect sizes that are averaged into an overall effect size all estimate the same population effect size. If  $Q$  is significant (i.e.,  $p < .05$ ), then it is important to consider methodological differences between studies that may be contributing to the uneven estimates of population effect size. (For more detailed descriptions of these summary statistics refer to Lipsey & Wilson, 2001).

**Summary statistics are represented by:**

- $k$ , the number of *effect sizes* used to calculate an *average or overall ES*;
- $p$ , the probability that an *average or overall ES* is significant, based on the  $z$ -test;
- *95% CI*, the 95% confidence interval or probability that the population mean effect size is between the reported lower and upper limits;
- $Q$ , the degree to which the effect sizes used to calculate an *average or overall ES* all estimate the same population effect size.

## Results

Results are presented in 6 sections: (1) descriptive characteristics of the studies; (2) an overall meta-analysis across all outcomes and predictors for child factors; (3) separate analyses for each child predictor; (4) an overall meta-analysis across all outcomes and predictors for family factors; (5) separate analyses for each family predictor; and (6) moderator analyses. Reported results are for a random effects analysis, which is appropriate due to the recognized variability within the sampling of studies (Borenstein & Rothstein, 1999). Weighted effect sizes are reported for all analyses since this approach gives greater weight to *ES* values from larger samples. It has been suggested that where possible, weighted *ES* values are preferable to unweighted calculations, where *ES* values are given equal weight regardless of the sample size (Wolfe, 1986).

### Overall Effect of All Outcomes and Predictors for Child Factors

The 29-study database of child factor studies yielded 274 *ES* measurements (see Table 4). The weighted overall *ES* across all mean *ES* measurements was calculated. Overall, the child predictors examined by this synthesis appear to modestly predict adult criminality. Regardless of the type of child factor examined, the overall *ES* was .29 (*CI* = .17-.40) which is significant ( $Z_c = 4.93, p < .001$ ). This suggests that child factors in general have a modest effect in predicting adult correctional outcomes.

Although the overall mean *ES* in the current analysis provides evidence that the child predictors reviewed in this report, were on average, modest predictors of adult criminality, the highly heterogeneous nature of the distributions suggests large differential effects across studies ( $Q_t = 242.52, df = 28, p < .001$ ). This is not surprising given the varied methodologies reported across studies, the differences in the measurement of predictors, and the heterogeneous nature of the samples. Thus, any attempts to interpret the overall average *ES* may be misleading, and hence a closer examination of factors that may moderate the *ES* is warranted.

Two potential sources of variation in *ES* values across studies were the type of child predictor measured and the age at which the factors were measured. While gender would have been an obvious source of variation, many studies were conducted on males ( $n = 17; 59\%$ ) and of those studies that examined both genders ( $n = 12$ ), many of these studies did not include female participants in the analyses because often there were too few subjects to examine statistically. A third source of variation that is reviewed later in this report is whether the youth are from a community sample (e.g., birth cohorts) or a non-community-based sample (e.g., adolescent sex offenders).

TABLE 4. CHILD FACTORS COMPARISONS FOR ALL OUTCOMES X TIMEPOINT – RANDOM MODELS

Predictors	Timepoint	K	Studies in Comparison	Effect Size	Significance of Effect Size	95% Confidence Interval		z	Heterogeneity			
						Lower limit	Upper limit		Q-value	df (Q)	p-value	
Overall (all risk factors combined)	<b>Total</b>	274	All		.29	.000	.173	.400	4.93	242.52	28	.000
	early childhood	79	2, 5, 13, 18, 22, 36, 37		.11	.07	-.007	.225	1.84	14.96	7	.04
	mid childhood	71	5, 10, 12, 14, 16, 21, 25, 27, 33		.18	.04	.011	.358	2.09	37.91	8	.000
Static Risk	adolescence	124	1, 3, 6, 7, 8, 9, 12, 14, 15, 19, 24, 26, 27, 30, 32, 35		.40	.000	.248	.547	5.22	116.21	15	.000
	early childhood	--	36		--	--	--	--	--	--	--	--
	mid childhood	--	16		--	--	--	--	--	--	--	--
Emotional Concerns	adolescence	9	3, 8, 24, 26, 32		.21	.25	-.151	.576	1.15	57.92	4	.000
	<b>Total</b>	12	3, 8, 16, 24, 26, 32, 36		.24	.11	-.057	.530	--	90.38	6	.000
	early childhood	--	36		--	--	--	--	--	--	--	--
Behavioural Concerns	mid childhood	14	10, 12, 21, 25, 27		.10	.57	-.236	.428	.57	24.43	4	.000
	adolescence	24	3, 6, 15, 19, 27, 35		.29	.15	-.107	.691	1.43	58.93	5	.000
	<b>Total</b>	42	3, 6, 10, 12, 15, 19, 21, 25, 27, 35, 36		.22	.04	.009	.430	2.04	86.28	10	.000
Social and Interpersonal Concerns	early childhood	46	2, 13, 22, 36		.20	.000	.095	.297	3.81	4.10	3	.28
	mid childhood	31	5, 12, 14, 16, 21, 27, 33		.31	.03	.033	.594	2.19	54.12	6	.000
	adolescence	31	1, 3, 8, 12, 14, 19, 26, 27, 30		.52	.008	.138	.901	2.67	183.89	8	.000
Developmental Concerns	<b>Total</b>	108	1, 2, 3, 5, 8, 12, 13, 14, 16, 19, 21, 22, 26, 27, 30, 33, 36		.39	.001	.164	.623	3.36	360.96	16	.000
	early childhood	7	36, 37		.02	.74	-.107	.151	.34	0	1	.99
	mid childhood	7	14, 16, 27		.15	.57	-.376	.683	.57	20.63	2	.000
Developmental Concerns	adolescence	--	3		--	--	--	--	--	--	--	--
	<b>Total</b>	18	3, 14, 16, 27, 36, 37		.08	.46	-.129	.283	.74	22.32	5	.000
	early childhood	11	29, 36		.10	.1	-.018	.215	1.65	.42	2	.52
Developmental Concerns	mid childhood	--	14		--	--	--	--	--	--	--	--
	adolescence	--	3		--	--	--	--	--	--	--	--
	<b>Total</b>	15	3, 14, 29, 36		-.09	.58	-.393	.220	-.55	29.96	3	.000

Predictors	Timepoint	K	Studies in Comparison	Effect Size	Significance of Effect Size	95% Confidence Interval		z	Heterogeneity				
						Lower limit	Upper limit		Q- value	df (Q)	p- value		
School, Learning Concerns	early childhood	--	18										
	mid childhood	15	5, 10, 16, 33	.19	.32	-.187	.573	.99	31.83	3	.000		
	adolescence	18	3, 6, 7, 12, 26	.37	.11	-.088	.835	1.59	167.47	4	.000		
<b>Total</b>		37	3, 5, 6, 7, 10, 12, 16, 18, 26, 33	.24	.11	-.052	.537	1.62	224.72	9	.000		
Prosocial Behaviour	early childhood	--	--	--	--	--	--	--	--	--	--	--	
	mid childhood	8	12, 14, 27	.24	.48	-.424	.908	.71	22.07	2	.000		
	adolescence	10	12, 14, 27	.17	.52	-.348	.692	.65	13.57	2	.001		
<b>Total</b>		18	12, 14, 27	.20	.5	-.385	.784	.67	17.08	2	.000		
Criminal History	early childhood	--	--	--	--	--	--	--	--	--	--	--	
	mid childhood	--	--	--	--	--	--	--	--	--	--	--	
	adolescence	15	3, 9, 19, 24	.38	.016	.069	.689	2.4	33.66	3	.000		
<b>Total</b>													

Effect sizes: .2 = small, .5 = medium, .8 = large

Looking more closely at the individual age groups examined across all predictors, the child factors measured during early childhood (age range = birth to 6 years) were not significant predictors of adult criminality ( $Z_c = 1.84, p > .05$ ). This suggests that at least for the studies examined in this review, when combining all predictors together measured in early childhood, the factors are not a reliable predictor of adult criminality outcomes. This does not mean, however, that individual risk factors measured in early childhood may not be significant predictors of adult criminality in adulthood. Only by examining each risk factor individually can one determine the individual contributions of each child factor more specifically.

The *ES* for all child factors measured during mid-childhood (age range = ages 7-11 years) predicting adult criminality was .18 ( $CI = .01-.36$ ), which was significant ( $Z_c = 2.09, p < .05$ ). This suggests a small *ES*, indicating that child factors measured in mid-childhood have a small effect in predicting adult criminality outcomes.

In contrast, the *ES* for child factors measured during adolescence (age range = 12 years and older) was .40 ( $CI = .25-.55$ ), which was significant ( $Z_c = 5.22, p < .001$ ). An *ES* of this magnitude is noteworthy, suggesting that overall, the child factors measured during adolescence are a strong and reliable predictor of adult criminality.

### **Analyses by Child Predictor**

The overall analyses examining all child risk factors are important and show that regardless of the type of predictor examined (e.g., behavioural or emotional concerns), on average, these factors modestly predict adult criminality. However, rather than lumping all factors into one category, it is more meaningful to examine individual child factors that play an important role in predicting adult correctional outcomes. This allows more appropriate conclusions to be reached regarding services and interventions that influence the likelihood of antisocial outcomes.

#### ***Static risk***

As shown in Table 2, child static risk predictors include variables such as race, gender, and the age at which the child began engaging in crime and drug use. Regardless of the age groups at which the static risk predictors were measured (i.e., early or mid-childhood or adolescence), the overall *ES* was not significant ( $Z_c = .53, p > .1$ ). This suggests that for the studies reviewed here, static risk factors related to youth are not a reliable predictor of adult correctional outcomes. Although early initiation of violent and criminal behaviour has been associated with more serious and chronic violent behaviour (e.g., Farrington, 1995), only 2 studies (Benda et. al., 2001; Eklund & Klintebery, 2003) examining this relationship were included in this review. Moreover, the age of onset in regards to the nature of offending has been studied the most extensively in the area of risk prediction and there is substantial evidence to suggest that those most at risk for adult violent behaviour are those with early age onset antisocial Moffitt behaviour. Thus, it is premature to suggest that these factors are not reliable predictors of adult criminality based on only 2 studies and the previous available evidence.

#### ***Emotional concerns***

There was a wide range of predictors related to emotional concerns measured across the different studies in this review (see Table 2). Regardless of the age group at which the emotional concern predictors were measured, the overall *ES* was .22 ( $CI = .009-.43$ ), which was significant ( $Z_c = 2.04, p < .05$ ). This suggests that on average, emotional concerns measured from mid-childhood to adolescence have a modest effect in predicting adult criminality. Despite the few published studies reporting a relationship between emotional concerns and criminality, some data showed modest links between these 2 variables and indeed, this review tends to support that link. More importantly, it might be important to consider the type of internalizing symptom that is measured when examining the relationship between emotional concerns and criminality. The current review included internalizing symptoms such as withdrawal and anxiety, chemical/substance

use, distress and depression. Many studies examining the relationship between internalizing disorders and criminality examine such variables as self-esteem, depression or psychoticism, rather than looking at the full spectrum of emotional concerns expressed throughout childhood.

The *ES* values were not significant, however, for either the adolescent ( $Z_c = 1.43, p > .1$ ) or mid-childhood group ( $Z_c = .57, p > .1$ ) alone. This may be accounted for by the smaller numbers of studies in each age group. Only one study met the criteria for emotional concern predictors measured in early childhood.

### **Behavioural concerns**

Table 2 lists the behavioural predictors used to predict adult criminality across the 3 age groups. Regardless of the age group at which the behavioural concern predictors were measured, the overall *ES* was .39 ( $CI = .16-.62$ ), which was significant ( $Z_c = 3.36, p < .01$ ). This suggests that, on average, behavioural concerns have value as a reliable predictor of adult criminality. Indeed, this review confirms much of the established literature regarding the importance of behavioural factors as a predictor of criminality.

The *ES* values across the 3 age groups were similarly significant. That is, the *ES* for behavioural concerns (e.g., lack of control, antisocial behaviour) measured in early childhood was .20 ( $CI = .1-.3$ ), which was significant ( $Z_c = 3.81, p < .001$ ). This suggests that the behavioural concerns measured during early childhood in this review are a satisfactory predictor of adult criminality. Similarly, when examining the behavioural concerns measured in mid-childhood (e.g., hyperactivity, aggression), the *ES* was .31 ( $CI = .03-.59$ ), which was significant ( $Z_c = 2.19, p < .04$ ), again suggesting that behavioural concerns measured in mid-childhood are a good predictor of adult criminality outcomes. Finally, the *ES* for behavioural concerns measured in adolescence (e.g., conduct disorder) was .52 ( $CI = .14-.90$ ), which was significant ( $Z_c = 2.67, p < .01$ ). Overall, these findings suggest that behavioural concerns measured across all ages are good predictors of adult criminality, with the strength of this prediction increasing as the age at which the predictors were measured increases. Again, these findings confirm much of the established literature supporting the link between behavioural concerns and criminality.

### **Social and interpersonal concerns**

Regardless of the age groups at which the social and interpersonal concern predictors were measured (i.e., early or mid-childhood or adolescence), the overall *ES* was not significant ( $Z_c = .74, p > .1$ ). This suggests that for the studies reviewed here, social and interpersonal concerns related to the youth are not reliable predictors of adult criminality. Given the important role that peers play in antisocial behaviour or the established link between gang membership and crime, it is premature at this point to suggest that factors such as peer deviancy, gang membership or social maladjustment are not predictors of adult criminality. Moreover, some researchers have found that having delinquent peers by age 10 predicted later convictions for violence (e.g., Farrington, 1989). The findings in this report are more likely the result of the small number of studies included in the analysis ( $n = 6$ ). Secondly, variables such as “skills for interactions” ( $ES = -.07$ ) and “peer-nominated popularity” ( $ES = -.24$ ) may not be the most appropriate measurement of social and interpersonal concerns, and with so few studies examining the relationship between social and interpersonal concerns and adult criminality, negative *ES* values such as these can considerably reduce the value of the overall *ES*.

### **Developmental concerns**

As can be seen in Table 3, only 4 studies measured developmental factors (e.g., speech and motor development) as predictors of adult criminality. Regardless of the age at which the developmental concerns were measured, the overall *ES* was not significant ( $Z_c = -.55, p > .1$ ). This suggests that for the studies reviewed here, developmental concerns related to youth are not a reliable predictor of adult correctional outcomes. This finding is not entirely consistent with the literature. For example, in a Danish study with 423 men born between 1959 and 1961, which was followed up to ages 17 to 19 years, Raine and

colleagues (1996) identified a group of males with criminality that was characterized by neurological problems in the first week of life, including slow motor development at one year of age. Thus, the results of this analysis are probably more reflective of the few studies that measured developmental factors as predictors of criminality (and made the inclusion criteria of this study) rather than the absence of a relationship between developmental concerns and adult crime.

### ***School/Learning concerns***

Regardless of the age groups at which the school/learning concerns were measured, the overall *ES* was not significant ( $Z_c = 1.62, p > .1$ ). This finding was not expected, given that various aspects of school-related experiences, such as truancy, low academic achievement, academic aspirations and type of school have been previously shown to contribute to violent and criminal behaviour. In the current analysis, however, some studies [i.e., Christoffersen et al. (2003), Farrington (2000), and Hamalainen et al. (1995)] did in fact show a strong relationship between school concerns and adult criminality. For example, Christoffersen and colleagues measured factors such as the youth not completing school and unemployment and the *ES* for this study was .79 ( $p < .001$ ), which suggests an extremely strong relationship to adult crime. Farrington examined low scholastic attainment and similarly the *ES* for this study was high ( $ES = .66, p < .001$ ). In contrast, studies measuring predictors such as IQ and cognitive abilities produced negative *ES* values, likely contributing to the overall non-significant effect size.

### ***Prosocial behaviours***

Researchers study prosocial behaviours to better understand the protective factors that may mitigate the effects of risk exposure. In this analysis, prosocial behaviours were reversed coded to determine whether the absence of prosocial behaviours predicted adult criminality. Only 3 studies examined prosocial behaviours in mid-childhood and adolescence as predictors of adult criminality. Regardless of the age group at which prosocial behaviours were measured, the overall *ES* was not significant ( $Z_c = .67, p > .1$ ). Again, with so few studies included in the analysis, the power to detect a significant *ES*, if in fact there is one, is significantly decreased.

### ***Criminal history***

Criminal history factors such as prior incarcerations, type of crime, or number of victims were measured only in adolescence. The results of this analysis indicate that the *ES* for criminal history factors was .38 ( $CI = .07-.69$ ), which was significant ( $Z_c = 2.4, p < .02$ ). This suggests that criminal history factors, measured in adolescence, are strong and reliable predictors of crime. This is not surprising given that youth involvement in antisocial behaviour has long been associated with a greater risk of violence in adulthood.

## **Overall Effect of All Outcomes and Predictors for Family Factors**

The 19-study database of family factor studies yielded 188 *ES* measurements (see Table 5). The weighted overall *ES* across all mean *ES* measurements was calculated. Overall, the family predictors examined by this synthesis appear to modestly predict adult criminality. Regardless of the type of child factor examined, the overall *ES* was .25 ( $CI = .14-.35$ ) which is significant ( $Z_c = 4.7, p < .001$ ). This suggests that family factors in general have a modest effect in predicting adult criminality.



TABLE 5. FAMILY FACTORS COMPARISONS FOR ALL OUTCOMES X TIMEPOINT – RANDOM MODELS

Predictors	Timepoint	K	Studies in Comparison	Effect Size	Significance of Effect Size	95% Confidence Interval		z	Heterogeneity		
						Lower limit	Upper limit		Q-value	df (Q)	p-value
Overall (all risk factors combined)	All	188	3, 4, 6, 10, 11, 13, 16, 17, 19, 20, 23, 26, 28, 29, 31, 32, 33, 34, 36, 38	.25	.000	.143	.349	4.7	98.38	19	.000
	early childhood	84	4, 11, 13, 23, 28, 29, 36	.13	.000	.072	.180	4.59	3.18	6	.79
	mid childhood	38	10, 16, 17, 33, 34, 38	.30	.083	-.040	.648	1.73	52.52	5	.000
	adolescence	66	3, 6, 13, 19, 20, 26, 32, 31	.31	.001	.133	.484	3.45	34.65	7	.000
	early childhood	37	4, 11, 13, 28, 29, 36	.188	.188	.072	.165	5.0	1.92	5	.860
Static Risk	mid childhood	14	10, 16, 17, 33	.24	.41	-.324	.804	.83	48.57	3	.000
	adolescence	16	3, 6, 13, 19, 26	.11	.22	-.067	.296		21.50	4	.000
	<b>Total</b>	67	3, 4, 6, 10, 11, 13, 16, 17, 19, 26, 28, 29, 33, 36	.15	.005	.046	.262	2.79	79.40	13	.000
	early childhood	21	4, 29	.14	.10	-.026	.315	1.66	.57	1	.45
	mid childhood	--	--	--	--	--	--	--	--	--	--
Parent Mental Health	adolescence	15	3, 6, 20	.15	.19	-.071	.365	1.32	4.23	2	.12
	<b>Total</b>	36	3, 4, 6, 20, 29	.14	.02	.022	.264	2.32	4.8	4	.31
	early childhood	5	36	--	--	--	--	--	--	--	--
	mid childhood	8	16, 33, 34	.41	.000	.166	.658	3.29	3.30	2	.19
	adolescence	4	20, 32	.12	.34	-.131	.376	.95	.18	1	.68
Parent Management	<b>Total</b>	17	16, 20, 32, 33, 34, 36	.24	.01	.057	.419	2.58			
	early childhood	12	23, 29, 36	.16	.02	.023	.292	2.30	2.43	2	.30
	mid childhood	5	16, 33	.26	.41	-.352	.868	.83	11.26	1	.000
	adolescence	19	3, 6, 19, 20, 26, 31, 32	.67	.007	.185	.151	2.71	247.47	6	.000
	<b>Total</b>	36	3, 6, 16, 19, 20, 23, 26, 29, 31, 32, 33, 36	.48	.003	.165	.800	2.98	349.01	11	.000
Family Structure	early childhood	9	4, 28, 29, 36	.16	.000	.107	.216	5.79	10.72	3	.01
	mid childhood	11	16, 33, 38	.17	.13	-.052	.393	1.5	6.48	2	.04
	adolescence	15	3, 6, 20, 32	.38	.11	-.087	.840	1.59	41.59	3	.000
	<b>Total</b>	35	3, 4, 6, 16, 20, 28, 29, 32, 33, 36, 38	.23	.000	.078	.377	2.99	87.91	10	.000
	adolescence	19	3, 6, 19, 20, 26, 31, 32	.67	.007	.185	.151	2.71	247.47	6	.000

Effect sizes: .2=small, .5=medium, .8=large



The overall mean *ES* in the current analysis provides evidence that the family predictors reviewed in this report were, on average, modest predictors of adult criminality. The nature of the distributions, however, suggest some differential effects across studies ( $Q_t = 98.38$ ,  $df = 19$ ,  $p < .001$ ), although much less than the child factor studies. Again, this is not surprising given the varied methodologies reported across studies, the differences in the measurement of predictors, and the heterogeneous nature of the samples. Thus, any attempts to interpret the overall average *ES* may be misleading, and hence a closer examination of factors that may moderate the *ES* is warranted.

Looking more closely at the individual age groups examined across all predictors, the *ES* for family factors (see Table 1 for the list of family factors) measured during early childhood (age range = birth to 6 years) was .13 ( $CI = .07-.18$ ), which was significant ( $Z_c = 4.59$ ,  $p < .001$ ). An *ES* of .13, however, suggests that, at least for the studies reviewed in this report, family factors measured in early childhood are a weak predictor of adult criminality. On the other hand, the *ES* for family factors measured in adolescence (age range = 12 years and older) was .31 ( $CI = .13-.48$ ), which was significant ( $Z_c = 3.45$ ,  $p < .01$ ). This suggests that family factors measured in adolescence are a modest predictor of adult criminality. While the *ES* for family factors measured during mid-childhood was modestly high at .30 ( $CI = -.04-.65$ ), this effect was only approaching significance ( $Z_c = 1.73$ ,  $p = .08$ ).

## Analyses by Family Predictor

### **Static risk**

As shown in Table 1, family static risk predictors include variables such as SES, mother's age at birth of child, birth and delivery complications, and parental criminal history. Regardless of the age groups at which the static risk predictors were measured (i.e., early or mid-childhood or adolescence), the overall *ES* was .15, which was significant ( $CI = .05-.26$ ,  $Z_c = 2.79$ ,  $p < .01$ ). An *ES* of .15, however, is small and at least for the studies reviewed here, one must be cautious about the type of conclusions drawn from such an effect size in predicting adult criminality. Static risk factors such as parental criminality, however, have been shown to be significant predictors of criminal acts in some studies (e.g., Farrington, 1989), but this finding is not completely consistent across the literature (see Moffitt, 1987). The *ES* values for the 3 age groups (early and mid-childhood and adolescence) were not significant (all  $p$ 's  $> .1$ ).

