KIDS ‘N CRIME
Report on the Development and Prevention of Criminality Among Children and Youth

October 2006

Prepared by Alasdair Maughan, B.A. (Psychology), LL.B.
Candidate for the degree of Master of Business Administration
Sauder School of Business, University of British Columbia

Under the direction of David E. Park
Assistant Managing Director and Chief Economist
The Vancouver Board of Trade

With assistance provided by the Sauder School of Business
University of British Columbia
TABLE OF CONTENTS

SUMMARY .......................................................................................................................... 4

I. INTRODUCTION TO CHART ...................................................................................... 9

CHART: INFLUENCES AFFECTING CRIMINAL DEVELOPMENT ............................ 12

II. PRENATAL EFFECTS .................................................................................................. 13

a. Education of Youth and Young Adults in Anticipation of Future Parenthood. 13
b. Parenting Education During Pregnancy ................................................................. 13

c. Monitoring and Home Visits during Pregnancy and After Birth .......................... 14

d. Other Prenatal Effects on Crime ............................................................................ 14
   i. Birth Control ......................................................................................................... 14
   ii. Abortion ............................................................................................................. 14
   iii. Fetal Alcohol Spectrum Disorders (FASD) ...................................................... 15
   iv. Neonatal Abstinence Syndrome (NAS) ............................................................. 16

III. IMMEDIATE POST-NATAL EFFECTS ................................................................... 16

a. Parent Attributes and Parenting Style ................................................................. 16
b. Socio-Economic Status ......................................................................................... 17

IV. EARLY CHILDHOOD DEVELOPMENT .................................................................... 17

a. Appropriate Home Environment ......................................................................... 17
   i. Household Effects: Learning and Nutrition ...................................................... 18
   ii. Neighbourhood Effects ..................................................................................... 18
b. Appropriate Education ......................................................................................... 19
   i. Appropriate Supervised Peer Environment ..................................................... 19

V. PRE-SCHOOL YEARS ................................................................................................. 20

a. Attention to Development ..................................................................................... 20
b. Identification of Learning Disabilities ................................................................. 20

VI. FACTORS DURING ELEMENTARY SCHOOL ......................................................... 21

a. Readling Level and School-Readiness ................................................................ 21
   i. Testing Tools ...................................................................................................... 22
   ii. Learning Problems ............................................................................................. 22
   iii. Attention Deficit Hyperactivity Disorder (ADHD) ......................................... 23
TABLE OF CONTENTS

iv. Immigration........................................................................................................... 23

VII. FACTORS IN ‘TRANSITION STAGE’............................................................... 24
a. Changes in the Child............................................................................................. 24
   i. Parent/Teacher Reactions................................................................................. 24
   ii. Consequences (Behavioural Disorders and Their Effects)............................. 25
b. Preventative Measures......................................................................................... 25
c. Intervention Practices......................................................................................... 25

VIII. STREET YOUTH............................................................................................... 25
a. Precipitating Factors............................................................................................ 25
b. Intervention.......................................................................................................... 26

IX. FACTORS IN HIGH SCHOOL............................................................................. 26
a. High School Culture............................................................................................. 26
b. Gambling and Youth............................................................................................. 27
c. Exposure to Drugs............................................................................................... 27
d. Addictive Predisposition to Drugs or Alcohol.................................................... 28
e. Graduation from High School............................................................................. 29

X. DUAL-DIAGNOSIS INDIVIDUALS................................................................. 30

XI. ABORIGINAL YOUTH......................................................................................... 31
a. Residential Schools.............................................................................................. 31
b. Involvement with Different Government Services.............................................. 32
c. Child Death Rate................................................................................................. 32
d. Learning Differences........................................................................................... 33

XII. CONCLUSIONS................................................................................................. 33

XIII. APPENDIX: CRIME IN THE MAKING STUDY OUTCOME....................... 35
SUMMARY

For many years it has been clear that factors impacting children from before birth to adulthood can have serious psychological effects. In this report, numerous impacts are charted in relation to their potential influence on youth. These are connected to show how they can contribute to adverse development leading to criminal behaviour. Conversely, an overall challenge is outlined with respect to ways in which the number of youth becoming involved in criminal activity can be reduced.