### **Parental mental health**

Parental mental health factors such as depression, substance abuse, and psychiatric concerns were used as predictors of adult criminality. Regardless of the age groups at which the parental mental health predictors were measured, the overall *ES* was .14 ( $CI = .02-.022$ ), which was significant ( $Z_c = 2.32$ ,  $p < .05$ ). Similar to static risk predictors, however, an *ES* of .14 is small, and one must be cautious about the conclusions drawn from such a finding. Unlike static risk predictors, however, only 5 studies were included in this analysis. Some research has shown that a relationship does exist between parental alcoholism and mental illness and children's later violent behaviours. Thus, the nonsignificant findings here may reflect too few studies in the analysis. Further research is necessary to understand the relationship between parental mental illness and children's future violent behaviour. The *ES* values for the 2 age groups (early childhood and adolescence) were also not significant (all  $p$ 's  $> .1$ ).

### **Parental management**

Table 1 lists the parental management factors used as predictors of adult criminality. These factors ranged from authoritarian discipline strategies, to supervision and monitoring concerns, and parent-child relationship. Regardless of the age groups at which the parental management predictors were measured, the overall *ES* was .24 ( $CI = .06-.42$ ), which was significant ( $Z_c = 2.58$ ,  $p < .05$ ). This suggests that parental management concerns are a modest predictor of adult crime. This finding is consistent with much of the established literature examining family management practices such as failure to set clear expectations

for children’s behaviour, supervision concerns, and severe discipline techniques (e.g., Capaldi & Patterson, 1996). Although based on only 3 studies, the *ES* for mid-childhood was .41 (*CI* = .17- .66) which was significant ( $Z_c = 3.30, p < .001$ ). An *ES* of this magnitude suggests that parental management concerns, such as poor supervision (Shepard et al., 2002), authoritarian parenting, and inconsistent punishment and discipline techniques (Huesmann et al, 2002; Smith & Farrington, 2004), measured in mid-childhood are a strong predictor of adult crime. The *ES* for parental management predictors measured in adolescence was not significant ( $p > .1$ ), but this finding is based on only 2 studies. Only one study examined parental management factors in early childhood.

### **Family structure**

Examples of family structure variables are child welfare involvement, size of family, SES, and marital status. Regardless of the age groups at which the family structure predictors were measured, the overall *ES* was .48 (*CI* = .17-.80), which was significant ( $Z_c = 2.98, p < .01$ ). An *ES* of this magnitude is notable and suggests that family structure variables are important predictors of adult crime. What is more striking are the results of the family structure variables measured in adolescence (e.g., child welfare involvement, parental separation, marital status). The *ES* for these variables measured in adolescence was .67 (*CI* = .19-.15) which was significant ( $Z_c = 2.71, p < .01$ ). This is a large *ES*, suggesting that family structure variables measured in adolescence are a reliable and strong predictor of adult criminality. In contrast, the *ES* for family structure variables measured in mid-childhood were not significant ( $p > .1$ ). While the *ES* for family structure variables measured in early childhood was significant ( $Z_c = 2.30, p < .05$ ), this *ES* was rather small, .16 (*CI* = .02-.29).

### **Adverse family environment**

Table 1 lists the adverse family environment factors (e.g., family violence) that were used as predictors of adult crime. Regardless of the age groups at which the adverse family environment predictors were measured, the overall *ES* was .23 (*CI* = .08-.38), which was significant ( $Z_c = 2.99, p < .001$ ). This suggests that factors such as witnessing abuse, family violence, and child abuse are modest predictors of adult crime. One would have expected, however, that the *ES* for factors such as child maltreatment would be stronger given the established literature related to child abuse and adult crime (e.g., Smith & Thornberry, 1995). Still, given the highly heterogeneous nature of the studies examining adverse family environments, and the varied definitions of family violence, the smaller *ES* is not that surprising. Some studies defined adverse family environment as disharmony between parents (i.e., Huesmann et al., 2002) or family stress (Stevenson & Goodman, 2001), while other studies examined child abuse (sexual or physical; e.g., Widom & Ames, 1994).

### **Moderator Analyses: Community vs. Non-community Samples**

An important source of variation among the studies in this review was the sampling of participants. That is, some of the youths in the studies were from a community-based population, such as a birth cohort, which includes sampling youth at random from the population. On the other hand, other studies sampled youth from high-risk groups, such as young offenders or psychiatric populations (i.e., non-community sample). Table 6 lists the studies by this sample distinction. One would expect that, on average, effect sizes for child predictors for the non-community-based samples (i.e., high-risk groups) would be larger in predicting adult crime than for those studies examining community-based participants. The results presented below review the child factor predictors by sample, either community or non-community. Analyses were not conducted by specific age group because this would have resulted in too few studies to examine both by age group and sample.

TABLE 6. COMPARISONS FOR ALL OUTCOMES X SAMPLE: ALL EFFECTS REPORTED FOR RANDOM MODEL

Predictors	Sample	K	Studies in Comparison	Effect Size	Significance of Effect Size	95% Confidence Interval		z	Heterogeneity		
						Lower limit	Upper limit		Q-value	df (Q)	p-value
Overall	Non-community	103	1, 3, 5, 7, 8, 9, 19, 21, 24, 30, 32, 35	.34	.000	.161	.514	3.74	95.46	11	.000
	Community	171	2, 6, 10, 12, 13, 14, 15, 16, 18, 25, 26, 27, 29, 33, 36, 37	.25	.000	.112	.381	3.6	104.55	16	.000
Static Risk	Non-community	8	3, 8, 24, 32	.34	.04	.022	.651	2.09	18.61	3	.000
	Community	4	16, 26, 36	.11	.69	-.420	.639	.41	63.27	2	.000
Emotional Concerns	Non-community	23	3, 19, 21, 35	.15	.13	-.046	.348	1.50	7.46	3	.06
	Community	19	6, 10, 12, 15, 25, 27, 36	.26	.13	-.077	.586	1.51	78.82	6	.000
Behavioural Concerns	Non-community	25	1, 3, 5, 8, 19, 21, 30	.37	.02	.059	.677	2.34	179.35	7	.000
	Community	83	2, 12, 13, 14, 16, 22, 26, 27, 33, 36	.45	.009	.111	.788	2.6	237.70	9	.000
Social/ Interpersonal	Non-community	--	--	--	--	--	--	--	--	--	--
	Community	18	14, 16, 27, 36, 37	.07	.58	-.184	.331	.56	20.91	4	.000
Developmental Concerns	Non-community	--	3	--	--	--	--	--	--	--	--
	Community	16	14, 29, 36	-.143	.51	-.570	.284	-.66	28.88	2	.000
School/ Learning	Non-community	20	3, 5, 7	.20	.14	-.063	.452	1.48	13.16	2	.000
	Community	17	6, 10, 12, 16, 18, 26, 33	.27	.23	-.174	.710	1.19	209.62	6	.000
Prosocial Behaviour	Non-community	--	--	--	--	--	--	--	--	--	--
	Community	18	12, 14, 27	.20	.50	-.385	.784	.67	17.08	2	.000
Criminal History	Non-community	15	3, 9, 19, 24	.38	.016	.069	.689	2.4	33.66	3	.000
	Community	--	--	--	--	--	--	--	--	--	--

Effect sizes: .2=small, .5=medium, .8=large

## Overall Effect of All Outcomes and Predictors for Child Factors by Sample

The 29-study database of child factor studies yielded 274 *ES* measurements. The weighted overall *ES* across all mean *ES* measurements for community and non-community samples was calculated. Overall, the child predictors examined by this synthesis appear to modestly predict adult criminality. Regardless of the type of child factor examined, the overall *ES* for non-community samples was .34 (*CI* = .16-.51), which is significant ( $Z_c = 3.74, p < .001$ ). A slightly lower *ES*, .25 (*CI* = .11-.38) was obtained for community-based samples ( $Z_c = 3.6, p < .001$ ). As predicted, this suggests that child factors in general have a slightly higher effect in predicting adult criminality in non-community-based samples (i.e., higher risk) compared to community samples.

### **Static risk**

The analysis for static risk predictors found a significant *ES* for non-community-based samples, .34 (*CI* = .22-.65), which is significant ( $Z_c = 2.09, p < .05$ ), in contrast to community-based samples ( $Z_c = .41, p > .1$ ). This suggests that static risk factors, such as race, gender, and age at which the youth began drug or crime use are a modest predictor of adult crime in non-community-based samples.

### **Emotional concerns**

Regardless of the sample used to predict whether emotional concerns are related to adult crime, the *ES* for both community and non-community samples was not significant (all  $p$ 's  $> .1$ ). At least for the studies reviewed in this report, community versus non-community-based samples do not differ with respect to emotional concerns and adult crime.

### **Behavioural concerns**

Behavioural concerns, such as aggression, conduct disorder and hyperactivity were all used as predictors of adult crime. The results of this analysis suggest that behavioural concerns are a significant and strong predictor of adult crime in both community ( $ES = .45, CI = .11-.79, Z_c = 2.6, p < .01$ ) and non-community-based samples ( $ES = .37, CI = .06-.68, Z_c = 2.34, p < .03$ ).

### **Social and interpersonal concerns**

Of the 5 studies that examined social and interpersonal concerns as predictors of adult crime, all were based on community samples. Thus, analyses comparing community versus non-community samples were not possible. In examining community samples alone, the *ES* for this group was not significant ( $p > .1$ ).

### **Developmental concerns**

Similar to the social and interpersonal concerns, of the 4 studies that examined development concerns, 3 were based on community samples, and the remaining study (Benda, et al., 2001) used a non-community sample. Thus, a comparison between groups was not possible. The *ES* for the community based sample studies was also not significant ( $p > .1$ ).

### **School/Learning concerns**

Ten studies examined school/learning concerns as predictors of adult crime in community and non-community-based samples. Unexpectedly, the results of this analysis show that the *ES* values for both community and non-community-based samples were not significant (all  $p$ 's  $> .1$ ). While one would expect that school concerns in higher risk groups (i.e., non-community samples) would show some relationship to adult crime, only 3 studies in this review met the criteria for such a comparison. Thus, this finding may reflect too few studies in the analysis and it is premature at this point to suggest that school related concerns, such as cognitive ability and academic achievement in high-risk samples are not related to adult crime.

**Prosocial behaviour**

Of the 3 studies that examined prosocial behaviour, all were based on community samples, making comparisons between samples not possible. The *ES* for this group was nonsignificant ( $p > .1$ ).

**Criminal history**

All 4 studies that examined criminal history as predictors of adult crime were based on non-community samples. The results of this analysis are identical to the previous analysis on child factors and criminal history; the *ES* for this group was .38 ( $CI = .07-.69$ ), which is significant ( $Z_c = 2.4, p < .05$ ).

**Discussion**

This study used meta-analytic techniques to summarize factors that may lead to adult criminality. Across all child studies, the average effect size (*ES*) was .29. This effect represents a medium effect suggesting that, on average, the factors reviewed in this report are good predictors of adult crime. This is especially true when one considers that, in general, adult offending is a relatively low base-rate phenomenon. Evidence indicated that the strength of prediction increases as the age at which the factor is measured increases. That is, childhood risk factors measured during adolescence have an *ES* of .40 suggesting that factors measured during this age period are a strong and reliable predictor of adult criminality. This supports much of the established literature that reports that risk factors such as adolescent behavioural concerns and juvenile offending are strong predictors of future adult crime. In contrast, risk factors measured during mid-childhood had an *ES* of .18, indicating a much weaker relationship to adult crime.

Notwithstanding, this report outlines that some factors are better predictors than others. Furthermore, at least for some studies included in this review, some factors require further research to determine whether or not they are reliable predictors of adult criminality. While this report can comment on the strength of childhood risk factors in predicting adult offending, it is important to keep in mind that risk factors *do not* exist in isolation and are often compounded by the number and severity of other risk factors involved. Wherein this report describes a childhood or family risk factor as not being a significant or a reliable predictor of adult offending, it is important to note that there may be several reasons why this is the case, such as methodological differences in studies, measurement issues, or protective factors. More research should be done in these areas to better understand their role in predicting adult crime.

**Child Factors**

A consistent and noteworthy finding of the current synthesis is that behavioural factors, measured from early childhood to late adolescence are strong predictors of adult crime (see Table 7). In fact, behavioural concerns measured in adolescence were the best predictors ( $ES = .39$ ) examined in this report. Interestingly, the strength of prediction for behavioural factors increases as the age of the youth increases, although few studies examined behavioural concerns in early childhood. This finding supports much of the established literature that behavioural factors such as aggression, hyperactivity, and behavioural disorders are associated with higher incidences of violent crime in adulthood. This suggests that addressing early patterns of behavioural problems may be an important and promising strategy for the prevention of violence and serious adult crime.

Another important finding highlighted in this report that confirms the findings of previous studies is the role that juvenile offences play in predicting subsequent violent or serious offending in adulthood. While based on only a small number of studies ( $n = 4$ ), the findings of this synthesis support the contention that juvenile offences and prior incarcerations are strong predictors of future violence ( $ES = .38$ ). Lipsey and Derzon (1998) found that for youth between the ages of 12 and 14 years, a juvenile offence was the second most powerful predictor of future violence, with lack of social ties and involvement with antisocial peers as the strongest predictors of subsequent violence.

**TABLE 7. RESULTS SUMMARY OF CHILD PREDICTORS OF ADULT CRIME<sup>2</sup>**

Category	All Ages	Predictors at		
		birth-6 years	7-11 years	12-17 years
<b>All Risk Factors Combined</b>	.29	ns	.18	.40
<b>Static Risk</b>	ns	--	--	ns
<b>Emotional Concerns</b>	.22	--	ns	ns
<b>Behavioural Concerns</b>	.39	.20	.31	.52
<b>Social/Interpersonal Concerns</b>	ns	ns	ns	--
<b>Developmental Concerns</b>	ns	ns	--	--
<b>School/Learning</b>	ns	--	ns	ns
<b>Prosocial Behaviours</b>	ns	--	ns	ns
<b>Criminal History</b>	.38	--	--	.38

## Family Factors

Many researchers have investigated the role that family factors, such as parental criminality, parental management, child maltreatment, and family structure play in children’s violent behaviour. The results of the current synthesis point strongly towards several family factors that strongly predict the likelihood of future violent behaviour in children (see Table 8). While some of these factors are amenable to change, such as parental management and discipline, others such as family structure (e.g., size of family, marital status, and residence change) are not so easily amenable to change.

The strongest family predictor in the current meta-analysis was family structure measured during adolescence ( $ES = .67$ ). That is, factors such as marital status, separation, number of successive caregivers, as well as child welfare involvement, were strong predictors of adult crime. This finding suggests that disruptions to the parent-child relationship, in terms of separation, out-of-home care, and single parenthood predict later violent behaviour in children. It is important to keep in mind that this relationship may be explained by many other factors that may also predict later violence. For example, single parenthood is often associated with low social and economic support, 2 factors that have also been implicated in violent behaviour.

Another significant and noteworthy finding of the current synthesis is the role that parental management plays in the future violent behaviour of children. Poor family management practices, such as the nature of parenting, or the use of physical discipline, have been implicated as predictors of violent crime (Moffitt, Caspi, Harrington & Milne, 2002). This study tends to support this finding, especially when parental management is measured during mid-childhood. For the current meta-analysis, parental management measured during mid-childhood had an  $ES$  of .41. While based on only 3 studies, this finding demonstrates that the endorsement of punishment, the nature of parenting (authoritarian), and a lack of supervision

<sup>2</sup> ns = nonsignificant; the value indicates the  $ES$  between the predictor and adult crime outcome; higher values indicates a stronger relationship between the predictor and the outcome.



were all strong predictors of the child's future violent behaviour. Intervention programs that include a parenting component may be a good strategy for the prevention of future violent behaviour in children. This might include programs that focus on increasing parental capacity to deal with multiple stressors, and or skill-based parenting programs that focus on effective and developmentally appropriate discipline strategies.

A final important finding to discuss within family factors is the relationship between adverse family environment and future violent behaviour in children. Included within this analysis were studies that examined the role of child maltreatment and violent behaviour. While the *ES* in the current analysis was modest ( $ES = .23$ ) across all ages, the impact of child abuse and its role in predicting violent crimes in later life cannot be understated. Much empirical evidence has already established that some of the strongest family predictors are exposure to parental violence and children being victims of physical maltreatment (Wolfe, 1999). Intervention and prevention programs in the area of family violence have shown considerable positive outcomes for families, especially when a differential approach to families and service exists and when cultural contexts and flexibility are considered (Henegglar, 1989).

**TABLE 8. RESULTS SUMMARY OF FAMILY PREDICTORS OF ADULT CRIME<sup>3</sup>**

Category	All Ages	Predictors at		
		birth-6 years	7-11 years	12-17 years
<b>All Factors Combined</b>	.25	.13	ns	.31
<b>Static Risk</b>	.15	ns	ns	ns
<b>Parent Mental Health</b>	.14	ns	--	ns
<b>Parent Management</b>	.24	--	.41	ns
<b>Family Structure</b>	.48	.16	ns	.67
<b>Adverse Family Environment</b>	.23	.13	ns	ns

## Samples

One of the challenging aspects of the current meta-analysis, and other similar meta-analyses, is the wide range of methodological differences between studies, the population sampled, and the various ways in which the factors are measured. In reviewing the studies, it was necessary to examine more specifically whether the relationship between the child factors and later adult crime differed for youth who were high-risk (non-community based samples) compared to youth from the general population. One would expect that the effect sizes should be stronger and larger for higher-risk groups than they would be for youth surveyed in large scale population studies. Overall, the findings from this synthesis support the fact that regardless of the child factor examined, child factors were stronger predictors in high-risk samples compared to community-based samples (.34 vs. .25), although the *ES* for community-based samples is still noteworthy (see Table 9).

<sup>3</sup> ns = nonsignificant; the value indicates the *ES* between the predictor and adult crime outcome; higher values indicates a stronger relationship between the predictor and the outcome.

An interesting finding that was not evident in the previous analyses was the role of static risk factors for high-risk samples. Although based on a small number of studies ( $n = 4$ ), the *ES* for non-community-based samples was .34. Three of these studies examined the age of onset of crime and drug use, supporting what has already been established as important areas of prediction that youth with early onset of antisocial behaviour are at greatest risk for continued involvement of criminal behaviour in adulthood. Our meta-analysis for high-risk samples seems to support this finding, suggesting that early onset of antisocial behaviour may deprive children and youth from learning more adaptive and prosocial ways of behaving later in life.

Finally, behavioural concerns, as expected, were the strongest predictors for both community and non-community samples, again confirming the role that serious behavioural problems in childhood play in predicting adult criminality. While we cannot explain why the *ES* for community samples was slightly higher than it was for non-community samples, (.45 vs. .37), this should not take away from the important and significant role that behavioural concerns have on future criminal behaviour for all youth.

**TABLE 9. RESULTS SUMMARY OF SAMPLE PREDICTORS OF ADULT CRIME<sup>4</sup>**

Category	Community	Non-Community
All Risk Factors Combined	.25	.34
Static Risk	ns	.34
Emotional Concerns	ns	ns
Behavioural Concerns	.45	.37
Social/Interpersonal Concerns	ns	--
Developmental Concerns	ns	--
School/Learning	ns	ns
Prosocial Behaviours	ns	--
Criminal History	--	.38

<sup>4</sup> ns = nonsignificant; the value indicates the *ES* between the predictor and adult crime outcome; higher values indicates a stronger relationship between the predictor and the outcome for each group, respectively.



## Conclusion

On a final note, it goes without saying that identifying and addressing the predictors of adult criminal behaviour at different times in youth development is not only a sufficient, but a necessary, component for effective prevention and intervention programs. The strengths of meta-analyses in general are that findings are represented in a more differentiated and sophisticated manner than more conventional reviews, or in single studies alone. Moreover, meta-analyses are capable of finding relationships across studies that may be obscured in other approaches. What we can conclude from this broad review of meta-analytic evidence is that certain childhood, family and sample factors have significant impact in predicting adult crime. As our confidence in predicting which factors are more likely to lead to adult crime increases, the more likely we are to strengthen our prevention efforts and reduce crime overall. Although risk factors often overlap and influence each other in unique and varied ways, interventions that target multiple risk factors may be more effective in preventing criminal behaviour than any one program that examines a single factor alone. It is our hope that this review and the findings from other meta-analyses included in this report will more clearly outline the developmental trajectory and the predictors of risk for children and adolescents who continue to offend into their adult lives.



## CHAPTER FOUR: Prevention

### Intervention Methodology

Two sets of searches were performed. Both sets of searches were conducted using the databases PsychINFO, ERIC, Social Work Abstracts, Medline, Criminal Justice Abstracts, and Google Scholar. All searches were limited to publications dated between 2000 and 2005. In addition, the interventions had to target youth under 12, be community-based, utilize random assignment or employ a comparison group, have a follow-up beyond the immediate impact of the intervention, and provide specific content regarding the program.

The first set of searches was performed based on preliminary findings from the meta-analysis. Four searches on each of the databases were performed using the keywords *intervention* or *early intervention* in combination with the following keywords: *victims of domestic violence*, *exposure to domestic violence*, *academic achievement*, and *parent training program*. A total of 96 studies were located.

The second set of searches was performed following the final meta-analysis and based on the predictors discovered. Ten searches on each of the databases were performed using the keywords *early intervention* or *early prevention*, *program evaluation*, and *child* (unless stated otherwise) in combination with the following keywords: *depression*, *anxiety*, *substance abuse*, *aggression*, *hyperactivity*, *impulsivity*, *conduct problems*, *school discipline problems*, *(maternal) depression*, and *(parental, or mother, or father) substance abuse*. A total of 32 studies were located.

From the 128 articles initially selected as matching the criteria 60 were rejected because they did not strictly fit the criteria leaving 68 studies reviewed by the investigators. These prevention program initiatives are discussed as they relate to domestic violence, family-based programs, parenting, behavioural disorders of children and emotional disorders. Each section also provides summaries of relevant research in the area.

### Prevention Planning Related to Domestic Violence Programs

Domestic violence is viewed as an important area for prevention programs not only because of the efficacy for child and family outcomes, but also because of the extent of domestic violence in Canada. Using the National Longitudinal Study of Children and Youth (NLSCY), researchers demonstrated that in 1998/99 in Canada, 378,000 children ages 6 to 11 witnessed violence in the home, representing 17% of the total population of this age group (Hotton, 2003).

Research has consistently demonstrated a link between exposure to violence and a number of negative outcomes for children, including poor academic performance and lower scores on intelligence tests, high levels of aggression, and both more violent behaviour and higher levels of anxiety and depression (Fantuzzo & Mohr, 1999; Hotton, 2003; Dauvergne & Johnson, 2001, respectively). While these negative effects are seen in childhood, the current study detected a moderate effect size for the influence of adverse family environments, including exposure to family violence, on adolescents in relation to their risk for criminal offending as an adult.

Intervention and prevention programs for domestic violence that show both significant results and great promise stress the importance of developing and sustaining healthy families, the involvement of communities and professionals, and the provision of programs and services that are flexible. Programs that approach prevention from multiple perspectives, such as the courts and the family, can increase communication and result in better service and better outcomes for families (Berkman, Casey, Berkowitz & Marans, 2004). Flexibility is a key component in successful programs for children living in violent families, and research suggests that adapting programs to fit cultural settings is important (Graham-Bermann & Halabu, 2004).

Programs that focus on increasing parenting capacity through means such as counselling, education and advocacy have the potential to keep families together and in so doing can reduce the negative outcomes associated with child abuse and maltreatment. Maltreated children showed less academic engagement, more social skills deficits, and lower ego resiliency than nonmaltreated comparison children (Shonk & Cicchetti, 2001).

Strategies to prevent domestic violence require us to consider violence from the perspective of the individual, family, community, and resource viewpoints, and those that show the most promise work from a strengths, not deficits, model. By working from a strengths model, we develop and sustain the capacity of children and their families to be resilient to challenges, to make effective decisions, and to experience success.

### Summaries of Relevant Research

**Abel, E. M. (2000). Psychosocial treatments for battered women: A review of empirical research. *Research on Social Work Practice, 10, 55-77.***

Abel (2000) reviewed the empirical research on the effectiveness of a variety of services for abused women. Different interventions methods were compared. These included shelter based services, outreach counselling and support groups, brief counselling and follow-up treatment services.

Shelter Based Group Intervention is a 2-week treatment program that takes place within a battered women's shelter. Treatment consists of 5 modules each addressing a different topic. These include cognitive restructuring therapy, assertive communication, problem solving, body awareness and vocational counseling. Groups meet 3 nights per week, 2 hours per night. Counseling is provided by 2 female students who are currently studying at the graduate level of counseling psychology. This intervention may be affected by variables such as race, ethnicity and language proficiency.

Shelter Based Advocacy Services are also intervention programs conducted in a shelter setting. The intervention consists of 5 phases: assessment; initiation of intervention; monitoring; secondary advocacy; and, termination. This intervention takes place over a span of 10 weeks and has demonstrated a reduction in the frequency and intensity of new violence occurring.

Outreach Counselling and Support Groups encourage the expression and exploration of feelings among participants. For example, in one type of support group, discussions take place regarding several applicable topics, such as coping, self-defense strategies, and self-blame. Groups are led by a facilitator who is studying at the graduate or undergraduate level. The effectiveness of this type of support group still needs further examination. Another type of support group focuses on expressive exercises. Ten sessions include the following components: Session 1 is a general orientation; Session 2 through 5 include 1 hour of a psycho-educational component followed by 1 hour of a small group activity and support group component; and, the last 4 sessions consist of 2-hour group sessions focusing on community action and participant emotion. Volunteer group leaders have mental health experience and undergo 18 hours of training before the intervention process begins. Participants who have completed this program (women between the ages of 21 and 50) have indicated that they feel more positive after completion of this intervention. The final type of support group has several focused goals in an effort to decrease violence: educating participants about male-female socialization; building self-esteem; and, helping group members to develop concrete plans. Group sessions are 2-3 hours in length and continue for 10-12 weeks. Group leaders are all female with backgrounds in social work or related fields. Participation in this support group correlates with improvements in self-esteem and an overall reduction in partners' violent and controlling behaviours.

Brief Counselling includes grief counselling and feminist therapy. Both forms of counselling include initial crisis intervention services. Both are effective in improving self-esteem and self-efficacy.

Follow-up treatment programs function to provide ongoing support to former shelter residents who live independently from their assaultive partners. Social workers with a bachelor's degree conduct home visits for 1-2 hours per week. Face to face conversations demonstrate significant improvement in self-esteem.

**Arón, A. M., & Lorion, R. P. (2003). A case report of a community-based response to domestic violence in Chile. *Journal of Community Psychology, 31*, 561-579.**

Professional staff from the outpatient psychological clinic of the Psychology Department of the Catholic University of Chile used a psychosocial wellness model to focus on developing a community-based approach to increasing awareness and understanding of abuse as well as available community resources. A second goal was to strengthen the collaboration between different community groups in order to provide support for groups and institutions that work directly with victims of abuse. In the first stage, community resources were identified, such as people with natural helping skills and organizations that provide emotional and crisis support to victims of abuse. In the second stage, hospital staff, and other community groups were given information about domestic violence and formal training in crisis intervention. In the hospital setting, psychologists provided psychotherapy to battered women, holding informal discussions about specific cases with the medical staff. In the final stage, meetings brought together different groups and organizations in the community with the purpose of strengthening social networks and facilitating referral links. Evidence of continued community interest and participation was demonstrated by the provision of a course on domestic violence by the medical and nursing staff at the hospital. This course was conducted as a part of the continuing education program in the emergency room. The professional staff from the program continues to be a resource for the community.

**Carlson, B. E. (2000). Children exposed to intimate partner violence. *Trauma, Violence, & Abuse, 1*, 321-342.**

Carlson (2000) examined the literature regarding: the effects of domestic violence on children; moderating and mediating factors underlying the relationship between exposure to domestic violence and children's responses; and, intervention strategies. In relation to the effects of domestic violence, various child outcomes were found, such as internalizing and externalizing behaviours, social and emotional problems, interpersonal deficits, and cognitive difficulties. However, the fact that some studies found that a substantial number of children did not exhibit these outcomes suggest the existence of moderators and mediators in the relationship. Moderators include factors related to the dispute itself (i.e., frequency, intensity, duration, nature, and whether the dispute was resolved), gender, age, exposure to physical abuse, and protective factors such as social support, intelligence, and adaptability. Mediators include coping skills (e.g., problem or emotion-focused), Post Traumatic Stress Disorder, and disruptions in parenting (e.g., lack of discipline, or severe physical punishment). The principal focus for intervention should be children's safety. Other goals should include enhancing coping and problem-solving skills, encouraging children to express their emotions, exploring children's thoughts surrounding the domestic dispute, and discussing issues of responsibility with regards to the discord.

**Cohen, J.A., Berliner, L., & Mannarino, A.P. (2003). Psychosocial and pharmacological interventions for child crime victims. *Journal of Traumatic Stress, 16*, 175-186.**

Cohen, Berliner and Mannarino (2003) reviewed treatment studies for children who were victims of abuse. A number of randomized trials summarized by Cohen et al. showed that trauma-focused cognitive behavioural therapy was effective in reducing Post Traumatic Stress Disorder symptoms, internalizing and externalizing symptoms and depressive symptoms among children who were abused. The mechanism through which trauma-focused cognitive behavioural therapy works remains unclear.

A second study described the efficacy of family-based therapies in treating physically abused children. Researchers reported a decrease in externalizing behaviours in children, child violent behaviours towards parents, parental distress, family conflicts, and future risk of abuse. Therapeutic preschool for abused children was found to be promising in lowering the level of violent delinquent behaviours, clinical levels of aggressions and internalizing behaviours.

**Graham-Bermann, S. A., & Hughes, H. M. (2003). Interventions for children exposed to interparental violence (IPV): Assessment of needs and research principles. *Clinical Child and Family Psychology Review*, 6, 189-204.**

Graham-Bermann and Hughes (2003) reviewed literature regarding interventions for children who were exposed to interparental violence (IPV), and found 3 exemplary studies. All 3 studies were based on theory, used random assignment of children to different types of treatment groups, utilized appropriate comparison groups, and assessed treatment outcome at pre and post. Importantly, the studies included long-term follow-up sessions, large sample sizes, and children from different cultural groups.

The first study evaluated the Advocacy and the Learning Club Program, which was a 16-week program for abused women and their children. Children were mentored by an undergraduate student while their mothers were given help with issues pertaining to employment, education and obtaining relevant community services. Transportation was provided for the children. Children exhibited enhanced self-competence. These children were also less likely to be abused by a parent. The mothers reported high levels of satisfaction with the program.

The second study examined Project SUPPORT, a program that targeted children ages 4 to 9 who were exposed to IPV and had aggressive behaviour problems. Adult mentors were assigned to the children while their mothers had weekly therapy sessions to receive help with parenting skills. Children who received the intervention exhibited a reduction in aggression problems while their mothers' child management skills improved.

The third study evaluated The Kids Club, which focused on child resiliency and trauma recovery, targeting children aged 5 to 13. This 10-week program helped children identify their emotions surrounding violence exposure, and attempted to change children's social cognitions and attitudes while facilitating the development of social and coping skills. Children who experienced the intervention reported lower rates of PTSD. Children who accompanied their mothers to the treatment revealed the greatest improvements in general.

Recommendations for future intervention studies included accounting for individual and cultural differences, age, and gender while focusing increasingly on strengthening protective factors in children and their mothers. Recommendations for methodology included the use of more sensitive instruments and measures, matching populations with the interventions, accounting for the intensity and duration of the program, broadening the program to other settings.

**Osofsky, J. D., Rovaris, M., Hammer, J. H., Dickson, A., Freeman, N. & Aucoin, K. (2004). Working with police to help children exposed to violence. *Journal of Community Psychology*, 32, 593-606.**

The Violence Intervention Program for Children and Families (VIP) (Osofsky et al., 2004) is a program based on a collaborative effort between the New Orleans Police Department (NOPD) and the Department of Psychiatry at Louisiana State University Health Sciences Center. The program is focused on educating police officers on the effects of violence on children. Three 15-20 minute training sessions are administered during daily roll call, a time when all officers must check in before assuming their duties. Police officers are informed of the VIP 24-hour hotline and respective contact information for the services provided. This hotline can be used by police and/or families for consultation and referral following a traumatic event. A mental health professional is always available. Police are also educated on the rationale for early

identification and intervention with traumatized children and what they can do as police officers approaching children at a traumatic scene. They are also educated on the influence that exposure to trauma has on professionals, including police officers. They are provided with hotline cards that have phone numbers and contact names to give to families at the scene of a traumatic event. This alliance between police and health care workers has increased the utility of the VIP program to effectively provide services to traumatized children and families. In certain instances, police officers and the VIP team have collaboratively provided support and assistance in calming family members after trauma. Police officers have increased their sensitivity and level of response regarding children and family members exposed to violence. Although training modules may have to be altered as officers move to different districts, flexible VIP training staff make this a possibility.

**Reynolds, A. J., & Robertson, D. L. (2003). School-based early intervention and later child maltreatment in the Chicago Longitudinal Study, *Child Development, 74, 13-26.***

The Chicago Child Parent Center Program (Reynolds & Robertson, 2003) has been administered by the Chicago public schools since 1967 and is funded through the Elementary and Secondary Education Act of 1965. It is a school-based childhood intervention applied to children from ages 3 to 9 years. It consists of 2 elements – the parent component and the child curriculum component. The child curriculum component enhances basic skills in language and mathematics through a diverse learning experience. The child to staff ratio is 17:2 in preschool and 25:2 in kindergarten, not including parent volunteers. The parent component of this program includes a number of services. For example, parents are encouraged to participate in parent room activities that take place in parent resource rooms. Parenting skills, vocational skills, how to reinforce learning at home and social supports are addressed. Parents are required to be involved in the parent resource room at least one half day per week and must also serve on the School Advisory Council. Parents may choose to attend GED classes at the centers. Health and nutrition services as well as other outreach services are also provided. The entirety of this component is made to be flexible to parents' schedules and focuses on parents understanding themselves, understanding the importance of reinforcing their child learning, feeling increased comfort with being a volunteer, and learning more about child development. To be eligible for this program, families must reside in a high poverty school area, demonstrate an educational need due to poverty, and sign a parent agreement. Preschool enrolment in this intervention program is associated with significantly lower rates of child abuse and neglect.

**Saxe, G. N., Ellis, H., Fogler, J., Hansen, S. & Sorkin, B. (2005). Comprehensive care for traumatized children. *Psychiatric Annals, 35, 443- 448.***

Trauma System Therapy (TST) is based on the interconnection between a child's trauma- related symptoms and the enabling factors in the child's social environment. This program focuses on 2 elements: the child who is unable to regulate emotional states; and, the social environment that does not help the child contain this dysregulation. The goal is to create a regulatory balance or “goodness of fit” between the child and the social environment. Children are assessed along 2 dimensions: the level of emotional dysregulation; and, the level of social environmental instability. Treatment plans are uniquely developed and each child is placed into 1 of 3 categories (stable, distressed, or threatening). Accordingly, each child is placed into 1 of 5 phases of intervention (Surviving, Stabilizing, Enduring, Understanding, or Transcending). Each component corresponds to a different theme of traumatic stress therapy with different services. Each of the treatment modules includes home and community-based care, emotional regulation skills, and training services advocacy. Significant changes were seen after 3 months of TST in children's emotional regulation problems. Primary clinicians were responsible for assessment based on trials conducted in Boston MA, and Ulster County, New York.



**Sullivan, C. M., Bybee, D. I. & Allen, N. E. (2002). Findings from a community based program for battered women and their children. *Journal of Interpersonal Violence*, 17, 915-936.**

Sullivan et al. (2002) proposed a community-based support and advocacy intervention. Trained paraprofessionals focused on 3 components in working with battered women and their children. For 16 weeks counsellors helped mothers access community resources. Secondly, they worked with children and encouraged their participation in community activities. Finally, within the 16-week program, children attended a 10-week support and education group designed and implemented by the research team. These paraprofessionals worked on average approximately 9 hours with, or on behalf of, the families. The intervention process was categorized into 5 phases. In the assessment phase, the research team gathered information regarding the specific needs of each woman and child. The implementation phase involved collaborating to generate and access community resources. The advocacy phase encouraged recreational activities. The secondary implementation phase was utilized if the community resources being offered were not satisfying the needs of the child and/or mother, and then alternative strategies were explored. The final phase involved termination, in which the paraprofessionals focused on transferring skills and knowledge that they had learned to the mother and child. Each process was uniquely catered to the specific mother and child. The support and education group was called The Learning Club or TLC, and was facilitated by 5 group leaders. These group leaders all had extensive experience working with children. Paraprofessionals were highly trained female undergraduates. They underwent an extensive training period and continued to receive weekly supervision from instructors and guidance from classmates throughout the intervention process. To be eligible for the program, women with past experiences of domestic violence had to have at least one child between the ages of 7 and 11 years. The intervention showed increased self-esteem and reduced depression in the mothers. Children exhibited increased self-competence after the intervention was complete.

**Sullivan, M., Egan, M., & Gooch, M. (2004). Conjoint interventions for adult victims and children of domestic violence: A program evaluation. *Research on Social Work Practice*, 14, 163-170.**

Sullivan, Egan and Gooch (2004) designed a 9-week group intervention program based on cognitive behavioural and systemic approaches focusing concurrently on abused mothers and their children. For abused mothers, the group intervention focused on improving parenting skills (e.g., how to relate to their children's experiences of family violence), developing a safety plan (e.g., self-advocacy and empowerment), and developing social support with the group members. For the children, the program focused on safety planning, trauma resolution, coping and problem-solving skills, and resolving issues related to self-blame. Each group session concluded by having mothers and their children communicate about their experiences in the group sessions and violence at home. Children who scored above the clinical cutoff level on behavioural measurements demonstrated the greatest improvements, although they still scored above the cutoff point following intervention. There were significant decreases in anxious and depressive behaviours, and internalizing and externalizing behaviours, as measured by the Child Behavior Checklist List. The children also showed significant decreases in trauma symptoms, anger, self-blame, distractibility or hyperactivity, and significant increases in adaptability, mood, and reinforcing parents, as measured by the Trauma Symptom Checklist for Children, CPIC, and Parenting Stress Inventory. Measures on the PSI also showed that mothers had significantly lower levels of stress, isolation, and health problems after the group intervention. Suggestions for future replications of the program included extending and intensifying the group intervention for children above the clinical cutoff level, and including a measure of the mothers' parenting skills.

**Whipple, E. E. (1999). Reaching families with preschoolers at risk of physical child abuse: What works? *Families in Society*, 80, 148-160.**

The Family Growth Center (FGC) is an intervention center that aims to meet the needs of families at risk for maltreating. The program is administered by the Child Abuse Prevention Services (CAPS) and focuses on providing a flexible format in which families determine their own level of involvement. It consists of 4 main components.

The first component is a support and education group called Helping Ourselves Parent Effectively (HOPE). This group meets on a weekly basis for 2 hours. Sessions address positive parenting techniques, increasing knowledge of child development and stress management skills. It uses an “open door policy” in which parents do not need to pre-register and it is facilitated by a family service coordinator and parent volunteers.

The second component is dedicated to stress management. Six sessions for two and a half hours per week are offered to parents to teach positive coping strategies using a variety of formats – videos, discussions, handouts, and guest speakers from the community. Small group exercises are facilitated by Community Health and FGC members.

The third component is the Parent Nurturing Program (PNP). This program caters to parents of children aged 1 to 5 years. Twelve sessions for 2 hours per week focus on teaching cognitive affective and behavioral skills with the goal of improving parent-child interactions. Parents are educated on nonviolent conflict resolution.

The fourth component is called Early Childhood Development (ECD). This group has two and a half hour sessions each week for 30 weeks. The program specifically targets parents with a four-year-old child at risk for school failure. ECD provides both a parent education component and a mandatory child component with transportation if needed. The focus of this intervention program is on the transition to kindergarten. Specifically, enrolment, immunization reviews, educational materials, and a field trip to the kindergarten class are conducted.

Both PNP and ECD are facilitated by social workers, paraprofessionals and child care specialists. Activity manuals are distributed to all parents. This parent handbook describes behavior management techniques. Parents also receive a series of 10 videotapes, a nurturing quiz and family logs with brief weekly homework assignments.

Depression and stress are significantly reduced among participants who have a high level of involvement with the center. The success of this intervention program implies the effectiveness of both parent and child components based on an 8-month average length of involvement with meetings 4 times per week.

## **Family-Focused Prevention**

Family-focused prevention programs view risk within a systemic context. That is, childhood disorders are seen as the result of how children interact within their social worlds, namely families, peers and schools. Such programs operate within a social learning theoretical framework, with programs focusing on a range of interventions from improving parenting strategies to intervening to improve marital communication.



## Summaries of Relevant Research

**Cann, W., Rogers, H., & Matthews, J. (2003). Family Intervention Services program evaluation: A brief report on initial outcomes for families. *Australian e-Journal for the Advancement of Mental Health*, 2, 1-8.**

Cann, Rogers and Matthews (2003) evaluated the Family Intervention Service (FIS) Metropolitan Project, which is an extension of the Positive Parenting Program (Triple P). Triple P is based on a social learning approach that focuses on the social development of children and the associated risk factors related to the development of behavioural problems. The aims of the FIS are to help parents considered high-risk (i.e., they have children with behavioural problems) to develop skills that enhance the development, safety, health, and well-being of their children, as well as to promote independence. Parents learn to set their own goals, choose adaptive strategies for their families, develop problem-solving skills, and monitor their own progress through verbal instructions, viewing videotapes and live models, participating in group exercises and doing homework. There are 8 weekly sessions, which include 3 follow-up sessions. Outcomes from intervention include significant decreases in disruptive child behaviours, maladaptive parenting practices, level of stress, anxiety, and depression in parents, and conflicts between parents. These outcomes are also associated with significant increases in parental confidence and self-efficacy. Furthermore, in this study, the percentage of children who had behavioural problems in the treated group decreased from 45% to 12%. It was recommended that future studies perform a qualitative study to determine the extent to which the results found in this study were attributed to the program itself.

**DeGarmo, D. S., & Forgatch, M. S. (2005). Early development of delinquency within divorced families: Evaluating a randomized preventive intervention trial. *Developmental Science*, 8, 229-239.**

The Social Interaction Learning Model of Parenting and Delinquency (SIL) is based on an awareness of the link between marital transitions and problem behaviors in children. Participants are mothers who have been separated from their partners within the past 3 to 24 months. They must reside with a biological son who is currently in grades 1-3 in order to be eligible for the program. These families receive a multiple method intervention consisting of 14 parent group meetings held weekly at the Oregon Social Learning Center. The intervention is based on 5 theoretical parent practices and addresses specific issues relevant to divorcing women. Mothers are taught strategies for decreasing coercive exchanges with their children by responding early and appropriately to child behavior with non-corporal discipline. There is a focus on positive reinforcement. The topics are all presented in a step-by-step approach. Topics are introduced one by one and then revisited in proceeding sessions. Discussion in these sessions is encouraged. This intervention program is fully detailed in the manual *Parenting through Change* (Forgatch, 1994); the manual contains information for group leaders and material for mothers. The program also includes a 30-minute videotape (Forgatch & Marquez, 1993) that shows 3 families using effective parenting practices. This intervention produces benefits to delinquency.

**Farrington, D., & Welsh, B. C. (1999). Delinquency prevention using family-based interventions. *Children and Society*, 13, 287-303.**

The following is an evaluation of 24 different family-based interventions.

**Home Visiting Programs:** Home visits are conducted either during pregnancy or both during pregnancy and the first 2 years of the baby's life. The duration of each home visit is 1 hour and 15 minutes and they are conducted every 2 weeks. Nurses give advice about pre-natal and post-natal care of the child, and mothers are educated about proper nutrition and the avoidance of smoking and drinking during pregnancy. A number of interventions of this type demonstrate a decrease in child abuse and neglect during the first 2 years of the child's life. Furthermore, there is a reduced rate of delinquency exhibited by the children.

**Day Care Programs:** The intent of this intervention is to help mothers develop an affectionate relationship with their child and to foster cognitive skills in the child. Mothers receive home visits for 1 year and then attend a child development centre with their child during the following year. This program focuses on child development and parenting skills. One example of a day care program is the Family Development Research Program. This program gives pregnant women help on a weekly basis with child rearing. In addition, their children receive free full time day care designed to foster intellectual abilities until the age of five. Another day care program, The Infant Health and Development Program, targets low birth weight infants. The families of these children receive 3 home visits per month up to age three. Infants receive a free day care program in their second and third years, while parents have to attend parent group meetings. Intensive day care programs can reduce childhood antisocial behavior and delinquency.

**Preschool Programs:** The Perry Preschool Project focuses on disadvantaged African American children in Michigan. Weekly home visits are supplemented by a daily preschool program for children from ages 3 to 4 years. The program aims to provide intellectual stimulation and increase later school achievement. The Montréal Longitudinal Experimental Study is another example of a preschool program. It focuses on developing oral and written expression, social and personal skills and problem-solving skills in children. Parents attend workshops, conducted by teachers, on positive child rearing practices. Preschool programs can lead to decreases in childhood antisocial behaviors and delinquency.