From a review of literature and discussions with knowledgeable authorities, a model has been created which illustrates these influences. These factors are grouped into five categories, including:

1. Prenatal environmental factors;
2. Postnatal environmental factors;
3. Education and learning factors;
4. Transition-to-adolescence factors; and
5. Substance abuse factors.

Each of these factors alone can increase the risk of criminal behaviour. However, they can interact and result in a cumulative negative effect. It follows that preventative measures taken from before birth until adulthood will provide the greatest benefits to the individual and to society.

Risk factors that increase an individual’s propensity towards crime and corresponding preventative factors can be traced as far back as preparation for the mother’s pregnancy period. Educating youth about parenting skills is important. Also important is parenting education during pregnancy. Avoiding unwanted pregnancies is another key—children who are unwanted are at higher risk for involvement in criminal activity. Pregnant women who consume significant amounts of alcohol or who use illicit drugs are likely to have children with life-long disorders having serious consequences for those individuals and society.

Immediately after birth, home visits with identification of potential problems and remedial efforts concerning adverse parenting practices can be an effective measure. However, low socio-economic status may offset these efforts. It is the consequences of low socio-economic status rather than poverty itself that contributes to poor development.

Children’s learning patterns become set before they begin their formal education. The period from birth to age three is widely agreed upon as the most crucial developmental period of a child’s life and it can be greatly affected by many factors.

Skilled readers continually have higher academic scores and have the best chance of lifelong success. A variety of parent-child activities can provide the best advantage to young children as they move into literacy.
It is the home environment provided to the child that affects subsequent academic achievement. Educated parents are better able to provide a more stimulating home environment and better access to activities, as well as greater access to a nutritious diet. Malnutrition is associated with significant morbidity and economic costs, including the cost of developmental problems and associated crime.

Young children are more susceptible to social problems in neighbourhoods where responsibility for parenting falls to parents (usually mothers) who cannot count on a partner for support or respite from caregiving. This vulnerability is correlated with neighbourhood characteristics like unemployment rates rather than individual household poverty. Environment beyond the parents and household can play a decisive factor in early childhood development.

When parents are given the proper early learning resources for use at home, pre-school children are better prepared for school and learning. Research also shows that all children benefit from quality institutional childcare, independent of home environment.

A proper pre-school education should enhance abilities that have been developed, and should detect developmental deficiencies in children at an early stage while providing a safe and nurturing environment. Parents also should be taught to look out for deficiencies. Identifying children at risk of low language and literacy development is critical to fostering literacy skills in preschool children.

Increased educational attainment is positively correlated with every single important life outcome. More education is linked to better labour force attachment, higher incomes, better health, fewer accidents, longer life, greater volunteerism, more civic involvement, greater tolerance, etc.

Ensuring that students achieve a grade appropriate reading level by Grade 3 has been noted as a crucial goal. A key reason for this is that beyond Grade 3, the school curriculum does not accommodate those students who cannot read, causing them to fall further behind. This negatively affects the sense of self-worth, increases detachment from school and elevates the risk of drop out. For this reason it is important to detect learning problems early-on, preferably no later than entry to kindergarten, and to take remedial action.

The overrepresentation of illiteracy in the prison population suggests a correlation between poor reading capability and criminal behaviour. Research suggests that a considerably higher proportion of prisoners have learning disabilities than the general population. Dyslexia and Attention Deficit Hyperactivity Disorder appear to be major problems that in a relatively high proportion of cases adversely affect learning, reading skills, and lead to involvement with the justice system. However, providing remedial instruction, behavioural modification strategies and treatment can substantially reduce this risk.

Immigrant children have been found to be more likely to start school with less-developed reading, writing and mathematics skills, though many will bridge the gap before the end of elementary school.