**School Programs:** One school program conducted in Seattle was designed to increase children's attachment to their parents as well as their social bonds in school. Parents were trained to “catch kids when they were being good” and reinforce such behavior. Teachers were trained to reward children for participation in classroom management. In the Montréal Longitudinal Experimental Study, there was also a school-based component that fostered social skills and self-control through coaching, peer modeling role-playing and reinforcement. Small group sessions addressed anger management, and how to react to teasing. Parents were also trained to promote consistent rewards and penalties. In another study that took place in Oregon, students in grades 1 through 5 received skills training in the classroom. This was supplemented with parent training. Another school based-program in New Castle focused on children ages 7 to 8 years who were diagnosed with either a social or psychiatric disturbance or a learning problem. Programs included behavior modification, reinforcement, parent counseling, teacher consultation and group therapy. These programs demonstrate that focusing on skills training with children combined with parent training can be effective in reducing antisocial behavior and delinquency.

**Clinic Based Programs:** This program targets the parents of children who have been referred to a clinic because of conduct problems. Video modeling is used to foster interpersonal skills. Parent training involves weekly meetings between parents and therapists for 22-24 weeks. A clinic-based program in Pittsburgh assigned children and their parents to either parent training, problem-solving skills training, or a combined condition. Problem-solving skills were taught to children based on modeling, role-playing and reinforcement. The children had 25 weekly sessions and parent training was for 16 weeks. Child behavior improved in clinic-based programs. Combined conditions were most effective.

**Community Programs:** Difficult behavior boys received regular friendly attention from counsellors for an average of 5 years and whatever medical or educational services were needed. In Oregon, high-risk children were involved in 12 weekly sessions that were delivered in groups. *Children at Risk* is an example of a community program that targets high-risk youths in a comprehensive community-based prevention strategy focusing on risk factors for delinquency; including family skills training and counselling, tutoring, mentoring, after school activities, and community policing. Programs differ for every neighborhood.

**Multisystemic Therapy:** (MST) is a multiple component treatment program conducted in families, schools and communities. It is designed according to the particular needs of the youth and is different for every person. It may include individual, family, peer, school, and community interventions with parent and skills training. MST is shown to be an effective method of treating juvenile offenders.

**Kumpfer, K., & Alvarado, R. (1998). *Effective Family Strengthening Interventions*. Washington, DC: Department of Justice.**

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) conducted studies and found that the importance of family-based interventions lies in both decreasing risk factors and increasing ongoing family protective mechanisms. These mechanisms include supportive parent child relationships, positive discipline methods, monitoring and supervision, and families who advocate for their children by seeking information and support. In accordance with these principles, OJJDP conducted an exploration of intervention programs and found 3 effective program types. Behavioral Parent Training focuses on parents using effective discipline techniques and ignoring disruptive child behaviors. Sufficient lengths for these types of programs are about 45 hours for high-risk families. Examples of this type of program include OJJDP's *Strengthening Americas Families*. The second effective program type was Family Therapy Interventions. These programs target families with adolescents who are demonstrating behavioral problems. Family therapy improves communication within the family, controls imbalance in the family, and improves family relationships. The third effective program type is Family Skills Training. This program type usually targets high-risk children and their families. It is a multi-component intervention that includes behavioral parent training, children's social skills training, and behavioral family therapy or role-playing with special trainers. All of these programs provide structured activities that help improve attachment. This study found that all effective program types must be comprehensive in attending to all the developmental outcomes of the child. They must be focused on the entire family of the child, not just the child or just the parents. They should be long term. The program must be flexible to cultural traditions, family dynamics, appropriateness and recruitment of families.

**McCormish, J. F., Greenberg, R., Ager, J., Essenmacher, L., Orgain, L. S., & Bacik, W. J. (2003). *Family-focused substance abuse treatment: A program evaluation*. *Journal of Psychoactive Drugs*, 35, 321-331.**

McCormish and colleagues (2003) conducted a three-year longitudinal evaluation of a family-focused treatment intervention at a residential treatment facility where women were recovering from substance abuse. This program aimed to enhance family cohesion for these women and their children, and included the women's partners in the treatment whenever possible. The treatment was implemented by a team of professionals that included current staff from the facility, child care workers, a pediatric speech therapist, a pediatric physical therapist, a child therapist, a family therapist, an educational psychologist, 2 infant mental health therapists, a prevention specialist, and a social worker. The mothers were treated as if they were a part of the team and therefore participated in the setting of treatment goals for themselves and their children. Two counsellors or therapists monitored the progress of the family over 90 days. The program provided weekly individual and group sessions focusing on issues pertinent to the women, such as parenting and resolution of abuse and violence. The infant mental health specialists helped the women with issues regarding their relations with their children. Results show that the women stayed in the program for sufficiently lengthy periods of time. Outcomes reflected improvements in self-esteem, level of depression, and overall mood as measured by the Hudson Index of Self-Esteem, the Center for Epidemiological Studies Depression Scale, and the Profile of Moods States. Their attitudes regarding parenting (i.e., corporal punishment and role reversal) also improved significantly. The children of these mothers were assessed at intake and a majority were found to have difficulties in motor and language development. No longitudinal outcomes were available for the children since only a few of them remained in the program after a year. Recommendations for future intervention include determining the optimal time period to remain in the program and identifying specific strategies most effective in facilitating change in the mothers and their children.

**Rogers, H., Cann, W., Cameron, D., Littlefield, L., & Lagioia, V. (2003). Evaluation of the Family Intervention Service for children presenting with characteristics associated with Attention Deficit Hyperactivity Disorder. *Australian e-Journal for the Advancement of Mental Health*, 2, 1-10.**

Rogers and colleagues (2003) evaluated the effectiveness of the application of a Triple P intervention (Positive Parenting Program) on children with Attention Deficit Hyperactivity Disorder (ADHD). Triple P, which is a program based on a social learning model of interactions between parent and child, strives to enhance parental skills and resources, provide a safe and nurturing environment for children, and promote the social, emotional, cognitive and behavioural development in children through parenting practices. This intervention consisted of 8 group sessions, 4 of which were 2 hours in duration, and the remaining 4 consisting of follow-up telephone interviews that were 15 to 30 minutes in duration. 83 children, aged 2 to 15 years, identified as having high ADHD symptomology, participated in the study. Through video tapes, live modeling, instructions, group exercises, rehearsals, and homework assignments, parents learned about the causes of behavioural problems in children, how to build good relationships with their children, how to teach their children new skills and desirable behaviour, and how to set goals, monitor their progress and solve problems independently. Following the program, parents reported significant decreases in the frequency and intensity of behavioural problems in general and specific behaviours associated with ADHD in their children, as measured by the Eyberg Child Behaviour Inventory (ECBI). Furthermore, 43% of the children who scored in the clinical range on the ADHD factor on the ECBI, and 60% of the children who scored in the clinical range on the ECBI Intensity Scale before starting the program, were no longer in this range after the intervention. The mothers of the children reported significant reductions in: their level of depression, anxiety, and stress, as indicated by the Depression Anxiety Stress Scale (DASS); maladaptive parenting practices, as measured by the Parenting Scale; and, conflicts with their partners over parenting concerns, as measured by the Parenting Problem Checklist (PPC). They also had significant increases in their confidence and self-efficacy, as measured by the Parent Sense of Competence Scale (PSCS), and reported high levels of satisfaction with the program.

## **Prevention Programs Related to Childhood Emotional Disorders**

Prevention of childhood emotional disorders is now being recognized as a responsibility to be shared by many individuals, institutions, and groups including parents, families, schools, communities and organizations with child health and welfare mandates. This sense of shared responsibility is reflected in many effective programs; parents working together with schools, community-based interventions that work with parents and children, and schools, communities and parents coming together to provide effective programs for children.

The evidence supporting the effectiveness of universal prevention programs is accumulating (Jamieson & Romer, 2005). As we learn and understand more about healthy development in children, the role of the environment in child development, resilience and effective treatments for emotional disorders, we are able to develop, implement and evaluate programs aimed at both prevention and treatment.

## **Summaries of Relevant Research**

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**Bakermans-Kranenburg, M., van IJzendoorn, M., & Juffer, F. (2003). Less is more meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129, 195-215.**

Several programs are focused on enhancing parental sensitivity and infant attachment security. This is based on the idea that early interventions may be most effective in preventing deviant developmental pathways. It is apparent that interventions focusing on enhancing infant sensitivity are effective in enhancing maternal attachment. Using video feedback in interventions also seems effective. Interventions that focus on infants older than 6 months show benefits. More specific interventions that focus on teaching sensitive maternal behaviour appear to be effective at improving both insensitive parenting and infant attachment. Involving fathers appears to be significantly more effective than focusing only on mothers. Generally, attachment insecurities of infants are more difficult to change than mothers' insensitivity.

**Cardemil, E., Reivich, K., & Seligman, M. (2002). The prevention of depressive symptoms in low-income minority middle school students. *Prevention & Treatment, 5, 33- 42.***

This program is adopted from the original Penn Resiliency Program (Jaycox et al., 1994) and consists of a 12-week program that focuses on teaching low-income minority students the links between thoughts and emotions. Children learn how to generate a list of possible explanations for negative events in their lives. There is a focus on handling conflict, setting goals, and problem-solving in social situations. Weekly homework assignments are given. Skills are taught on a weekly basis in a group setting. Each session is 90 minutes in length and is led by a trained Master's level graduate student. These facilitators receive at least 20 hours of training prior to leading a group. They must follow the structure provided in a manual and use the provided suggestions for each session. They receive biweekly supervision, which includes an evaluation to ensure adherence to the manual and following of protocol. Cultural appropriateness for minority populations is addressed as follows: the race-ethnicity of the characters used as examples are changed to suit the population; discussions are focused on applicable issues such as difficulties associated with growing up in a single parent home; more time is spent on alternative ways for dealing with conflict; and, weekly phone calls are made to remind children to complete their weekly homework assignments.

**Carr, A. (2004). Interventions for post-traumatic stress disorder in children and adolescents. *Pediatric Rehabilitation, 7, 231-244.***

Carr (2004) reviewed treatment studies for children who developed PTSD as a result of child sexual abuse (CSA), traumatic occurrences, and natural disasters. For CSA survivors who have developed PTSD, interventions that addressed psycho-education, coping skills training, graded exposure, safety skills training, and behavioural parent training were more effective in allaying levels of anxiety, depression, and adjustment problems compared to supportive therapy or social services, and these results were stable over the long-term. Similarly, for survivors of disasters and accidents who have developed PTSD, psycho-education, debriefing, graded exposure, grief work, and coping skills training were effective in reducing PTSD symptoms, behavioural problems, anxiety and depression, and the results were maintained over time. Other strategies that the author discusses are: symptom monitoring; re-establishing normal routines; imaginal, in vivo, and media assisted exposure; school consultations; cognitive restructuring; addressing co-morbid disorders and problems; and, preventing relapse.

**Durlak, J. A., & Wells, A. M. (1998). Evaluation of indicated preventive intervention (secondary prevention) mental health programs for children and adolescents. *American Journal of Community Psychology, 26, 775-802.***

Durlak and Wells (1998) performed a meta-analysis of 130 secondary preventions that attempted to identify and address early signs of maladjustment in children and adolescents that could lead to the development of certain disorders later on. The treatments in these studies were classified as behavioural, cognitive behavioural, and nonbehavioural. All 3 treatments were found to produce positive significant effects, however, behavioural and cognitive behavioural treatments produced higher mean effects than nonbehavioural treatment and other interventions to prevent smoking, alcohol use, and delinquency. Behavioural interventions were more effective than cognitive behavioural interventions in improving child competencies, whereas cognitive behavioural interventions were more effective than behavioural therapy in reducing problems such as anxiety and disruptive behaviour. Behavioural and cognitive behavioural treatments are similar in effect to psychotherapy for children who have already developed problems. Secondary preventions as a whole were found to be especially effective for treating externalizing symptoms in youth. Recommendations for future studies include operationalizing techniques for intervention, examining how a child's developmental stage and initial level of dysfunction affect the extent to which interventions produce a positive outcome, implementing more rigorous screening methods to identify at-risk children, considering contexts outside of school in which secondary preventions could play a role, and continuing to provide and improve upon secondary preventions in the school setting.



**Hayes, C., & Morgan, M. (2005). Evaluation of a psychoeducational program to help adolescents cope. *Journal of Youth and Adolescence*, 34, 111-121.**

“Helping Adolescents Cope” is a school-based psychoeducational program that uses a form of cognitive behaviour therapy. It is comprised of 16 sessions that follow a similar format. The format includes an initial introduction where participants get to know each other and learn about the nature of the program. In following introductions, “Joe the cartoon juggler” is introduced and his role is explained. Students use Joe and assess his feelings in regards to questions such as “how might Joe be feeling about being in this group for the first time?” Joe is continually used to illustrate possible ways of thinking and feeling. Following the introduction, is the presentation of material. Key components include helping students become aware of the interactions between thoughts feelings and behaviours, and raising the awareness of the importance of fun activities in their lives. Students are taught basic relaxation methods, and they learn to develop their problem-solving skills, social skills and assertiveness skills. Students are encouraged above all to perceive themselves as being able to cope with stress. There is a focus on active involvement during the presentation of material. The third component is group exercises. These include the monitoring of moods through relaxation exercises. Group activities are also used to reinforce key points of the program. The final component uses practice exercises to reinforce key principles that have been learned. Each session concludes with the guidance counsellor’s use of reflective questions such as “what have you learned today?”

**Ialongo, N. S., Werthamer, L., Kellam, S. G., Brown, C. H., Wang, S., & Lin, Y. (1999). Proximal impact of 2 first-grade preventive interventions on the early risk behaviors for later substance abuse, depression, and antisocial behaviour. *American Journal of Community Psychology*, 27, 599-641.**

Ialongo and colleagues (1999) examined the effects of 2 first-grade preventive intervention programs aimed at treating early known risk factors for affective disorder, conduct disorder, and substance abuse later in life. These risk factors are poor achievement, aggression and shy behaviours, and concentration problems. The first intervention, called The Classroom-Centered (CC) Intervention, addressed these risk factors by improving the first-grade teachers’ behavioural management and instructional skills through enhancing the curriculum, improving behavioural management skills, and devising backup plans for the children who did not respond well to the intervention. One behaviour management technique was the Good Behaviour Game (GBG) in which children were assigned to one of 3 teams and points were given to each team for good behaviour and taken away for shy or aggressive behaviour. These points were then exchanged for rewards; these rewards were always paired with social reinforcement and gradually used in place of material rewards. The second intervention, called the Family-School Partnership (FSP) intervention, addressed early risk factors by improving the communication between parents and teachers, and by teaching parents behavioural management techniques, implementing weekly home learning and communication activities, and holding 9 workshops for parents. The teachers completed 60 hours of training. The sample consisted of 678 first-graders and their families in 9 elementary schools in Baltimore. The classrooms were randomly assigned to either the CC, FSP, or control group and teachers and children were randomly assigned to the classrooms. The interventions were implemented over the first-grade year. Results showed that the CC intervention had a significantly positive impact on achievement, concentration problems, aggression and shy behaviours, especially in boys. The CC intervention was also found to address the early risk factors better than the FSP intervention. Although the FSP intervention did result in improvements, the effects were moderate compared to the CC intervention. Greater adherence to the interventions were linked to greater impact of the intervention on behavioural and achievement ratings. The improvements in problem behaviours were maintained in the second grade. Some recommendations for future research include investigation of the gender difference in terms of the effectiveness of the interventions, especially on achievement, and of the reasons behind the difference in effectiveness of the 2 interventions.

**Jolivette, K., Stichter, J. P., Nelson, C. M., Scott, T. M., & Liaupsin, C. J. (2000). Post-school outcomes for students with emotional and behavioural disorders. *ERIC/OSEP Digest, E597, 1-7.***

Jolivette and colleagues (2000) examined the outcomes of students with emotional and behavioural disorders (EBD) after finishing school, and the interventions that could help to improve such outcomes. Students with EBD have academic difficulties and are less likely to finish high school, more likely to have employment difficulties, and more likely to have problems in developing social relationships. Furthermore, such individuals are more likely to be incarcerated. Social skills training was found to be one of the most effective interventions for difficult behaviours, only if students were taught specific behaviours, given direct instruction by the teacher, given the opportunity to practice the skills they have learned across natural settings, and reinforced when performing appropriate responses. The authors also suggested peer-mediated strategies as another intervention that can address the social difficulties of individuals with EBD. Vocational training is a strategy that addresses the employment problems in EBD individuals and is the result of collaboration between schools and communities. This type of training provides specialized education and job-specific skills training for people with disabilities to help them transition smoothly from the school environment to the work place. Another strategy to help EBD students experience a smoother transition from school to work is having a transition plan, which consists of details about the student and his or her family's goals after finishing school regarding employment and independent living. Some examples of possible goals for EBD individuals are: identifying community agencies for assistance in financial needs and counselling agencies for life-stresses; obtaining employment training from different sites; setting realistic professional and personal goals; identifying living options; setting up a budget; finding a job; and, finding support for difficult situations. A final strategy is called a wrap-around plan, which matches people and their families with community resources such as counselling, financial aid, health services, etc.

**Kam, C., Greenberg, M., & Kusche, C. (2004). Sustained effects of the PATHS curriculum on the social and psychological adjustment of children in special education. *Journal of Emotional and Behavioural Disorders, 12, 66-78.***

“Promoting Alternative Thinking Strategies” (PATHS) is a comprehensive curriculum that is based on the ABCD (affective- behavioural- cognitive- dynamic) model of development. This model is based on the premise that coping is based on a function of emotional awareness, affective-cognitive control, behavioural skills, and social cognitive understanding. Derived from this model is the understanding that the school environment is a central locus of change. Accordingly, PATHS is designed to be delivered by teachers. Furthermore, it is taught on a regular basis throughout most of the school year and it is supplemented by other daily activities so that children to learn how to use their skills in other settings. The program consists of 60 lessons for students in second and third grade. The PATHS lessons are taught 3 times a week and each lesson is 20 to 30 minutes in length. There are units on self-control, emotions and problem solving. The Turtle Technique is used to teach self-control. This technique uses short-term reinforcement such as social praise and symbolic material reinforcement. The “Feelings Unit” of this program consists of 35 lessons on teaching emotional and interpersonal understanding, and teaches students 35 different emotions. The “Problem Solving Unit” includes a problem box. Children can write down their real life problems and give it to the teacher. These problems are the basis for discussions on solving problems. The teachers who run this program attend a three-day training workshop. Teachers are consulted and rated by a project staff on a weekly basis. Special education teachers use modified versions of this program and place a greater emphasis on teaching and reinforcing behavioural self-control and less emphasis on problem solving.

**Kutash, K., Duchnowski, A. J., Sumi, W. C., Rudo, Z., & Harris, K. M. (2002). A school, family, and community collaborative program for children who have emotional disturbances. *Journal of Emotional and Behavioural Disorders, 10*, 99-107.**

Kutash and colleagues (2002) evaluated the School, Family, and Community Partnership Program, which was designed to improve outcomes for students with emotional disturbances (ED) by increasing family participation and access to community support services, and facilitating ownership and sustainability of the program by the teachers and school staff. Student participants included 23 children from a middle school who had ED and were enrolled in special education classes. The average age of the children was 11.7 years. Staff participants included special education teachers, social workers, parent advocates, the assistant principal, a behaviour interventionist, a guidance counsellor, a school resource officer, and a staff member from the Department of Juvenile Justice. Students were assessed several times over the duration of the intervention. Staff participants were trained over 7 sessions, 6 of which covered content of the program and the last of which provided an opportunity for the staff to role-play cases to practice the skills they learned. The training program for the staff is detailed in the *School, Family, and Community Team Manual* (Duchnowski, Kutash & Rudo, as cited in Kutash et al., 2002). Meetings were held in order for the team to assess the strengths, needs, barriers, and specific goals of the children and their families. The family was included in the decision-making process during the meetings. The team members decided on the frequency of meetings based on the students' needs. Results showed that the staff participants' knowledge level had increased after the training program, and was maintained 6 months afterwards. The program was found to adhere to 72% of the concepts from the Partnership Program, which was important, because there was a significant correlation between program adherence and reading achievement in students. The students' emotional functioning, as measured by the Child Behaviour Checklist (CBCL) and the Child and Adolescent Functional Assessment Scale-Parent Report (CAFAS), moved from the clinical into the normal range during the program. Students also spent slightly less time in special education, and discipline rates significantly decreased over time. Staff participants reported ownership of the program and the children's parents reported satisfaction with the program. Future recommendations included continuing collaboration between all team members and rigorous testing of the effectiveness of the program.

**Lopez, M. A., Toprac, M. G., Crismon, M. L., Boemer, C., & Baumgartner, J. (2005). A psychoeducational program for children with ADHD or depression and their families: Results from the CMAP feasibility study. *Community Mental Health Journal, 41*, 51-66.**

Lopez and colleagues (2005) described and evaluated the Child Medication Algorithm Project (CMAP), a psychoeducational program in Texas designed to encourage children and adolescents with ADHD, and/or depression, treatment adherence and participation. The project also strives to help these children and their parents develop coping skills. The philosophy of the program is to increase active participation in treatment through better understanding of the disorder and the treatment options available, in order to increase treatment adherence. The CMAP Patient Advocacy Team (PAT) worked together to develop this program by first identifying specific educational needs of the children, then collecting a variety of resources on ADHD and depression and finally writing a manual on the implementation of the program. Basic information is given during early visits while more in-depth information is given later on in the sessions, all through a variety of media with the repetition of key concepts throughout. The program materials consist of: introductory information about the disorder and related issues; medication information; handouts to facilitate self-monitoring of symptoms of the disorder and side effects of the medication; handouts on concrete strategies to cope with the disorder; video-based groups in which parents and children view a video and engage in discussion with other parents and children about the disorder and related topics; and, finally, topical groups in which parents and children further engage in group discussions about the disorder and build knowledge and social support through shared experiences. An evaluation of the feasibility of this program yielded results indicating that parents and children were satisfied with the amount of education provided and found it to be helpful. Specifically, most participants used the handouts that contained introductory information about the disorder and the handouts that detailed particular medications.



**Lynch, K. B., Geller, S. R., & Schmidt, M. G. (2004). Multi-year evaluation of the effectiveness of a resilience-based prevention program for young children. *The Journal of Primary Prevention, 24*, 335-353.**

Lynch, Geller and Schmidt (2004) performed a multi-year evaluation of the effectiveness of AI's Pals: Kids Making Healthy Choices, a prevention program that focuses on increasing resiliency and decreasing risk factors in preschool-aged children (3 to 8 years). The goals of the program are to promote the social and emotional development of children by facilitating teachers' abilities to create a resiliency-promoting classroom environment, and to prevent the development of antisocial and aggressive behaviours. Teachers were trained by experts during a 2-day workshop. They then led 2 lessons a week for 23 weeks, each session lasting for about 15 to 20 minutes. Children were taught skills related to social competence, communication, pro-social behaviours, problem-solving, autonomy, and having a sense of purpose and belief in a bright future, all of which are intended to help them handle stressors in life. Lessons were taught through puppet-led discussions, role-playing, creative play, music, books, pictures, art, movement, and brainstorming. Original songs were created to infuse messages congruent with the intervention's philosophy. Results show that this intervention led to significant positive changes in prosocial skills from pre-test to post-test, as measured by the Child Behaviour Rating Scale-30 (CBRS-30), the Preschool and Kindergarten Behaviour Scale (PKBS), and the Teacher Report of Child Coping (TRCC). Gains were also achieved in social interactions and positive coping skills. Antisocial and aggressive behaviours were decreased as well.