The shift from childhood to adolescence has been recognized as a significant developmental period in a child’s life, second in importance only to early childhood
development. Research has shown that in this transition stage the child is transformed neurologically, hormonally, cognitively and socially. This can cause changes in self-image and social interaction, which may increase risky behaviour. Such behaviour elevates the possibility of the youth becoming involved in criminal activity. Proper parenting in this stage is important, improper parenting can contribute to suicidal tendencies, drug use and aggressive and delinquent behaviour in adolescent children. The most effective interventions are those that address parenting behaviour and educate parents about the dynamics of the transition phase.

High school culture can have a negative impact on youth in terms of their lives. Affiliating with deviant peers can be associated with criminal activity. High school is a period where behavioural problems and learning difficulties increasingly manifest themselves. It is also a potent period for beginning to educate youth on appropriate parenting techniques and risk reduction behaviours.

Programs should address youth at risk of not completing high school. Graduation is associated with positive labour force attachment, higher income, less involvement in crime, and better health.

Factors that lead youth to live on the street include poor family cohesiveness, association with street youth, drug use and involvement in the sex trade. Often the general precipitating factor is a ‘lack’ in the youth’s life. This lack can take the form of failure in school (possibly due to learning problems that were not detected or corrected), poverty (lack of resources and opportunity), or emotional absence (when a single parent is either busy or depressed, when a wealthy family does not take the time to offer a strong emotional presence, or if the child is continually moved from one foster family to another). Such a ‘lack’ may lead youth to turn to self-medication, which may lead to addiction, or to association with delinquents, which may be offer a false sense of stability, power and control.

Problematic gambling among youth has been correlated with poor performance in school, increased delinquency and criminal behaviour.

Despite prohibition, illicit drugs are quite readily available in both high schools and elementary schools. Research indicates that drug use is greater among Lower Mainland students than among their United States peers.

Given the availability of illicit drugs to students, it is important to identify risk factors that increase the potential for drug abuse. Adolescents characterized by high stress, low parental support and low academic competence are vulnerable. Major transitions in children’s lives, such as physical growth, change of schools, or a divorce of their parents are key risk periods where children are more likely to develop problem behaviours that can lead to drug use. Individuals who are genetically disposed are more likely to become addicted than the average person.

As with other aspects of youth development, early intervention is easier and less costly than later attempts.

Dual-diagnosis refers to the combination of mental illness and substance abuse. Mental illness may precipitate self-medication with illicit drugs or alcohol. Dual-diagnosis individuals often end up jobless, homeless, in poor health and involved with the criminal
justice system. It is important to offer intervention services targeting these individuals, and prevention services that target mentally ill youth before they become addicted to illicit drugs or alcohol.

Aboriginal youth have a risk trajectory similar to that described throughout this report, but research mentions overrepresentation of Aboriginals in many of the risk categories. Aboriginal children are exposed to many of the negative factors that increase the risk of future criminal behaviour. Statistics show an overrepresentation of Aboriginals in the prison population, which may be the outcome of greater exposure to risk factors.

The ongoing impact of residential schools, reflected in subsequent generations, is a continuing problem.

Aboriginal youth are much less likely to graduate from high school than non-Aboriginal youth. Aboriginal criminal offenders may have limited education and employment skills. Contributing factors include moving to an urban centre, alcoholism and violence, lack of familial support and lack of social interaction.

The school system and curricula in Canada have been designed to serve a broad-based population, but there are shortfalls with respect to particular ethnic groups, such as Aboriginals and immigrants. In part these relate to learning differences. For example, historically Aboriginal society was a non-literate society where elders transferred knowledge. Youth learned through observation and imitation rather than formal education. Learning was largely unstructured and practical, focusing on cooperation rather than competition. Aboriginal students who are educated in a context different from these traditions are at greater risk of failure. The situation is compounded by the fact that Aboriginal youth change schools more often than their peers, and the school system does not readily accommodate this.