**Miller, D., DuPaul, G., & Lutz, G. (2002). School based psychosocial interventions for childhood depression: Acceptability of treatments among school psychologists. *School Psychology Quarterly, 17*, 78-99.**

School psychologist practitioners use a variety of techniques in psychosocial interventions for childhood depression. Cognitive restructuring techniques focus on altering children's negative and self-defeating thoughts. When depressive thoughts in the child are recognized by the school psychologist, he/she explores the parameters of its occurrence. The psychologist then works collaboratively with the child to discover more adaptive ways of conceptualizing situations. Social skills training focuses on teaching children about interactions with others. This includes initiating interactions, responding to the initiation of others, maintaining interactions and dealing with conflict. Procedures such as modeling, role-play, rehearsal, and performance feedback are used to reinforce the learning of these skills. Self-control therapy focuses on training children to engage in appropriate levels of self-monitoring, self-evaluation, and self-reinforcement. Children are taught to change their focus from negative events to positive ones. The psychologist works with the child to identify unrealistic self-standards and understandings of success and failure.

**Peters, R., Petrunka, K., & Arnold, R. (2003). The Better Beginnings, Better Futures Project: A universal, comprehensive, community based prevention approach for primary school children and their families. *Journal of Clinical Child and Adolescent Psychology, 32*, 215-227.**

The Better Beginnings, Better Future Project is a community-based intervention strategy with a major focus on the social-emotional functioning of young children. The program caters to children ages 4-8 years and their families. All 3 program sites were chosen based on socioeconomic disadvantage and there exists slight variations dependant on the site observed. In Cornwall, Ontario the program is devoted to school-based activities. This includes full time facilitators to provide enrichment in the classroom, such as homework help and tutoring. Furthermore, the program includes both a breakfast program and a toy library with resources and materials. Activities for children and families during holidays and school breaks, play groups for children, family visits, and home visits to new families are all coordinated. In the Highfield, Ontario site, most programming takes place on the school premises. Enrichment workers visit parents on a regular basis to provide information about the child's school activities. Parents are given information regarding available community resources and are encouraged to get involved. Programs include social

skills programming, health and nutrition programming, a toy library and programs for children and parents during holidays and breaks. In the Sudbury, Ontario site, there is collaboration with the Native Friendship Centre and an interest in community development. More than half of the budget is dedicated to before and after school programs and holiday programs. Community programs include community kitchens, community gardens and a Peaceful Playground Program that teaches children anger management.

**Reivich, K., Gillham, J. E., Chaplin, T. M., & Seligman, M. E. P. (2005). From Helplessness to Optimism: The Role of Resilience in Treating and Preventing Depression in Youth. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 223-237). NY, NY: Kluwer Academic/Plenum Publishers.**

The Penn Resiliency Program is focused on younger adolescents and strives to help them improve their problem solving skills and their ability to navigate daily stressors in life, including major setbacks such as parental loss or divorce. The intervention is delivered through twelve 90-minute intervention sessions. These sessions are designed to be delivered by school counsellors and teachers who are trained and supervised in intervention delivery. Seven abilities are addressed: emotional regulation; impulse control; causal analysis (identifying accurate causes of problems); realistic optimism (thinking optimistically, but realistically); self-efficacy; empathy; and, reaching out (being comfortable with gaining support through difficult times). This intervention is based on the ABC model. A (the activating event) affects B (thoughts and beliefs) which then causes C (emotional and behavioural consequence). This model teaches students that events do not directly affect emotions; rather it is dependant on thoughts and beliefs. This model is taught through the use of 3 panel cartoons. Teenagers fill thought bubbles that fit the logic of the ABC model. Accordingly, they learn to identify patterns in their thinking that lead them to experience some emotions more than others. Then, students are taught to replace negative thoughts with happy thoughts. Furthermore, they learn to generate alternative beliefs and determine which beliefs are most accurate for solving their problems. A session called “putting it into perspective” focuses on beliefs of the future. With realistic optimism, they identify worse case scenarios and learn to recognize the most likely outcomes. PRP also addresses assertiveness, negotiation training, decision-making and creative problem solving. Parents participate in the Penn Resiliency Program for Parents (PRP-P). The 2 major goals are to teach them the core skills of PRP, and how to model these skills effectively for their children. Six 90-minute sessions are facilitated by school guidance counsellors, social workers and psychologists who are certified through a 30-hour training program provided by senior members of the research team. The first 5 sessions are devoted to ABC, self-disputing, putting it in perspective, real time resilience (disputing counterproductive beliefs in real time), and assertiveness. The final session reviews and anticipates upcoming stressors. This combined program has been successful in dealing with depression and anxiety symptoms.

**Roberts, C., Kane, R., Thomson, H., & Bishop, B. (2003). The prevention of depressive symptoms in rural school children: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 71*, 622-628.**

This intervention is a targeted depression intervention program adopted from The Penn Prevention Program (Jaycox et al., 1994). Students in the 7<sup>th</sup> grade are selected to attend a series of 12 sessions. In order to avoid stigmatization, this is done in a manner similar to withdrawing children for extracurricular activities. Students learn to evaluate thoughts, deal with family conflict, and be more assertive. Topics including negotiation, coping skills, graded tasks, social skills, decision-making, and problem-solving are addressed. The final session is a review and a party for the children. Each group is led by a facilitator who has received 40 hours of training from the developers of the program and a co-facilitator who has received 30 hours of training from researchers. Facilitators and co-facilitators are school psychologists and nurses with bachelor level behavioural science degrees. Facilitators and co-facilitators use scripted manuals and receive 1 hour of phone supervision from a registered clinical psychologist on a bi-weekly basis.

**Ryan, A. K. (2000). *End of project report for the achieving, behaving, caring project: Preventing the development of serious emotional disturbance among children and youth with emotional and behavioural problems*. Burlington, Vermont: Dept. of Education, University of Vermont.**

The Achieving, Behaving, Caring Project (ABC project) was an intervention that aimed to prevent children and youth who have emotional and behavioural problems from developing more severe disturbances. This intervention was comprised of 3 components: social skills instruction; parent liaison; and, the Parent-Teacher Action Research (PTAR) model. Social skills instruction was taught by first and second grade teachers to the participants and their classmates for 15-20 minutes 2 times a week. The topics covered were communication, personal skills, interpersonal skills, and response skills. One of the skills taught to the students was how to take steps towards being a good listener. Parent liaisons, who were employed by the project and therefore independent from the school, were mediators between the students' parents and teachers. Their role was to facilitate communication between the parents and teachers so that both could work collaboratively on goals to help the students. The PTAR model was used to help guide meetings. The 4 steps of this model include: setting a goal for students by focusing on their strengths; collecting data about the student's progress (e.g., through journals, anecdotes, standardized test scores, notes, etc.); developing a theory about the students' behaviours after analyzing the data that were collected; and, finally developing an action plan based on the theory developed. Results show that problem behaviours such as internalizing, externalizing, and delinquent behaviours, as measured by the Teacher Report Form (TRF), the Child Behaviour Check List (CBCL), and the Social Skills Rating System (SSRS), were significantly reduced in the group of participants who were involved in the intervention compared to a control group. Teachers and parents also reported significant improvements in children's competent behaviours such as academic performance, self-control, cooperation, and responsibility, as measured by the SSRS and the TRF. Parents whose children underwent the intervention felt a greater sense of empowerment in getting school services for their children, as well as a greater sense of advocacy, knowledge, and competence. Anecdotal evidence shows that the ABC intervention could be applied to individuals with articulation disorder.

## Prevention Programs for Children with Behavioural Disorders

Behavioural interventions comprise some of the most direct, effective and easily applied prevention programs for children. The observable nature of behaviours, and the ability to measure them pre- and post-intervention, gives researchers and those who work directly with children tangible, operationalized goals and evidence of attainment of those goals. Among the most effective behavioural programs are those which see parents, schools and others working as a team to provide consistent and effective messages to children and youth about their behaviour. Building capacity for parents, children and educators is a goal for many behavioural interventions. By providing children and with education, exposure, strategies and feedback we provide them with tools to develop workable coping strategies, an understanding so they may evaluate the effectiveness of strategy use, and a sense of control over their own behaviours and decision-making about behaviours.

### Summaries of Relevant Research

**Amodei, N., & Scott, A. A. (2002). Psychologists' contribution to the prevention of youth violence. *The Social Science Journal*, 39, 511-526.**

This article provides a brief overview of 2 prevention interventions. The first intervention was designed to impact preschoolers and was targeted at their teachers. Its goal was to heighten teachers' awareness of the consequences of exposing young children to violence and how to intervene with these children once they have been exposed. Furthermore, this program taught teachers to use positive discipline practices, observational learning, and modeling to foster prosocial behaviours in young children. Teacher training was conducted in either one all day session or two half day sessions. The program provided teachers

with information regarding the following topics: the meanings of violence; epidemiology and statistics; developmental effects of violence; emotional responses of young children to violence and methods of intervention; instructing young children in resolving conflict peacefully; dealing with parent-teacher conflicts; use of positive discipline; personal anger management; and, personal commitment to change. The training employed role-plays, visual aids, small group exercises, short video clips, problem-solving exercises and games. Teachers, intervention participants, and control group participants completed a pre-test and post-test that measured violence prevention knowledge. Post-test scores for intervention participants showed an improved perceived sense of remediation competency and violence prevention attitudes.

The second intervention was conducted in an urban alternative high school and targeted adolescents directly. The intervention involved the delivery of a modified version of the “Violence Prevention for Adolescents” curriculum (Prothrow-Smith, 1987). The curriculum was delivered for 10 weeks. The program highlighted the undesirability of violent behaviour and focused on the interruption and prevention of behaviours and situations that may lead to violence and instruction regarding nonviolent methods of conflict resolution. Trained prevention educators experienced in working with the target population delivered the curriculum, which focused heavily on interactive methods (i.e., vignettes and role plays). Comparisons of pre- and post-test measures showed significant decreases in the use of weapons, gateway drugs, and total violence-related behaviours. Nearly two-thirds of participants reported that they would recommend the curriculum experience to their friends.

This article also presented the current epidemiological data regarding youth violence in the United States. The authors provided a summary of the major psychological theories of youth violence and an overview of risk factors. Finally, the authors reviewed some effective preventive interventions.

**August, G. J., Egan, E. A., Realmuto, G. M., & Hektner, J. M. (2003). Parceling component effects of a multifaceted prevention program for disruptive elementary school children. *Journal of Abnormal Child Psychology*, 31, 515-527.**

The Early Risers “Skills for Success” Program is a full intervention model for children with behavioral difficulties. When delivered in its entirety, the model has 4 components that are delivered in unison as a comprehensive and coordinated package. However, for the purposes of the current study, 2 of the 4 components, which focus on education and skills training, were delivered to participants. Participating in the current study were elementary school children from a semi-rural Midwestern area of the United States. Twenty comparable elementary schools participated in the screening of kindergarten children for aggressive and disruptive behavior. The schools were randomly assigned to 1 of 2 intervention conditions (i.e., 5 schools in each intervention condition) or a control condition (i.e., a total of 10 schools were assigned to the control condition). In all, 124 children were randomly assigned to an intervention condition and 121 children were assigned to the control condition.

The purpose of the current study was to determine the characteristics of the children in 2 intervention program components over a three-year trial. One intervention program was the Summer School Program, where participants attended the program 4 days a week for approximately 8 hours a day over a 6-week period. The program delivered skills training in a natural setting, integrating age-matched prosocial peers into all program activities. The second intervention curriculum was the Family Program, which is a biweekly family program offered October through May over the 3-year period, with a combined total of 58 hours in 29 sessions. Each session began with a communal meal, followed by separate parent and child groups, and ended with a parent-child interactive activity.

The results of the study indicated that, in general, the outcomes were moderated by the child’s level of disruptiveness for academic achievement and aggression outcomes, but not for social competence. With regards to the Summer Program, at Year 3 higher attendance rates were associated with higher scores for mild-moderately disruptive children but lower scores for highly disruptive children. For the Family Program, higher attendance was associated with lower aggression scores for the mild-moderately disruptive children.

**August, G. J., Hektner, J. M., Egan, E. A., Realmuto, G. M., & Bloomquist, M. L. (2002). The early risers longitudinal prevention trial: Examination of 3-year outcomes in aggressive children with intent-to-treat and as-intended analyses. *Psychology of Addictive Behaviors, 16*, S27-S39.**

The Early Risers Skills for Success Program is a preventive intervention designed for elementary school children with early aggressive behaviours. It builds on the strengths within families and empowers families to increase parent investment in the child by enhancing effective parenting skills, parent-child relations, and parent involvement in the child's schooling and education. The program was developed through interagency community collaboration with members from key community sectors, including public education, local child and family service agencies, and university prevention specialists.

The Early Risers Program is an intervention model with 2 complementary components, CORE and FLEX, to be delivered in tandem without interruption over a multiyear period. CORE consists of a coordinated set of evidence-based interventions that target key development competence domains and includes an annual six-week Summer School Program, a regular school year Monitoring and Mentoring School Consultation Program, and a biweekly Family Program that includes a child-focused curriculum run concurrently with parent education and support. FLEX is a risk-adjusted family empowerment intervention delivered through a home visitation approach and offers families a variety of support, education, brief interventions, and community mental health service options, which are tailored to each family's unique strengths, needs, and participation barriers through ongoing assessment. The current study was designed to assess the longitudinal-experimental impact of a three-year Early Risers program on predictor variables related to later substance abuse development.

The results indicated that program participants demonstrated greater gains in social skills, academic achievement, and parent discipline, when compared to control participants. Furthermore, Family Program participants showed improved parent discipline practices and gains in children's social skills. Children's level of aggressive behavior was found to moderate program effects (i.e., the most severely affected program participants made significant gains, as compared to the control participants). Overall, FLEX family support was found to be associated with gains in academic achievement, concentration problems, and social skills. No differences were observed between program and control group children in level of aggression, hyperactivity, and impulsivity. Positive gains in social skills are believed to reflect, in time, peer acceptance, positive reputation status, and perhaps a drug-free lifestyle.

**August, G. J., Lee, S. S., Bloomquist, M. L., Realmuto, G. M., & Hektner, J. M. (2004). Maintenance effects of an evidence-based prevention innovation for aggressive children living in culturally diverse urban neighborhoods: The Early Risers effectiveness study. *Journal of Emotional and Behavioral Disorders, 12*, 194-205.**

In the current study, the Early Risers Prevention Program was implemented under "real world" conditions through a nonprofit community organization, Pillsbury United Communities (PUC). PUC serves poor, ethnically diverse residents of inner-city neighborhoods through a network of neighborhood centres characterized by high rates of crime and violence, low incomes, high rates of unemployment, and high rates of family mobility. For the purposes of the current evaluation, 2 PUC community centres that were each affiliated with 5 different elementary schools were then recruited. The current three-year evaluation consisted of a two-year active intervention phase followed by a one-year no-intervention follow-up.

Participating in the current evaluation were 327 kindergarten and first-grade children who were selected based upon their observed aggressive behavior. The children were then randomly selected to 1 of 3 groups, full intervention (CORE+FLEX), partial intervention (CORE-only) or no intervention (i.e., control group). The children and their families received the intervention for 2 consecutive years. It was delivered by 4 staff members, 2 from each neighborhood centre. All participating children underwent several assessments over the 3 years of the study, with the baseline assessment having occurred after the recruitment but before the intervention was implemented. The second and third assessments were done following each



of the 2 intervention years, while the follow-up assessment was completed 1 year after the intervention was completed (i.e., at the end of the follow-up year). In each assessment, the children were assessed on school adjustment, behavioral self-regulation, and social competence.

The results of the community-based Early Risers intervention trial indicated that there was an overall program effect on children’s school adjustment and behavioral difficulties. However, these positive effects were not maintained at follow-up. When compared to the control group children, the intervention children also demonstrated higher levels of social competence and these effects were maintained through the follow-up assessment. No significant differences were found between the children’s outcomes when the full- versus partial-dosage participant outcomes was compared. Upon further analyses, it was determined that the child’s level of participation in the intervention did impact upon the children’s outcomes. More specifically, it was found that children who had high attendance rates (in either of the 2 intervention dosage levels) were more likely to have higher levels of social competence, lower levels of externalizing problems, and better academic achievement than the children who had poor intervention attendance.

**August, G. J., Lee, S. S., Bloomquist, M. L., Realmuto, G. M., & Hektner, J. M. (2003). Dissemination of an evidence-based prevention innovation for aggressive children living in culturally diverse, urban neighborhoods: The Early Risers Effectiveness study. *Prevention Science*, 4, 271-286.**

Empirical validation and efficacy for the Early Risers “*Skills for Success*” Program has already been established for children residing in a semi-rural community who exhibit aggressive behaviors. However, at the time this study was undertaken, it was not yet known whether the Early Risers Program could be successfully implemented in natural service settings. Therefore, the purpose of the current study was to “evaluate the effectiveness of the Early Risers “*Skills for Success*” Program when implemented in a non-profit community system of care (i.e., neighborhood family centers) available to inner-city children and their families”.

The intervention was delivered in full, with the CORE (i.e., child-focused) and FLEX (i.e., family-focused) components delivered in tandem over a two-year period. The authors evaluated the impact of the full intervention (i.e., CORE+FLEX) versus a partial intervention model (i.e., CORE only) for their ability to improve child functioning and indices of parent adversity and style. The intervention was delivered at 2 neighborhood family centres.

Children participating in the intervention were in either kindergarten or grade 1 and they resided in economically disadvantaged urban neighborhoods in a large Midwestern metropolitan city. Once a sample of 327 high-risk aggressive children were recruited and selected for participation, the children were randomly assigned to 1 of the 2 experimental conditions (i.e., CORE+FLEX, CORE-only). A corresponding sample of 121 children in kindergarten and grade 1 were recruited to serve as normative participants, being assigned to the no-intervention control condition.

The results of the current investigation were said to provide partial replication of the Early Risers “*Skills for Success*” Program. Results indicated that children who received either form of intervention, when compared to their control group counterparts, were observed to have made significant gains in social competence and school adjustment. Furthermore, highly aggressive children who received the intervention demonstrated reductions in their disruptive behavior, while program-participating parents reported reduced levels of stress. When the effectiveness of the 2 different levels of intervention were directly compared, the “full strength” model (CORE+FLEX) did not produce greater changes in the participants than the partial model (CORE only), a finding that was contrary to the authors’ hypothesis.

**Charlebois, P., Vitaro, F., Normandeau, S., & Rondeau, N. (2001). Predictors of persistence in a longitudinal preventive intervention program for young disruptive boys. *Prevention Science, 2*, 133-143.**

The authors evaluated a three-year multi-component preventive intervention program targeted at young boys with behaviour problems and designed to prevent school underachievement. The intervention for boys included social skills training and self-regulation training (details of these 2 components are described in Charlebois, 2000 and Charlebois et al. 1999). The intervention for parents was intended to provide support and skills training and was conducted in 3 phases. The first phase sought to establish a collaborative relationship and reduce resistance. The second phase had parents cooperate with trainers in preparation and delivery of the boys' training program. The third phase involved group problem-solving. The intervention in the schools was intended to create an alliance with school directors and teachers by providing support in coping with stress, encouraging the creation of teacher support groups in each school, using an empowerment approach in the decision-making process, and providing information to teachers regarding disruptive behaviours, classroom management of disruptive behaviours, classroom self-regulation, and problem-solving strategies.

Participants were 59 disruptive boys, their parents and their teachers. The boys were identified as disruptive when teachers and parents reported high scores in the inattention-hyperactivity and aggressiveness subscales of the Preschool Behavior Questionnaire. Results reported in the current study focused solely on variables contributing to treatment adherence and did not describe results in terms of behavioural, academic, or family functioning improvements.

**Collingwood, T. R., Sunderlin, J., Reynolds, R., & Kohl, H. W. (2000). Physical training as a substance abuse prevention intervention for youth. *Journal of Drug Education, 30*, 435-451.**

The First Choice Physical Fitness Program was designed to directly provide structured physical training to teach self-esteem, self-discipline, self-responsibility values and life skills, through physical activity. Furthermore, the program provides participating youth with alternative lifestyle choices to counteract the substance abuse lifestyle. The program was developed because previous research indicated that many substance abuse prevention programs are in need of valid, practical intervention strategies. An emerging preventive and treatment theme has highlighted the need for alternative lifestyle activities to positively affect risk factors. One proposed alternative lifestyle is that of a structured exercise or physical training regime. The objective of the project was to provide youth from substance abuse prevention programs with the First Choice Program at selected prevention sites within the state of Illinois.

There are 3 components to the First Choice Program. The first is the Adolescent Fitness Skills and Exercise Training Program, designed to teach participants physical fitness "life skills" focusing on self-assessment, goal setting, exercise and nutrition planning, and self-reward motivation. The following 4 major program activities were provided to teach the skills: exercise classes; educational modules; discussion modules; and, individual exercise program maintenance. The program's regime was to be performed for approximately 45 to 90 minutes, 3 days per week over a 9-12 week period. The second component was the Parent Training module, designed to teach parents 3 basic support skills: behavior contracting with their child; family fitness activities; and, personal fitness programs. Finally, the third component was comprised of the Peer Fitness Leader's Training, where peers were selected and trained as "exercise buddies" and role models for the youth in the program.

Data from 329 youth in 6 Illinois substance abuse prevention programs was evaluated. The results of the pre- and post- data demonstrated consistent positive changes in participants' activity levels, physical fitness, psychosocial risk factors and percentage of youth who used various substances. Moreover, there was a trend of increasing effect of altering activity and fitness levels resulting in a positive effect of reducing risk factors (i.e., decrease in self-reported rates of poor school attendance, anxiety, depression, and number of peers who use drugs and alcohol). There was also a decrease in self-reported use patterns (i.e., there was a decrease in number of youth reporting use of cigarettes, smokeless tobacco, and alcohol).

**Day, M. (2003). Culturally grounded substance use prevention: An evaluation of the keepin' it R.E.A.L. curriculum. *Prevention Science, 4*, 233-248.**

The *keepin' it R.E.A.L.* curriculum was designed and implemented by the Drug Resistance Strategies Project and is based on the idea that by effectively teaching communication and life skills, the negative effects of peers and other influences can be reduced if not eliminated. The program is designed to be a culturally grounded intervention that uses “a cultural resiliency model that incorporates traditional ethnic values and practices that promote protection against drug use” (Castro et al., 1999, p. 520, as cited in Hecht et al., 2003, p. 234).

The purpose of the current study was to evaluate a *keepin' it R.E.A.L.* intervention designed to target substance abuse among urban middle-school students. The curriculum is a 10-lesson program that promotes anti-drug norms and teaches resistance among other social skills. The program and skills are reinforced with booster activities and a media campaign. Three cultural versions of the curriculum exist: Mexican American; combined African American and European American; and, Multicultural. The program evaluation was conducted over a 48-month period, with 35 middle schools participating. The schools were randomly assigned to one of the 3 culture-oriented curricula or to a control group. A total of 6,035 students participated in the current study and completed both completed the original baseline questionnaire and follow-up questionnaires over a 2-year period.

The results of the current investigation indicated that the intervention had significant effects on expectations of substance use, use of resistance strategies, and use of gateway drugs (i.e., alcohol, cigarettes, and marijuana). More specifically, the Mexican American and Multicultural versions of the curriculum were found to positively affect alcohol, marijuana, and overall substance use (in desired directions). When compared to the control condition, the Mexican American version of the curriculum demonstrated significant results relating to cigarette use, self-efficacy, and intentions, while the Multicultural curriculum resulted in measures of resistance strategies and positive substance use expectancies.

**Durlak, J. A., Fuhrman, T., & Lampman, C. (1991). Effectiveness of cognitive-behavior therapy for maladjusting children: A meta-analysis. *Psychological Bulletin, 110*, 204-214.**

The purpose of this study was to identify factors which moderate the treatment effectiveness of cognitive behaviour therapy (CBT). The researchers also examined the relationship between cognitive development and CBT outcomes. In addition, the researchers sought to estimate the practical significance of therapeutic outcomes.

A literature search was conducted to locate relevant studies from 1970 through to 1987. Studies included in the analysis had to meet the following criteria: use of CBT treatment; CBT must have been compared to an equivalent control group; treated children must have some degree of behavioural or social maladjustment and the treatment had to target the modification of children's behavioural or social functioning; children had to be age 13 or younger; and, the child must have been the sole and direct recipient of CBT. Overall, 64 studies were included in the analysis.

The analysis showed that children's cognitive developmental level was the most important moderator of the effectiveness of CBT. The effect size for older children, those in the formal operations cognitive stage (ages 11 to 13), was almost twice the magnitude of the effect obtained for younger children (ages 5 to 11) in less advanced cognitive stages. The researchers explained the significance of this finding by noting that cognitive processes appear critical in determining responsiveness to CBT treatment; thus, children at more advanced levels of cognitive functioning who enter treatment benefit more from CBT than do children at less advanced levels. The implication of this finding is that CBT appears to be best suited to children ages 11 to 13, as they can be expected to show substantial gains from treatment regardless of their difficulties. In contrast, while younger children between the ages of 5 and 11 do benefit from treatment, their gains are only half that of preadolescents.



In terms of behavioural outcomes, the analysis showed that CBT produced a meaningful change in dysfunctional children's adjustment, although they had not yet reached normal limits. The failure to find a significant relationship between cognitive processes and behaviour means that the specific connection between cognitive functioning and adjustment is not known and the underlying mechanism of change in CBT remains unknown.

**Elliot, J., Prior, M., Merrigan, C., & Ballinger, K. (2002). Evaluation of a community intervention programme for preschool behaviour problems. *Journal of Paediatrics and Child Health*, 38, 41-50.**

The authors implemented and evaluated their community-based Early Intervention Project which targeted both children's pre-reading skills, as well as parental behaviour management skills. The project combined components of preschool behaviour management with pre-reading skills training in order to maximize healthy adjustment in the first 2 years of primary school, particularly for children at risk for conduct disorder (assessed by behaviour questionnaires completed by parents and teachers both before and after participating in the intervention).

Preschool teachers were trained by the researchers to implement the pre-reading skills program "Sound Foundations". The goal of this training program was to teach preschool children phonemic awareness. Children were assessed both before and after the program in the areas of phonemic awareness, rhyme skills, and letter knowledge.

A psychologist conducted the "Parenting Preschoolers Programme" over 6 sessions (4 group sessions and 2 individual sessions). The goals of this program were to help parents to increase their child's adaptive behaviour, as well as to successfully manage maladaptive behaviour. Parents completed measures related to child-rearing attitudes and family adjustment both before and after program participation.

Preschools from a geographical area of lower SES were randomly assigned to the early intervention program or control conditions. All parents of children at the participating preschools were offered both the pre-reading skills and parent training components. A total of 330 children and parents participated in the program and through parents' self-selection of interventions participants were divided into 1 of 4 treatment groups (parent intervention only, pre-reading training only, both interventions, or no intervention).

Results from post-tests and follow-up measures showed that the pre-reading skills training had no effect on the children's phonological awareness, reading skills, literacy level, or overall school performance. However, parent training was shown to reduce children's hyperactive/distractable behaviours. In addition, anxious-fearful behaviours were reduced by the combined intervention at post-test, although this effect was not maintained over time. There was no reduction in antisocial behaviour for the treatment groups.

**Feinfield, K. A., & Baker, B. L. (2004). Empirical support for a treatment program for families of young children with externalizing problems. *Journal of Clinical Child and Adolescent Psychology*, 33, 182-195.**

The authors evaluated the efficacy of Project TEAM, a multimodal group treatment program for parents of young children with externalizing problems. The project targeted both parenting skills and performance deficits through group parent training. In addition, the project ran child intervention groups simultaneously with parent groups. Lastly, the project included a parent-child "together time" during which families engaged in collaborative tasks, practiced new skills, and participated in relationship-building exercises.

Participants were families of children with disruptive behaviour problems recruited through fliers sent to elementary schools, day care centers, and community centers. For inclusion, children had to be between the ages of 4 and 8 and their primary problem had to be persistent and significant disruptive behaviour. Fifty-six families were randomly assigned to an immediate treatment or waitlist control group.

The researchers developed manuals with detailed curricula for both the parent and child groups. Each parent group was run by 2 doctoral students (clinical psychology) and each child group was run by one doctoral student (clinical psychology) and one leader experienced in child behaviour management. The sessions were 120 minutes in length and ran weekly for 9 weeks.

The first 30 minutes of every group meeting had parents and children working together on a joint activity. During this time, therapists modeled positive reinforcement, communication skills, perspective taking, emotion expression and acknowledgement, and anger management strategies. In the following 90 minutes, the parents and children participated in separate groups. The curriculum of the parent groups focused on: instruction in specific behaviour management techniques to reduce negative and increase positive behaviours; development of strategies for consistency; reduction of distorted cognitions and negative response patterns; building positive and mutually rewarding parent-child relationships; and, increasing confidence in parenting skills. Instruction techniques included role-plays, lectures, discussions, small group exercises, and homework (i.e., articles, summary sheets, and practice assignments). The child groups focused on problem-solving, anger management, and appropriate expression of emotions, and employed a token economy system to reinforce children for positive behaviours. After 9 weeks of group sessions, parents and children (in pairs) also participated in three 40-minute individual sessions. During these individual sessions with parents, leaders reviewed the application of behaviour management techniques at home and provided feedback, answered questions, and facilitated problem-solving.

Outcome was assessed through parent-completed child behaviour measures, teacher-completed child behaviour measures, parenting practices measures, and parenting attitudes and stress measures. At post-test, parental reports showed that children in the treatment condition had reduced problem behaviours relative to children in the control condition. Teachers did not report such improvement at post-test, but did report improvement in child behaviour at follow-up. Parents in the treatment group reported more consistent discipline and less negative and aggressive parenting following treatment. There was no change found on positive measures of parenting relative to control group parents. Parents of the treatment condition did demonstrate changes in parenting attitudes and stress when compared to waitlist controls. Specifically, treatment group parents reported improvements in efficacy and decreases in child-related stress. The researchers explained these improvements not by participation in the parent groups, but rather by changes in child behaviour.

**Flannery, D. J., Vazsonyi, A. T., Liau, A. K., Guo, S., Powell, K. E., Atha, H., et al. (2003). Initial behavior outcomes of the PeaceBuilders universal school-based violence prevention program. *Developmental Psychology*, 39, 292-308.**

PeaceBuilders is a universal school-based violence prevention program designed to improve elementary school children's social competence and reduce their aggressive behavior by teaching them simple rules and activities. The intervention curriculum is integrated into the everyday routine of school and was designed to “change characteristics of the setting (antecedents) that trigger aggressive, hostile behavior, and increase the daily frequency and salience of both live and symbolic prosocial models” (p. 294). The program rewards prosocial behaviors and provides strategies to reduce the reinforcement of negative behaviors and conflict. All program participants learn 5 simple rules: praise people; avoid put-downs; seek wise people as advisers and friends; notice and correct hurts; and, right wrongs.

The authors hypothesized that aggressive youth behaviour would be reduced by initiating prevention in early childhood and by increasing children's resilience and social competence. Eight elementary schools (grades kindergarten to grade 5) in Arizona were selected to participate on the basis of having high rates of juvenile arrests and histories of suspensions and expulsions. These 8 schools were matched into 4 pairs for the purposes of this study as one in each pair was exposed to the intervention for 2 years while the other paired school was exposed for 1 year of intervention in the second year of program implementation. Baseline data collection occurred prior to the intervention and was collected through individual 20-item, face-to-face interviews.

The results of the program evaluation indicated consistent behavior effects in the first year of implementation, as the intervention group of children in kindergarten to grade 2 were rated as significantly higher on social competence by their teachers than the control students. Furthermore, children in grades kindergarten through grade 5 reported themselves to have increased peace-building behaviours, while children in grades 3-5 who received the intervention throughout the 2-year trial demonstrated reductions in aggressive behavior. Overall, the children who received the 2 full years of the intervention were rated higher on social competence, prosocial behavior (for children in kindergarten to grade 2), and lower on aggression (grades 3-5) relative to those children who only received the intervention in the second year of implementation.

**Gallart, S. C., & Matthey, S. (2005). The effectiveness of the Group Triple P and the impact of the 4 telephone contacts. *Behavior Change*, 22, 71-80.**

The authors evaluated the effectiveness of the telephone contact component of the Group Triple P Parenting Program (Sanders & Markie-Dadds, 1996). The goals of the program were to promote positive parent-child relationships, encourage positive behaviour, teach new skills and behaviours, and help parents manage behaviour problems and developmental issues. The program was a family intervention for parents of children ages 2 to 12 who have, or are at-risk of having, behaviour problems.

The program consisted of 5 levels: providing parenting information; providing advice for specific parenting concerns; active skills training; application of parenting skills to a range of target behaviours; and, (as an option) intensive individual help. The program typically consisted of 4 weekly 2-hour face-to-face sessions that were followed up by 4 weekly 15 to 30 minute telephone support sessions. The group sessions included presentations, discussions, peer support, parenting videos, role-plays, peer modeling, and tailored homework assignments. The telephone calls were used to monitor client progress, reinforce the strategies discussed in the group sessions, and discuss any issues that may have arisen in the interim.

The materials for the program included the Facilitator's Kit for Group Triple P, which includes a leader's manual, overheads, and a participant's workbook, as well as a video called "Every Parent's Survival Guide".

In this study, 49 families were randomly assigned to 1 of 3 conditions: the usual Group Triple P Program (4 group sessions and 4 telephone calls); a modified Group Triple P Program (4 group sessions only); or, a waitlist control condition. Assessment measures were completed before the intervention and immediately following the intervention.

The results showed that there was a statistically significant main effect for Triple P (both typical and modified program) over the control group at the end of 8 weeks for the measures of child behaviour, but not for parenting style. The results did not indicate that the participants who received telephone calls in addition to the group acquired any gains above those who only participated in the group alone. However, the researchers argued that these calls may have affected the maintenance of gains, which could only be measured by a long-term follow-up.

**Greene, R. W., Ablon, J. S., Monuteaux, M. C., Goring, J. C., Henin, A., Raezer-Blakely, L., Edwards, G., Markey, J., & Rabbitt, S. (2004). Effectiveness of collaborative problem solving in affectively dysregulated children with oppositional-defiant disorder: Initial findings. *Journal of Consulting and Clinical Psychology*, 72, 1157-1164.**

The authors examined the efficacy of Collaborative Problem Solving (CPS), a cognitive-behavioral model of intervention, versus Parent Training (PT), in affectively dysregulated (subthreshold features of severe major depression or bipolar disorder) children with oppositional-defiant disorder (ODD).

Participants, 47 children between the ages of 4 and 12 years who had been clinically referred to an outpatient mental health clinic, were randomly assigned to 2 CPS conditions or 1 PT condition. Each session was conducted by 2 experienced doctoral-level clinical psychologists; those conducting PT identified behaviour therapy as their primary therapeutic modality and those conducting CPS identified cognitive-behavioural therapy as their primary therapeutic modality.

Families assigned to the CPS condition received a standard, but individualized, psychosocial treatment designed by Greene and colleagues (2002; 2003), which lasted between 7 and 16 weeks. The goals of the treatment included: understanding the cognitive factors contributing to aggressive outbursts (emotion regulation, frustration tolerance, problem-solving, and adaptability skills); awareness of strategies for handling unmet expectations (imposition of adult will, CPS, and removal of expectation); recognizing the impact of these strategies on adult-child interactions; and, becoming adept at using CPS to resolve disagreements collaboratively with children, thus reducing the likelihood of aggressive outbursts.

Families assigned to the PT condition received Barkley's (1997) 10-week behaviour management program. PT included the following components: educating parents about the causes of children's defiant behaviour; instructing parents on positive attention through the use of special time; training parents in the use of attending skills to increase compliance; increasing the effectiveness of parental commands; implementing a contingency management program; employing the time-out procedure; managing children's behaviour in public; and, using a daily school-home report.

Results indicated that CPS had significant improvements equal or superior to PT across multiple domains of functioning, multiple informants, and several data points. Both the CPS and PT conditions produced clinically significant improvement in oppositional-defiant behaviours, with no significant differences found between groups. Large effect sizes were found for both treatments from pre- to post-treatment in terms of oppositional-defiant behaviours; CPS also had a large effect size from post-treatment to follow-up, while PT had a moderate effect size. CPS also produced borderline significant improvement in the mood domain.

**Hawkins, J. D., Kosterman, R., Catalano, R. F., Hill, K. G., & Abbott, R. D. (2005). Promoting positive adult functioning through social development intervention in childhood. *Archives of Pediatric & Adolescent Medicine*, 159, 25-32.**

The authors examined the long-term effects of the Seattle Social Development Project designed to promote positive adult functioning and prevent mental health problems, crime, and substance abuse. Participants were assigned to a 6-year early intervention, a 2-year late intervention, a parent training only group (Preparing for the Drug Free Years), or a no-treatment control condition.

The intervention (see Hawkins et al., 1999; Lonczak et al., 2002 for more detailed descriptions of the intervention) included 3 components: teacher training in classroom instruction and management (proactive classroom management, interactive teaching, and cooperative learning); child social and emotional skill development (interpersonal problem-solving skills and refusal skills); and, parent training (behaviour management skills, academic support skills, and skills to reduce risks for drug use).

The current article presented follow-up data collected when participants were 21 years of age, 9 years after the conclusion of the intervention. Outcome measures included both participants' court records, as well as self-report in the areas of positive functioning in school or work, emotional and mental health, and crime and substance abuse. In regards to positive functioning in school or work, the full-intervention group demonstrated significantly better functioning in school or at work across 7 of the 8 outcomes and the late-intervention group demonstrated significantly better functioning in school or work across 3 of the 8 outcomes, when compared to the no-treatment controls. In terms of emotional and mental health, when compared to control group participants, participants of the full-intervention reported better emotion regulation, fewer symptoms of social anxiety, and fewer thoughts of suicide, while late-intervention participants reported fewer thoughts of suicide and fewer met the criteria for a depressive episode. The

examination of crime variables showed that full-intervention participants were less likely to be involved in crime than control group participants. No significant differences were found between groups when substance use variables were examined. Overall, the full-intervention group had a significant effect across 22 dependent measures, whereas the late-intervention group indicated a marginally non-significant effect when compared to the no-treatment control group.

**Hemphill, S. A., & Littlefield, L. (2001). Evaluation of a short-term group therapy program for children with behavior problems and their parents. *Behavior Research and Therapy*, 39, 823-841.**

The authors evaluated “Exploring Together” (ET), a short-term, cognitive behavioural program. This program was a multi-component treatment targeting school-aged children (6-14 years old who exhibited externalizing problems) and their parents.

One of the components of ET was a children’s group, which focused on anger management, and social and problem-solving skills training. The children’s group employed cognitive behavioural techniques such as verbal self-instruction in social situations, performance evaluation, and self-reinforcement. The children’s group also employed behavioural techniques such as skills modeling, behavioural rehearsal, and positive reinforcement. A second component of ET was a parents’ group, which focused on parenting skills training, and dealing with parents’ personal, relationship, and family-of-origin issues. The parents’ group used therapeutic techniques of cognitive behavioural therapy, family therapy, and group processes. The third component of ET was a combined parents’ and children’s group to improve parent-child interactions, communication, and problem-solving. In addition, ET included 2 partner meetings in order to involve the non-participating parent in the program. Lastly, ET included 2 teacher meetings to inform the children’s teachers about ET and to encourage implementation of ET child management procedures in the classroom.

ET was conducted in various community agencies and schools. Professionals with a background in psychology, social work, teaching, or welfare work from these agencies were trained in ET. Each session was facilitated by 2 leaders, at least one having training in ET. Weekly ET sessions were conducted with groups of 4 to 8 participants for 8-10 weeks. Each session lasted one and a half hours (one hour for simultaneously run parents’ and children’s groups and half an hour for the combined parent-child group).

The current study compared treatment outcomes with wait-list control outcomes. The results at the conclusion of the treatment showed a reduction in ET children’s externalizing and internalizing behaviours and an improvement in children’s social skills at home, relative to control group children, but these results were not generalized to school. Results at 6- and 12-month follow-up showed that the ET children’s reduction in behaviour problems and improvements of social skills at home were maintained.

**Ialongo, N., Poduska, J., Werthamer, L., & Kellam, S. (2001). The distal impact of two first-grade preventive interventions on conduct problems and disorder in early adolescence. *Journal of Emotional and Behavioral Disorders*, 9, 146-160.**

The authors revised 2 preventive intervention programs, originally developed by the Johns Hopkins University Prevention Intervention Research Center in collaboration with the Baltimore City Department of Education, which had been developed to target the early antecedents of substance abuse, depression, and antisocial behavior. The first of the 2 revised interventions is comprised of a classroom-based intervention, designed to focus on poor achievement and aggressive and shy behavior at school. The second revised intervention involves a universal family-school partnership, designed and implemented to enhance family-school communication and parenting practices associated with learning and behavior, and also targets poor achievement and aggressive and shy behaviors. The premise was that to reduce later risk for substance abuse, depression, and antisocial behavior, there would be a need to target both early aggression and achievement.



The current study evaluated the 2 theory-based universal first grade preventive interventions. The classroom-based intervention attempted to make behavioral changes through the enhancement of classroom curricula and teacher instruction, and behavior management practices. The second intervention, the family-school intervention, proposed to reduce early risk behaviors by enhancing parents' behavior management skills and improving parent-teacher collaboration. It was hypothesized that the 2 interventions would “reduce the early antecedent risk behaviors of aggressive and shy behaviors... by improving teachers' and parents' disciplinary practices and by enhancing parent-teacher communication [in the family-school partnership]” (p. 147). It was also hypothesized that early antecedent risk behaviors would lower the risk for more serious forms of antisocial behavior in adolescence and young adulthood.

Participating in the study were 678 first graders in 9 Baltimore city public elementary schools and their families. Three first-grade classrooms in each of the 9 schools were randomly assigned to 1 of the 2 intervention conditions or a control condition. The intervention was administered over the first-grade year, following a pre-test assessment. Immediate intervention impact was assessed in the spring of first and second grades. The impact of the interventions was examined 5 years later in the spring of sixth grade. The results indicated that relative to the control group, the children who received the classroom intervention were significantly less likely to have a diagnosis of conduct disorder, to have been suspended from school, and to have received, or be in need of, mental health services. Furthermore, children in the classroom and family-school intervention were observed to exhibit lower levels of conduct disorder than the children in the control group. Overall, the authors concluded that the classroom intervention was more effective than the family-school intervention in reducing the prevalence of conduct problems, and in reducing the need and utilization of mental health services.

**Kamps, D. M., Tankersley, M., & Ellis, C. (2000). Social skills interventions for young at-risk students: A 2-year follow-up study. *Behavioral Disorders, 25*, 310-324.**

The authors of the current study conducted a 2-year study, to “evaluate the effects of social skills intervention on the behavior of young children displaying aggressive and antisocial behaviors” (p. 311). The study was designed to test the longitudinal effects of a school-based and a family-based intervention. The school-based intervention was designed to improve the students' social competence and included social skills instruction with peers, teacher assistance in classroom management, and peer tutoring. The family-based component included parent training in behavior management strategies, positive parent-child relationships, social skills building and networking with community agencies.

In general, children selected for participation in the study were initially identified by their classroom teachers as children exhibiting particular behavioral difficulties in the classroom. In total, 31 children participated in the intervention over the duration of its implementation and follow-up. A second group of students considered to be at risk were selected to be in the comparison group ( $n = 18$ ). The students' classes were randomly assigned to the experimental or control conditions, as the intervention were implemented in group format.

The school-based social skills interventions were designed to influence the children's behaviors directly through the promotion of positive interactions, including prosocial skills, compliance and self-control, and to reduce contributing variables (i.e., aggression and antisocial behaviors). There was also a peer-tutoring component of the school-based intervention, where the participating students were given a structure for sustained positive interactions with peers and for practicing desirable academic behaviors. The family-based intervention consisted of a parent support program consisting of parent training sessions and parent-child group activities. Seven 2-hour formal training sessions were conducted over the 2 years, for the families of the participants, and were designed to assist with parenting and to provide at-home support for the social skills provided through the school.

Overall, the social skills interventions appeared to have a “favorable impact for young children with behavioural problems in this longitudinal study” (p. 320). Students participating in the intervention were observed to display higher levels of positive peer interaction and fewer inappropriate behaviors in the classroom, as compared to the control group. Furthermore, children who participated in the intervention were reported to have improved compliance, spent more time engaged in positive interactions with peers during free time and play groups, and had overall improved school performance.

**Lacourse, E., Cote, S., Nagin, D. S., Vitaro, F., Brendgen, M., & Tremblay, R. E. (2002). A longitudinal – experimental approach to testing theories of antisocial behavior development. *Development and Psychopathology, 14*, 909-924.**

The authors evaluated a randomized multimodal preventative intervention of antisocial behaviour development. The program targeted parental management skills as well as children’s social-cognitive skills. The intervention had been previously shown to have a significant impact on parental supervision, disruptive behaviour, and association with deviant peers (Vitaro et al., 1999, 2001).