In conclusion, it is essential that factors potentially contributing to criminal development not be viewed individually, but rather as a continuum. It is possible that the presence of any developmental risk factors can lead an individual towards chronic criminal activity. It is likely that the presence of more risk factors will increase the likelihood of becoming a criminal. This correlation may explain the overrepresentation of certain populations in Canadian prisons as mentioned in this the report.

It is also evident that prevention is preferable to intervention. Throughout development from birth to adulthood, the earlier the risk factors are detected and addressed, the greater likelihood that prevention will be successful. Early prevention is likely to consume fewer resources, in terms of time and effort, than later intervention. This may translate into a cost-benefit in favour of prevention, as demonstrated by previous research. The current amount of crime in Canada also shows the merit of addressing needs for intervention.

This review and model of influences on criminal development may be best viewed as a catalyst to further work on the topic. The model calls for greater emphasis on interdisciplinary research and discussion to address criminal development from many perspectives throughout youth and adolescence. There is merit in pointed research on outcomes for combinations of risk factors. The model also calls for a review of delivery of support at all levels – from the family, from the community and from government. It is evident that integration is necessary not only for efficiency’s sake, but for effectiveness.
Thus, proper coordination must be emphasized while looking for positive outcomes at the individual level.

Above all, this model demonstrates that there are many risks in childhood and adolescence, but that there are many opportunities to minimize those risks. The benefits of risk reduction go beyond a drop in criminal activity to include more cohesive families, better-functioning schools, a larger skilled workforce, and less reliance on health services and social services. Thus, the positive impact of risk reduction is potentially far-reaching and should be addressed as a matter of priority.

The chart on Page 12 outlines the model described above.
I. INTRODUCTION TO CHART

Crime is a serious problem in Greater Vancouver and throughout Canada. The level of crime and the number of criminals remain too high. According to the Statistics Canada Criminal Victimization Survey, there were more than eight million criminal acts in Canada in 2004, directly affecting one person in four. There were more than 2.7 million violent crimes, which inflicted over 650,000 physical injuries – 40 per cent more than in 1999.¹

Efforts have been made to assess the impact of crime and to prevent it. Some local police forces have recruited more officers, integrated programs have targeted chronic offenders, and previous reports have addressed the justice system.

The topic of influences on criminal development is by no means a new one. As early as 1950, researchers at Harvard Law School conducted a study comparing juvenile delinquents with non-delinquent peers. Robert Sampson and John Laub recovered the data from the study in 1986 and reanalyzed it. Analyzing the many parameters produced the results shown in the chart in the Appendix at the end of this report and helped to guide development of the chart on page 12.

In their 1993 publication, *Crime in the Making: pathways and turning points through life*, Sampson and Laub correlate delinquency with: structural background factors (such as economic status, family size and parental deviance), individual difference constructs (personality differences), social control (lack of supervision or improper discipline) and other influences. These factors affect children and adolescents and increase the risk of delinquency. Moreover, Sampson and Laub show that delinquency and incarceration each contribute to weak social bonds, which reinforce the cycle of criminal behaviour throughout life.² The appendix attached to this report outlines Sampson and Laub’s findings.

Though the Sampson and Laub reexamination of the original Glueck data does not touch upon specifics of parenting techniques, schooling, or more recent issues such as illicit drug use, the correlations it shows are equally valid today. It is important that present day researchers continue to expand upon this precedent.

Attention has also shifted toward prevention. In this light, it is both beneficial and necessary to understand the many factors that influence a tendency towards criminal activity, especially chronic criminal activity. These factors play different roles at different points throughout an individual’s development from birth to adulthood. From a review of literature and discussions with knowledgeable authorities, a model has been created that shows influences affecting criminal development. These factors can be grouped into five categories:

1) **Prenatal Environmental Factors**: These are influences that affect an individual before birth. Alcohol and narcotic consumption habits of the mother during pregnancy, for example, have been shown to cause developmental

---

abnormalities in the fetus which can lead to physical and mental impairment. On the other hand, providing parenting education during pregnancy can make parents aware of proper parenting techniques, preparing them to make positive parenting decisions early in a child’s life.