The prevention program was implemented when the children were between the ages of 7 and 9. Social skills training was conducted at school in small groups of 2 target boys and 4 to 6 teacher-identified prosocial boys. Four professionals ran the groups (2 child care workers, 1 social worker, and 1 psychologist). Groups occurred in 45 minute, bi-weekly sessions for 6 months of the school year, over a 2-year period. The social-cognitive component of the program was designed to teach the boys alternate and more appropriate behaviours through social skills training. Verbal instruction, positive reinforcement, modeling, and behavioural rehearsal were used to teach specific skills.

The parenting skills component of the program was intended to promote the use of reinforcement contingencies and sustained supervision, and was adapted from the program developed by the Oregon Social Learning Center (Patterson, Reid, Jones & Conger, 1975). The same 4 professionals conducted home sessions in each of the target boys’ homes. The number of sessions was dependent on parents’ motivation and how well they had mastered the skills. The average number of sessions was 17. Parents were first taught to recognize, observe, and record their children’s problem behaviours. Next, parents were taught to define appropriate behaviours and set clear goals for their children. Then, parents were taught to use verbal and material reinforcement systematically and contingently to promote their children’s acquisition of appropriate behaviours. Subsequently, parents were taught to punish inappropriate behaviour with short time-out periods or by using response-cost strategies. Finally, parents were taught problem-solving and negotiation strategies to manage familial crises. Throughout, parents were encouraged to supervise their children’s schoolwork and monitor their behaviour outside the home.

Participants were part of a larger study begun in 1984 when the children were in kindergarten. At this time, kindergarten teachers from participating schools rated boys’ disruptiveness on a scale developed by the researchers. Boys receiving high scores on the scale were randomly assigned to an intervention group, a no treatment group, or a sensitization contact group (to control for the possible influence of contact with researchers and study participation). Analyses compared the intervention group to the control group (collapsed no treatment and sensitization group). For the present paper, the sample consisted of 909 males who had completed a self-report antisocial behaviour questionnaire between the ages of 11 and 17.

Results showed that boys from the intervention were more likely to follow the lowest level antisocial trajectory and less likely to follow the highest level antisocial trajectory, than boys from the control group. In addition, when compared to low-risk boys (those who did not have elevated ratings of disruptiveness in kindergarten), boys from the intervention group did not differ in the probability of following specific physical aggression trajectories.

**Levenstein, P., Levenstein, S., Shiminski, J. A., & Stolzberg, J. E. (1998). Long-term impact of a verbal interaction program for at-risk toddlers: An exploratory study of high school outcomes in a replication of the mother-child home program. *Journal of Applied Developmental Psychology, 19*, 267-285.**

The researchers replicated the Mother-Child Home Program (MCHP), a home-based parent-toddler verbal interaction method for low-income families designed to increase children's early cognitive growth. Home visitors delivered attractive toys and books to homes and demonstrated to parents playful ways of engaging in positive verbal interaction with their children. The replication, named the Parent-Child Home Program (PCHP), followed the MCHP method. Specifically, the PCHP conducted 46 half-hour home sessions over 7 months of 2 consecutive years. In addition, the PCHP also replicated the curricula of the MCHP.

The long-term goal of the home-based cognitive intervention was to improve at-risk children's chances of graduating from high school. The present study sought to determine the effectiveness of the PCHP in attaining this goal. This was achieved by performing a retrospective study of 5 cohorts who participated in the PCHP 26 years after their involvement in the study. The analysis compared 3 groups of children: those who had completed the 2 year PCHP; those who had participated in less than 2 years of the PCHP; and, those who had demonstrated the risk factors for eligibility but had been randomly assigned to non-program status.

Results showed that of the 123 participating students who had reached the end of their high school careers at the time of analysis, 30 students had dropped out of school, 87 students had graduated from high school, and the remaining 6 students were still in school. There were significantly higher rates of high school graduation (84.1%) and lower rates of dropping out of high school (15.7%) among students who had completed the full 2 years of the PCHP program when compared to the control group (53.9% graduated, 40.0% dropped out). The graduation and drop out rates of the group who had partial involvement in the PCHP fell in between the full intervention and no intervention groups. The graduation and drop out rates of those fully participating in the PCHP were comparable to those of middle class students and exceeded those of local and national disadvantaged comparison groups.

**McKee, T. E., Harvey, E., Danforth, J. S., Ulaszek, W. R., & Friedman, J. L. (2004). The relation between parental coping styles and parent-child interactions and after treatment for children with ADHD and oppositional behavior. *Journal of Child and Adolescent Psychology, 33*, 158-168.**

The authors described results from a parent-training program named the Behavior Management Flow Chart (Danforth, 1998a). This parent-training program demonstrated effectiveness in improving parenting behaviour and reducing disruptive child behaviour in families with children with ADHD and other behaviour problems. The program was designed to manage child misbehaviour. The flow chart synthesized behaviour management research into a visual depiction of specific parental actions, presented in a forward chaining manner. The program also used modeling and role-playing with feedback as teaching techniques. The program consisted of 8 weekly sessions and parents were instructed to practice the skills at home during the week. There were 5 groups of 9-10 families. Clinical psychologists or doctoral students in clinical psychology conducted these groups. Measures of parental coping style, parental discipline, parental depression, and child psychopathology were completed by parents, and audiotaped assessments of parenting behaviour and child behaviour were analyzed by the researchers. Results for mothers prior to parent training showed that use of maladaptive coping styles was related to more lax and over-reactive discipline, more coercive parenting, and more child misbehaviour. When pretreatment variables were controlled for, no significant relations were found for mothers following parent training. Results for fathers prior to and after-parent training showed that use of maladaptive coping styles was related to lax discipline. The children of fathers who reported less support seeking and adaptive coping showed the most improvement in behaviour, contrary to predictions.



**Mills, P. E., Cole, K. N., Jenkins, J. R., & Dale, P. S. (2002). Early exposure to direct instruction and subsequent juvenile delinquency: A prospective examination. *Exceptional Children*, 69, 85-96.**

The authors described the results of a 15-year follow-up of an intervention involving children between the ages of 3 and 7 who were eligible for special education services based on developmental delays or medical diagnoses. Each year for 4 years new students were randomly assigned to 1 of 2 interventions: either Direct Instruction (DI); or, Mediated Learning (ML). DI is derived from task analysis of academic skills. It focuses on math, language, and reading curriculum, and is based on the educational philosophy of Siegfried Engelmann. The DI teacher is directed, maintains a fast pace, uses a highly structured presentation of material, and provides students with frequent opportunities for response, reinforcement, or correction. ML emphasizes the development and generalization of cognitive processes. The curriculum is organized around comparison, classification, perspective changing, and sequencing, and is based on the theory of Vygotsky and Feuerstein. The ML teacher interprets the environment according to the students' needs, provides opportunities for children to select materials and activities, and encourages child initiation of interactions. Two hundred and six children participated in the programs for an average of 1.65 years. These children attended classes in a university laboratory school for 2 hours per day, 5 days a week for 180 school days. There were 3 preschool classes for each program per year, with 12 students in each class. Each classroom was staffed with a head teacher who held a Master's degree in Special Education and 1 assistant teacher, as well as up to 2 additional staff. Previous publications by the authors (Coles et al., 1993; Mills et al., 1995) reported that graduates of the 2 programs did not differ on cognitive, language, or academic measures at the end of 1 year of intervention or at follow-up testing at age nine. However, children who performed higher on cognitive and language measures at pre-test showed relatively larger gains from DI than ML. Conversely, children who performed lower on pre-tests demonstrated relatively larger gains from ML than DI. These results endured through both testing periods. At the 15-year time point, 171 intervention students completed the *Juvenile Delinquency Self-report Questionnaire*. No differences were found for total number of delinquent acts, personal violence, property damage, stealing, drug abuse, or status offences. However, significant gender effects were found for total number of delinquent acts, personal violence, property damage, and stealing, with males reporting higher delinquency levels than females. There were also significant ethnicity effects for total number of delinquent acts and personal violence, with African American students reporting a higher level of delinquent acts than other ethnicities. In addition, there were significant program x ethnicity interactions for total number of delinquent acts and stealing, with African American students in DI reporting lower delinquent acts than African American students in ML.

**Robinson, T. R., Smith, S. W., Miller, M. D., & Brownell, M. T. (1999). Cognitive behavior modification of hyperactivity-impulsivity and aggression: A meta-analysis of school-based studies. *Journal of Educational Psychology*, 91, 195-203.**

The authors of this article investigated the use of cognitive behaviour modification (CBM) in schools to reduce hyperactive-impulsive and aggressive behaviours in children and adolescents. The purpose of the investigation was to better understand CBM and its effects on students' behaviours, through a meta-analysis. School-based CBM interventions were chosen as the premise of the study because, the authors reasoned, classroom teachers need behavioural change strategies that can efficiently be incorporated into daily instructional routines to mitigate the negative effects of deviant classroom behaviour. Through the meta-analysis, the authors wanted to better understand whether CB interventions effectively decrease hyperactivity and aggression in children and youth, and whether CB interventions help students maintain self-control following the intervention. In order to determine the effectiveness of CBM interventions, the authors examined the overall outcomes of CB interventions on children and adolescents who exhibit hyperactivity-impulsivity and aggression, and identified strengths and weaknesses of the methodology used in CBM investigations.

In total, 23 studies were located and retrieved for inclusion in the meta-analysis that fit the following inclusion criteria: the group design was experimental or quasi-experimental; the researchers used dependent measures of hyperactivity, impulsivity, aggression, or a combination of the measures; the selected school-aged children (kindergarten through to grade 12) were non-psychotic; and in each study the treatment included a cognitive-behavioural intervention designed to assist children with increasing self-control.

The results of the current meta-analysis demonstrated strong support for the use of CBM interventions to reduce hyperactive-impulsive and aggressive behaviours in children and adolescents. Moreover, based upon the analyses, the authors determined that CBM enables students to control their behaviour and CB interventions provide lasting results in reducing inappropriate and maladaptive behavior after the cessation of treatment.

**Shelton, T. L., Barkley, R. A., Crosswait, C., Moorehouse, M., Fletcher, K., Barrett, S., Jenkins, L., & Metevia, L. (2000). Multimethod psychoeducational intervention for preschool children with disruptive behaviour: Two-year post-treatment follow-up. *Journal of Abnormal Child Psychology*, 28, 253-266.**

The authors evaluated an early intervention program, called the Kindergarten Project, targeting preschool children at high risk for high levels of disruptive behaviour. Children from an urban school district of primarily low-income families were screened for significant levels of externalizing behaviours. Children were identified as having symptoms of ADHD as well as ODD or CD using a parent rating scale. Identified children were randomly assigned to 1 of 4 treatment groups: no treatment; parent training only; a specially designed behavioural treatment classroom; and, a combined parent and classroom intervention. Treatments lasted the entire kindergarten year. The parent-training program was 10 weeks in length (see Barkley, 1987, 1997). There were 2 treatment classrooms which included 14-16 children identified as exhibiting disruptive behaviour. Each classroom had a teacher and a teacher's aide, as well as a mater teacher experienced in behavioural treatment approaches who spent a half-day working in each classroom. The behavioural interventions used in the classrooms included token systems, time out, response cost, social skills training, and self-control instruction. These interventions were modelled after those used at the University of California – Irvine Special School for ADHD Children developed by James Swanson, Ph.D. and colleagues. In addition, these classrooms had a more accelerated curriculum with more emphasis on early academic skills. A previous paper by the authors (Barkley et al., 1999) reported the immediate post-treatment findings that there were no significant treatment effects from the parent training program; however, children in the treatment classroom demonstrated gains in behavioural and social domains when compared with those children in the no treatment condition. Due to these results, the follow-up results were analyzed by comparing the 2 groups of children who had received the classroom intervention and the 2 groups who had not received the classroom intervention. The measures employed at follow-up included: a clinical diagnostic interview; parent and teacher ratings of child behaviour; psychological testing; and, behavioural observations of disruptive behaviour. The authors reported that none of the initial post-treatment gains for those children who participated in the kindergarten classroom intervention persisted at the 2-year follow-up. Both groups, treated and untreated, did move closer to normal in some respects due to maturation or time. However, both groups continued to have behavioural problems at home and school, externalizing symptoms, home aggression, and academic difficulties.

**Shelton, T. L., Woods, J. E., Williford, A. P., Dobbins, T. R., & Neal, J. M. (2001). *System of care interventions for hard to manage preschoolers in Head Start*. 14<sup>th</sup> Annual Conference Proceedings. A system of care for children's mental health: Expanding the research base. Tampa, FL.**

The authors presented results from Project Mastery, an examination of the effectiveness of a system of care approach with Head Start children at risk for serious behavioural difficulties. This project provided community-based interventions based on the Kindergarten Project (Shelton et al., 2000) and Carolyn Webster-Stratton's *Parents, Teachers and Children's Videotape Series* (2001). Forty-one preschoolers with severe difficulties (aggression, hyperactivity, impulsivity, and/or inattention) participated in the program. Twenty-eight of these children comprised the intervention group, while the remaining 13 formed an

assessment control group. A baseline assessment, and interviews with families and teachers regarding goals for the child, formed the basis upon which individualized intervention plans were developed. Interventions included: individual and classroom based behaviour management; onsite consultation and teacher training; social skills training; parent behaviour management training; family support; and, coordination of formal and informal community-based services. Specific interventions were selected if they had been empirically supported with diverse groups and were able to be tailored to meet the goals set out by the family and teachers. All services were delivered at the Head Start Centre. Post-test measures were administered at the end of the school year and assessed child strengths and needs, parenting and family support, and quality of family/professional collaboration/service collaboration. Parent reports of disruptive behaviour problems decreased for children in the intervention group, while those in the control group remained stable or became worse over time. In addition, teachers in the intervention classrooms reported feeling significantly more confident, more likely to promote parental involvement, more likely to offer advice on parenting skills, and more likely to see the value in the use of positive methods of encouraging behavioural competence. No significant group differences were found on measures of parenting stress, parenting competence, or family support. However, parents who attended the parent training sessions reported increased parenting competence relative to those who did not attend. Families did report satisfaction with the services received.

**Sherman, L. W., Gottfredson, D. C., MacKenzie, D. L., Eck, J., Reuter, P., & Bushway, S. D. (1998). *Preventing crime: What works, what doesn't, what's promising*. Research in Brief, National Institute of Justice: Washington, DC.**

The authors reviewed crime prevention programs and developed a ranking system to rate the studies examined. Strong research supporting efficacy was found for the following types of programs: home visits for infants by nurses and professionals; preschool classes with weekly home visits by preschool teachers; family therapy and parent training for delinquent and at-risk adolescents; organization development for school innovations; communication and reinforcement of clear and consistent norms in schools; teaching social competence; teaching thinking skills to high-risk youth; decreasing nuisance of landlords; extra police patrols; monitoring and incarceration of repeat offenders; on-scene arrests for domestic abuse; risk-focused rehabilitation programs; and, therapeutic community treatment programs for drug users in prison. Programs identified as ineffective include: individual and peer counselling of students; the Drug Abuse Resistance Education Program; and, some school-based leisure time enrichment programs. Programs listed as promising included: training in thinking skills; and, improved classroom management. The report was restricted to listing the programs and did not provide any additional information.

**Stickle, T. R., & Terranova, B. S. (2003). *Program evaluation of the "In the Know" substance abuse prevention curriculum*.**

The *In the Know* program was designed to provide information on the effects of alcohol, tobacco, marijuana, hallucinogens, and other drugs, to middle and high school students through video and written-format presentations. This prevention curriculum targets preadolescent and adolescent students at high-risk times, prior to and during a time when their attitudes and knowledge are still forming, and when substance use typically escalates dramatically. It is believed that by targeting youth at these critical and highly influential times, the prevention program will be more effective than when presented prior to or after attitudes and knowledge are formed.

The purpose of the evaluating the *In the Know* program was to determine whether or not the intervention successfully increases knowledge about drug and alcohol effects and reduces positive and increased negative expectancies related to youth's use of high prevalence substances (i.e., alcohol, tobacco, marijuana, and hallucinogens). Six schools in southeastern Louisiana participated in the study. The intervention was randomized within the 6 schools. Pre- and post-intervention information was acquired through questionnaires.

The results indicated no significant differences between intervention and control groups on the pre-test (age, grade, gender ethnicity, drug and alcohol knowledge scores or drug and alcohol expectancy scores). However, the intervention group demonstrated significantly higher post-test mean scores than the control groups on knowledge of drug and alcohol effects and showed a significant decrease in positive expectancies for alcohol and marijuana use from pre- and post-test scores. The intervention group also showed a significant decrease in positive expectancies for hallucinogen use and a significant increase in negative expectancies from pre- to post-test. The authors concluded that overall, “the results of the study suggest the ‘In the Know’ substance abuse prevention curriculum was effective in changing the middle and high school students’ knowledge of the effects of drugs and alcohol, at decreasing expectancies for positive effects, and increasing expectancies of negative effects of substance use” (p. 6).

**Strain, P. S., & Timm, M. A. (2001). Remediation and prevention of aggression: An evaluation of the regional intervention program over a quarter century. *Behavioral Disorders, 26*, 297-313.**

The Regional Intervention Program (RIP) was established at the George Peabody College of Vanderbilt University in Nashville, Tennessee, in 1969. The program was designed to provide services to families with children under the age of 36 months who had autism or other serious behavioral and/or development concerns. Families receiving services participate in 2 phases of the program – treatment and payback.

In the treatment phase, parents work with their own children at RIP, at home, and in the community and participate in 3 modules. The first is the Behavioral Skills Training module, designed to address behavioural concerns such as noncompliance, aggression, destructiveness, tantrums and self-injury. It is used to teach parents techniques such as shaping, differential reinforcement, extinction, and timeout procedures. The second module is Social Skills Training, which addresses concerns regarding peer interactions. The lessons are individually designed to each child and they are used to teach children the use of prosocial behaviors with peers, including appropriate modes of communication, problem-solving, sharing, mutual assistance, and conflict resolution. The third module is the Preschool Classroom which provides the participating children the opportunity to acquire or refine the skills necessary to function effectively within a structured classroom setting, with the intent that the skills will generalize to help the children when placed in their community classroom. The payback feature of the RIP occurs once the participating parents complete the treatment phase. The parents then provide assistance to the newer families who are still in active treatment.

The current study summarizes the procedures and results of a 2-phase evaluation of the RIP intervention. Phase I of the evaluation involved 40 families that participated in the RIP between 1969 and 1978 and were randomly selected for participation in the study from all case files of families who had completed all stages of intervention. The children and the families in this cohort were observed in both the home and the school, when the children were enrolled in elementary and middle school (i.e., 3-9 years after completion of the RIP program). In Phase II of this long-term follow-up, 23 additional families were recruited for participation in only the home-based observation component (as was conducted in Phase I). These 23 families had participated in the RIP program from 1986 to 1996. The authors of the current study stated that this replication cohort was an important test of the RIP treatments, as there was a 100% turnover in professional and family staff since the Phase I treatment group.

The results of the 2 phases of the RIP program evaluation indicated that the RIP program produces effective and lasting results. The authors state the evaluation of the RIP program demonstrated that:

the initial treatment experience yields predictable and reliable outcomes for adults and children, outcomes for children and adults maintain for periods ranging from 3 to 9 years, based on direct observational assessments in the school and home setting, these immediate follow-up results are strongly influence by early enrolment in the program, with children who began at the earliest ages experiencing more favorable outcomes, the 3 to 9 year follow-up results for home-based observation

are replicable across clients who received treatment from an entirely different intervention staff, adolescent and adult outcomes indicate long-term maintenance of treatment gains, and former adult consumers consider the RIP intervention strategies to be highly acceptable. (p. 309)

**The Conduct Problems Prevention Research Group. (2002). Evaluation of the first 3 years of the Fast Track prevention trial with children at high risk for adolescent conduct problems. *Journal of Abnormal Child Psychology*, 30, 19-35.**

Fast Track is a conduct-problem prevention program designed and based upon developmental theory and longitudinal research that suggests serious antisocial behavior is persistent and develops from an interaction and combination of family, child, and community risk factors across early childhood through to adolescence. The Fast Track curriculum includes components that address classroom and school risk factors, and family risk factors. The program is designed to be delivered from the 1<sup>st</sup> grade through the 10<sup>th</sup> grade with heavier concentration in the first 2 years of elementary school, working under the assumption that improvements between behaviours and competencies in the home and the school will increase over time and antisocial behaviours of children will decrease with Fast Track participation.

Schools within 4 geographic sites were selected for participant recruitment on the basis of the crime and poverty statistics of the neighborhoods in which the schools were located. Children were recruited in 3 cohorts and were screened for inclusion in the current study. In all, 891 children were selected for participation and randomly assigned to intervention and control conditions. Beginning when the children were in the first grade, the selected children and their families in the intervention condition were asked to participate in a combination of social skills and anger-control training, academic tutoring, parent training, and home visits. The multiyear classroom program was delivered within the schools over a three-year period.

At the end of the children's third grade, the evaluation of the intervention program was conducted. The results indicate that the Fast Track Program was successful at reducing if not eliminating participating children's behaviours indicative of serious conduct problems, relative to the children in the control condition. These results were consistent across observations of the children at school and at home. Positive effects were also noted for participating parents who reported changes in parenting abilities.

**Wasserman, G. A., Miller, L. S., & Cothorn, L. (2000). *Prevention of Serious and Violent Juvenile Offending*. Rockville, MD: Juvenile Justice Clearinghouse.**

The authors outline effective family-, parent-, and child-focused approaches to prevention of serious and violent juvenile offending. They also provide examples of well-designed intervention programs focusing on 3 developmental periods: preschool age, elementary school age, and adolescence.

Three programs targeting preschool age children and later antisocial outcomes were discussed. The Syracuse University Family Development Research Project (Lally, Mangione & Honig, 1988) provided educational, nutritional, health, safety, and human services resources through home visits and child care to low-income families. Program involvement was found to decrease involvement with the juvenile justice system (when compared to control group children). The Yale Child Welfare Project (Provence & Naylor, 1983) provided pre- and post-natal services to low-income pregnant women. At a 10-year follow-up, children in the control group had better school attendance and less antisocial behaviour than children in the control group. The Houston Parent Child Development Program (Johnson & Walker, 1987) provided home visits, parenting classes, and child care for low-income families. Results from the 5- to 8-year follow-up found children in the intervention group to be less obstinate, hostile, and aggressive than children in the control group.

Two programs targeting elementary school children and later antisocial outcomes were discussed. The Seattle Social Development Project (Hawkins et al., 1999) offered parent management training, social competency training, and academic skills training in order to reduce involvement with antisocial peers and aggressive behaviour, and to increase attachment to school and family. At a six-year follow-up, the



children in the intervention group reported lower rates of violent criminal behaviour, misbehaviour in school, heavy drinking, sexual intercourse, and pregnancy and higher levels of academic achievement. The FAST Track Program (Tremblay et al., 1995) was a 2-year program for disruptive boys involving parent management training and social competency training which found lower rates of delinquency in treated boys at a 6-year follow-up.

Three programs targeting adolescents and later antisocial outcomes were discussed. Project STATUS (Gottfredson & Gottfredson, 1992) implemented a law-related and moral development program through field trips and structured role-play. Students in the intervention group reported less delinquency and drug use, and higher self-esteem, grades, and graduation rates. Self-Enhancement Inc. (Gabriel, 1996), a violence prevention program, sought to enhance self-control, self-efficacy, social competence, and social bonding through field trips, conflict resolution, and student-led anti-violence campaigns. After one year of intervention, students reported less fighting and weapon carrying. Multisystemic therapy (Henggler et al., 1996) with juvenile offending adolescents combined family therapy, parent management techniques, problem-focused interventions in peer and school settings. Treated adolescents were less likely to be rearrested and spent fewer days in incarceration than control adolescents.

**Webster-Stratton, C., & Reid, M. J. (2003). Treating conduct problems and strengthening social and emotional competence in young children: The Dina Dinosaur treatment program. *Journal of Emotional and Behavioral Disorders*, 11, 130-143.**

The Dina Dinosaur Social, Emotional and Problem Solving Child Training Program (DDTP) was developed for children with conduct problems, but may also be used to address comorbid problems such as attention problems and peer rejection. The DDTP treatment program was designed specifically to teach young children (ages 4 to 8 years) essential skills such as emotional literacy, empathy or perspective taking, friendship and communication skills, anger management, interpersonal problem-solving, school rules and how to be successful at school. The premise of the program is that the aforementioned skills will target the particular types of social, emotional, and cognitive deficits of children who exhibit conduct disorder.

The DDTP curriculum consists of 18 to 22 weekly 2-hour lessons and can be delivered by mental health counsellors or therapists or by early childhood specialists who have experience treating children with conduct disorders or early-onset behaviour problems. The intervention curriculum utilizes developmentally appropriate teaching methods for young children. It includes: puppet and videotape modeling, coaching and reinforcement during structured practice activities, visual imagery, fantasy play, and live role plays. For generalization, teachers and parents are asked to help the children's success with the program by reinforcing specific skills at home or at school. The DDTP curriculum consists of 5 complementary programs.

The current article reviews 2 randomized trials with the DDTP approach. In the first randomized trial, 97 clinic-referred children ages 4-7 years and their families were randomly assigned to one of 4 groups: child training only (CT), parent training only (PT), combined child and parent training (PT+CT) or wait list control (WLC). Families on the waitlist control group waited 8 to 9 months and then were randomly assigned to one of the 3 intervention conditions. All families were assessed at baseline, 2 months after intervention was completed, and 1 and 2 years post-treatment.

The results indicated that CT+PT training was more effective than PT alone and that all 3 intervention groups demonstrated greater improvements than the WLC group. Families with the CT only intervention reported significant improvements in peer interactions and were significantly more positive in their social interactions with peers than the families with only PT or WCL. Parents who received the intervention had significantly more positive parenting behaviours and reported fewer behaviour problems than the control families. One year later, all significant changes were maintained.

The second evaluation of the intervention included a teacher-training component, targeting specific classroom risk factors. For this evaluation, 159 clinic-referred families with children (ages 4 to 8 years) who had been diagnosed with early-onset ODD/CD participated in the DDTP. For this evaluation, families were either assigned to a child only training (CT), a combined child with teacher training (CT+TT), or a waitlist control (WLC). Families were assessed at baseline, 2 months after intervention was completed, and 1 and 2 years post-treatment.

Six months following the intervention, children in the CT and CT+TT groups were observed to show more prosocial skills with peers than children in the WLC group and all TT conditions were reported to result in less critical, more nurturing, and more consistent teachers. While improvements were noted, the authors/researchers did not find TT to add significantly to CT in regards to reducing observed physical aggression in the classroom.

**Webster-Stratton, C., Reid, M. J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*, 33, 105-124.**

The current study evaluated a new intervention model for children with behaviour problems. The model is a “theory-based teacher training intervention targeted at specific classroom risk factors (classroom management skills, collaboration with parents) in combination with either parent training (including a new component that focuses on school problems), child social skills training for treating young children with ODD, or both” (p. 106). This intervention model was important to evaluate because no previous attempts had been made to examine the effects of combining teacher training with parent training to assist young children with severe behaviour problems.

The 159 families selected for participation were recruited from families requesting treatment at the University of Washington Parenting Clinic (of all the requesting families, one third self-referred to the clinic and the remainder were referred by professionals in the community). The families entered the study in 3 cohorts (1995, 1996 and 1997) and participated in assessments of the parents, the children, and the parents and children together. The families were randomly assigned to 1 of 6 treatment conditions: parent training alone (PT); child training alone (CT); parent plus teacher training (PT+TT); parent and child training and teacher training (PT+CT+TT); and waiting list control (WLC). Recruitment and assessments for participating families were completed between September and October of each year, while the random assignment was conducted in November after all families in the cohort had completed the baseline assessments. Treatment began in mid-November and lasted until April. The post-treatment assessments were completed before the end of the school year and then repeated a year later, in the spring. Data collection included information about the children and families both in the school and the home.

The results indicated that after 6 months of intervention, all treatment conditions were found to promote significantly more positive behaviours. Children receiving intervention were observed and reported to have fewer conduct problems with mothers, teachers, and peers, and more prosocial skills with peers when compared to their control group counterparts. Furthermore, the parent training appeared to influence more positive and less negative parenting for mothers and less negative parenting for fathers. At the one year follow-up, the results indicated maintenance of positive and negative parenting behaviours, child negative behaviours at home, and child positive behaviours with peers. However, children’s displays of negative behaviours in the classroom showed deterioration from 6- to 12-months post-intervention. Overall, the authors concluded that the results of the current study indicate that the addition of a “teacher training program is promising in its ability to halt coercive processes and bring about positive change in teacher behavior and classroom atmosphere” (p. 123).

**Webster-Stratton, C., & Taylor, T. (2001). Nipping early risk factors in the bud: Preventing substance abuse, delinquency, and violence in adolescence through interventions targeted at young children (0-8 years). *Prevention Science, 2*, 165-192.**

The authors reviewed prevention programs designed to increase parent and teacher competencies and prevent conduct problems. The focus was on programs targeting preschool and primary grade children, empirically supported programs identifying key risk factors, and programs which have longitudinal research relating to the development of substance abuse, delinquency, and violence.

Twelve parent/family-focused programs were summarized: Home Visiting (Olds et al, 1997); Structured Family Therapy (Szapocznik et al., 1989); Living with Children (Patterson et al., 1982); Helping the Noncompliant Child (Forehand & MacMahon, 1981); Parent-Child Interaction Therapy (Eyberg et al., 1995); Synthesis Training (Wahler et al., 1993); Enhanced Family Treatment (Prinz & Miller, 1994); Positive Parenting Program (Triple P; Sanders & Dadds, 1993); Incredible Years Parenting (Webster-Stratton, 1990); Community-Based Program (Cunningham et al., 1995); DARE to be You (Miller-Heyle et al., 1998); and, Focus on Families (Catalano & Haggerty, 1999). The authors reported that during the prenatal and first years of the infants' life, intensive home visiting for poor mothers can lead to a reduction in later delinquency and drug abuse. For families with children 2 years and older, behavioural parent training of any kind has consistently been shown to improve parenting practices and reduce conduct problems in children.

Four child-focused programs were summarized: Problem-Solving Curriculum (Kazdin et al., 1992); Incredible Years Dinosaur Program (Webster-Stratton et al., 1997); Peer Coping Skills Training (Printz et al., 1994); and, EarlsCourt Social Skills Program (Peplar et al., 1995). Taken together, these studies indicate that child-focused interventions are promising but have yet to yield generalized behavioural improvements on their own. When child focused interventions are combined with parent or teacher training, the generalization of effects across different settings is enhanced.

Eight classroom focused programs were summarized: ICPS (Shure & Spivak, 1982); High Scope Perry Preschool Project (Schweinhart & Weikart, 1988); Contingencies for Learning Academic and Social Skills (Hops et al., 1978); Program for Academic Survival Skills (Greenwood et al., 1977); Good Behavior Game (Kellman et al., 1998); Promoting Alternative Thinking Strategies (Greenberg & Kusche, 1998); Second Step (Grossman et al., 1997); and, Child Development Project (Battistich et al., 1996). There was evidence that the programs designed to promote social behaviours and academic competence are effective. Programs for skills training showed modest gains. Programs for training teachers in classroom management practices had substantial effects.

**Weiss, B., & Weisz, J. R. (1995). Relative effectiveness of behavioral versus nonbehavioral child psychotherapy. *Journal of Consulting and Clinical Psychology, 63*, 317-320.**

In this article, Weiss and Weisz proposed to conduct a meta-analysis comparing the use of behavioural interventions versus nonbehavioural interventions for children and adolescents. The current study set out to determine whether behavioural and nonbehavioural interventions differ in methodological quality, and whether such differences account for effect size differences between behavioural and nonbehavioural studies.

One hundred and five studies were analyzed and were taken from the Weisz et al. (1987) data set. The methodological factors used in the current study were derived from both the Shirk and Russell (1992) meta-analysis and the Weisz et al. (1987) study. The methodological factors from the Shirk and Russell study included lack of random assignment, rater evaluation bias, uncontrolled concurrent treatment, unequal attrition for treatment and control groups, therapist inexperience, mono-operationalization use, and failure to ensure treatment integrity. The second set of methodological factors included therapist inexperience, rater blindness, participant blindness to outcome assessment, failure to ensure treatment



integrity, participant assignment, and participation attrition. Weiss and Weisz (1995) computed “effect size estimates for each dependent variable by dividing the mean post-therapy treatment group/control group difference by the standard deviation of the control group” (p. 318).

The results of the meta-analysis indicated that “the apparent superiority of behavioral treatments in children is not an artifact of methodological quality” (p. 319). More specifically, behavioural treatments were found to differ significantly in effectiveness when compared to nonbehavioural treatments, on the stated methodological factors of the current study.

**Zavela, K., J., Battistich, V., Gosselink, C. A., & Dean, B. J. (2004). Say Yes First: Follow up of a five-year rural drug prevention program. *Journal of Drug Education*, 34, 73-88.**

The U.S. Department of Health and Human Services’ Centre for Substance Abuse Prevention (CSAP) has been funding and monitoring the effectiveness of drug prevention programs for children and youth since 1986. One of the successful drug programs is the *Say Yes First-To Rural Youth and Family Alcohol/Drug Prevention* (SYF) Program, a school-based drug prevention program for rural youth. However, very few of the CSAP funded programs have had long-term follow-ups, including the SYF Program. The purpose of the current study was to conduct a five-year follow-up study of the effectiveness of the SYF Program, focusing on the promotion of resiliency or protective factors and drug risk reduction.

The current study involved 859 students from 4 school districts in a rural Colorado county, from the Class of 2000, and focused on their progression from 4<sup>th</sup> to 8<sup>th</sup> grade. Of the original 859 students, only 120 students completed SYF and participated in the program through to the end of the follow-up period. The current study was conducted with 4 objectives: (1) to increase the academic success of the participating high risk students; (2) to reduce risk factors that place students at high risk for using alcohol and other drugs; (3) to increase the involvement of high risk students in extracurricular activities, family programs, or summer programs which promote non-drug use messages; and, (4) to delay the initial use and/or reduce the frequency of use of alcohol and other drug use by high risk students by the time they reached 8<sup>th</sup> grade. In order to better assess the effectiveness of the program, a comparison group of 136 students who did not participate in the SYF Program were included in the assessment. The *National Youth Survey* questionnaire was used to obtain information about intervention and comparison group students’ use of alcohol, tobacco, and other drug use and associated risk and resiliency factors.

The results of the follow-up program indicated that the students who participated in the SYF Program had higher grades, better school attendance and had general lower drug use rates (particularly lower marijuana use) than the comparison students. Furthermore, SYF-participating students reported more positive attitudes towards school, less trouble in school, less negative self-appraisal, and also reported greater participation in sports, more family communication, and fewer disagreements or arguments with their parents, as compared to their comparison group counterparts.



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(An asterisk appearing at the beginning of a reference denotes that the article was a part of the meta analysis)

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**APPENDIX A. CHILD FACTORS COMPARISONS FOR ALL OUTCOMES X TIMEPOINT – FIXED AND RANDOM MODELS**

Predictors	Timepoint	Model	K	Studies in Comparison	Effect Size	Sign. of Effect Size	95% Confidence Interval		z	Heterogeneity		
							Lower limit	Upper limit		Q- value	df (Q)	p- value
Overall (all risk factors combined)	<b>Total</b>	F	274	All	.30	.000	.267	.340	16.31	242.52	28	.000
	early childhood	R			.29	.000	.173	.400	4.93			
		F	79	2, 5, 13, 18, 22, 36, 37	.13	.001	.054	.197	3.45	14.96	7	.04
		R			.11	.07	-.007	.225	1.84			
	mid childhood	F	71	5, 10, 12, 14, 16, 21, 25, 27, 33	.09	.01	.017	.157	2.44	37.91	8	.000
		R			.18	.04	.011	.358	2.09			
adolescence	F	124	1, 3, 6, 7, 8, 9, 12, 14, 15, 19, 24, 26, 27, 30, 32, 35	.46	.000	.408	.507	18.17	116.21	15	.000	
	R			.40	.000	.248	.547	5.22				
		--	--	36	--	--	--	--	--	--	--	--
		--	--	16	--	--	--	--	--	--	--	--
	early childhood	F	9	3, 8, 24, 26, 32	.04	.37	-.048	.127	.88	57.92	4	.000
		R			.21	.25	-.151	.576	1.15			
Static Risk	<b>Total</b>	F	12	3, 8, 16, 24, 26, 32, 36	.16	.000	.092	.235		90.38	6	.000
		R			.24	.11	-.057	.530				
		--	--	36	--	--	--	--	--	--	--	--
		F	14	10, 12, 21, 25, 27	.06	.18	-.030	1.58	1.33	24.43	4	.000
	early childhood	R			.10	.57	-.236	.428	.57			
		F	24	3, 6, 15, 19, 27, 35	.23	.000	.118	.332	4.11	58.93	5	.000
Emotional Concerns		R			.29	.15	-.107	.691	1.43			
	<b>Total</b>	F	42	3, 6, 10, 12, 15, 19, 21, 25, 27, 35, 36	.12	.000	.053	.181	3.6	86.28	10	.000
		R			.22	.04	.009	.430	2.04			
	early childhood	F	46	2, 13, 22, 36	.19	.000	.104	.267	4.45	4.10	3	.28
		R			.20	.000	.095	.297	3.81			
	mid childhood	F	31	5, 12, 14, 16, 21, 27, 33	.06	.11	-.014	.134	1.6	54.12	6	.000
Behavioural Concerns		R			.31	.03	.033	.594	2.19			
	<b>Total</b>	F	31	1, 3, 8, 12, 14, 19, 26, 27, 30	.65	.000	.576	.731	16.62	183.89	8	.000
		R			.52	.008	.138	.901	2.67			
	adolescence	F	108	1, 2, 3, 5, 8, 12, 13, 14, 16, 19, 21, 22, 26, 27, 30, 33, 36	.29	.000	.247	.339	12.48	360.96	16	.000
		R			.39	.001	.164	.623	3.36			

F = Fixed

R = Random



Social and Interpersonal Concerns	early childhood	F	7	36, 37		.02	.74	-.107	.151	.34	0	1	.99
	mid childhood	R	7	14, 16, 27		.02	.74	-.107	.151	.34	20.63	2	.000
	adolescence	R	--	3		-.03	.69	-.187	.123	-.40			
	<b>Total</b>	--	18	3, 14, 16, 27, 36, 37		.15	.57	-.376	.683	.57	--	--	--
Developmental Concerns	early childhood	F	11	29, 36		.03	.55	-.062	.166	.60	22.32	5	.000
	mid childhood	R	--	14		.08	.46	-.129	.283	.74			
	adolescence	R	11	29, 36		.10	.1	-.018	.215	1.65	.42	2	.52
	<b>Total</b>	--	15	3, 14, 29, 36		.10	.1	-.018	.215	1.65	--	--	--
School/ Learning	early childhood	F	15	5, 10, 16, 33		--	--	--	--	--	--	--	--
	mid childhood	R	15	3, 14, 29, 36		-.02	.68	-.112	.073	-.42	29.96	3	.000
	adolescence	R	--	18		-.09	.58	-.393	.220	-.55			
	<b>Total</b>	--	37	3, 5, 6, 7, 10, 12, 16, 18, 26, 33		.13	.03	.016	.241	2.24	31.83	3	.000
Prosocial Behaviour	early childhood	F	18	3, 6, 7, 12, 26		.19	.32	-.187	.573	.99	167.47	4	.000
	mid childhood	R	18	3, 6, 7, 12, 26		.36	.000	.288	.422	10.43			
	adolescence	R	37	3, 5, 6, 7, 10, 12, 16, 18, 26, 33		.37	.11	-.088	.835	1.59	224.72	9	.000
	<b>Total</b>	--	8	12, 14, 27		.27	.000	.217	.329	9.54			
Criminal history	early childhood	F	10	12, 14, 27		.24	.11	-.052	.537	1.62	--	--	--
	mid childhood	R	8	12, 14, 27		--	.98	-.182	.176	-.03	22.07	2	.000
	adolescence	R	10	12, 14, 27		.24	.48	-.424	.908	.71	13.57	2	.001
	<b>Total</b>	--	18	12, 14, 27		.17	.52	-.348	.692	.65	17.08	2	.000
Criminal history	early childhood	F	15	3, 9, 19, 24		-.01	.9	-.189	.167	-.121	--	--	--
	mid childhood	R	--	3		.20	.5	-.385	.784	.67	--	--	--
	adolescence	R	15	3, 9, 19, 24		--	.000	.493	.647	14.5	33.66	3	.000
	<b>Total</b>	--	38	.016		.38	.016	.069	.689	2.4			

APPENDIX B. FAMILY FACTORS COMPARISONS FOR ALL OUTCOMES X TIMEPOINT – FIXED AND RANDOM MODELS

Predictors	Timepoint	Model	K	Studies in Comparison	Effect Size	Sign. of Effect Size	95% Confidence Interval		z	Heterogeneity			
							Lower limit	Upper limit		Q-value	df (Q)	p-value	
Overall (all risk factors combined)	All	F	188	3, 4, 6, 10, 11, 13, 16, 17, 19, 20, 23, 26, 28, 29, 31, 32, 33, 34, 36, 38	.19	.000	.151	.234	9.14	98.38	19	.000	
		R			.25	.000	.143	.349	4.7				
	early childhood	F	84	4, 11, 13, 23, 28, 29, 36	.13	.000	.072	.180	4.59	3.18	6	.79	
		R			.13	.000	.072	.180	4.59				
	mid childhood	F	38	10, 16, 17, 33, 34, 38	.20	.000	-.04	.648	4.1	52.52	5	.000	
		R			.30	.083	-.040	.648	1.73				
	adolescence	F	66	3, 6, 13, 19, 20, 26, 32, 31	.28	.000	.205	.348	7.55	34.65	7	.000	
		R			.31	.001	.133	.484	3.45				
	early childhood	F	37	4, 11, 13, 28, 29, 36	.118	.118	.072	.165	5.0	1.92	5	.860	
		R			.188	.188	.072	.165	5.0				
Static Risk	mid childhood	F	14	10, 16, 17, 33	.26	.000	.120	.40	3.65	48.57	3	.000	
		R			.24	.41	-.324	.804	.83				
	adolescence	F	16	3, 6, 13, 19, 26	.04	.30	-.035	.111		21.50	4	.000	
		R			.11	.22	-.067	.296					
	<b>Total</b>	F	67	3, 4, 6, 10, 11, 13, 16, 17, 19, 26, 28, 29, 33, 36	.11	.000	.620	.000	5.35	79.40	13	.000	
		R			.15	.005	.046	.262	2.79				
	early childhood	F	21	4, 29	.14	.10	-.026	.315	1.66	.57	1	.45	
		R			.14	.10	-.026	.315	1.66				
	mid childhood	--	--	--	--	--	--	--	--	--	--	--	--
	adolescence	F	15	3, 6, 20	.14	.06	-.004	.280	1.91	4.23	2	.12	
	R			.15	.19	-.071	.365	1.32					
Parent Mental Health	<b>Total</b>	F	36	3, 4, 6, 20, 29	.14	.01	.032	.250	2.53	4.8	4	.31	
		R			.14	.02	.022	.264	2.32				
	early childhood	--	5	36	--	--	--	--	--	--	--	--	
		F	8	16, 33, 34	.38	.000	.202	.562	1.15	3.30	2	.19	
	mid childhood	R			.41	.000	.166	.658	3.29				
	adolescence	F	4	20, 32	.12	.34	-.131	.376	.95	.18	1	.68	
		R			.12	.34	-.131	.376	.95				
	<b>Total</b>	F	17	16, 20, 32, 33, 34, 36	.17	.000	.064	.265	3.21	11.82	5	.04	
		R			.24	.01	.057	.419	2.58				

F = Fixed  
R = Random

Family Structure	early childhood	F	12	23, 29, 36	.14	.01	.032	.257	2.51	2.43	2	.30
		R			.16	.02	.023	.292	2.30			
	mid childhood	F	5	16, 33	.25	.01	.067	.431	2.67	11.26	1	.000
		R			.26	.41	-.352	.868	.83			
	adolescence	F	19	3, 6, 19, 20, 26, 31, 32	.70	.000	.646	.759	24.35	247.47	6	.000
		R			.67	.007	.185	.151	2.71			
	<b>Total</b>	F	36	3, 6, 16, 19, 20, 23, 26, 29, 31, 32, 33, 36	.57	.000	.517	.614	22.77	349.01	11	.000
		R			.48	.003	.165	.800	2.98			
	early childhood	F	9	4, 28, 29, 36	.16	.000	.107	.216	5.79	10.72	3	.01
		R			.13	.05	.003	.246	2.0			
Adverse Family Environment	mid childhood	F	11	16, 33, 38	.13	.02	.019	.232	2.31	6.48	2	.04
		R			.17	.13	-.052	.393	1.5			
	adolescence	F	15	3, 6, 20, 32	.50	.000	.381	.612	8.43	41.59	3	.000
		R			.38	.11	-.087	.840	1.59			
	<b>Total</b>	F	35	3, 4, 6, 16, 20, 28, 29, 32, 33, 36, 38	.21	.000	.161	.250	8.99	87.91	10	.000
		R			.23	.000	.078	.377	2.99			