2) **Postnatal Environmental Factors**: From birth, the child’s environment will affect all facets of development. For example, parental addiction to substances or a low level of parental education, among other factors, can lead to low socio-economic conditions for the child. Poor socio-economic conditions can deprive a child of opportunities for sensory stimulation at this early age, when they are most necessary. Issues like poor nutrition, parental illness, single parent status and recent immigrant status can affect a child’s development. Moreover, such an environment can cause parental depression, which may further affect parenting techniques, creating an adverse home environment.

3) **Education and Learning Factors**: From early childhood onwards, education plays a crucial role in proper cognitive, social and emotional development. Providing a proper learning environment in early childhood will ease the child’s transition into elementary school. This environment must include a nurturing home environment as well as an appropriate peer environment for the child outside the home.

   Learning disabilities and other disorders that may affect a child’s development should be detected as early as possible, so that preventative measures can be taken. Reading problems are often a sign of other disorders that can put the child at risk.

   Learning and education play an important role not only in the early years of a child’s life, but throughout adolescence. Statistically, youth with greater reading skills are more likely to complete high school. Youth who complete high school are offered more opportunities in life and are less likely to turn to criminal activity.

4) **Transition-to-Adolescence Factors**: The transition stage is characterized by physiological and social changes in a child’s life. It is widely agreed that this is a second crucial developmental period. It is a chance to both maintain a positive life course and to correct past problems. Without proper attention, however, conduct disorders, emotional problems and negative family dynamics can cause youth in this stage to drop out of school, associate with delinquent peers, turn to illicit drug use and consequently become involved in criminal activity.

5) **Substance Abuse Factors**: Exposure to illicit drugs and alcohol is a given during high school, but is becoming more common in late elementary school. Combined with many risk factors that predispose a child to drug or alcohol addiction, this exposure can lead the child away from a constructive life.

   It is evident from this analysis that each of these factors alone can increase the risk of criminal behaviour. However, often one set of factors can affect another set, exacerbating problems and resulting in a cumulative negative effect. From this
examination it is apparent that preventative measures taken from before birth until adulthood will provide the greatest benefits to the individual and to society. It is essential that children be positively influenced at each sensitive stage in life.

This echoes the results of many studies done in the recent past that provide cost-benefit analyses. The Perry Preschool Project update and the Abecedarian Study, for example, show that $1 spent on early-childhood education alone can save society over $17 throughout an individual’s life.\(^3\) With that in mind, this report seeks to expand on the factors noted, and to examine the current research with respect to each.

Influences Affecting Criminal Development

NEGATIVE EFFECTS

BIRTH
- FASD
- Prenatal Environment
- Inadequate Parenting Education
- Behavioural Judgment
- Insecure Attachment
- Inadequate Early Childhood Development
- Postnatal Environment
- Lack of Parental Presence
- Strengthening Home Environment

Early Childhood Period (0 - 6)
- Inadequate Early Childhood Development Programs
- Inadequate Early Childhood Development
- Suboptimal Learning Environment
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development

Pre-K years
- Lack of Parental Presence
- Inadequate Pre-School Programs
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development

Elementary
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development

High School
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development

ADULTHOOD
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development
- Inadequate Early Childhood Development

GOAL:
- Establish a cycle of positive pre/postnatal environment

POSITIVE EFFECTS

The Vancouver Board of Trade • 2006
II. Prenatal Effects

Risk factors that increase an individual’s propensity towards crime and corresponding preventative factors can be traced as far back as preparation for the mother’s pregnancy period.

a. Education of Youth and Young Adults in Anticipation of Future Parenthood

Given that teen girls account for about 8 per cent of pregnancies in Canada,⁴ resulting in almost 20,000 live births annually,⁵ educating youth about parenting skills is essential. Infants of teenage mothers suffer increased health risks such as low birth weight, organs that aren’t fully-developed, bleeding in the brain, respiratory distress syndrome, and intestinal problems.⁶,⁷ The intervening positive effects of such education can be immediate, but will also benefit youth by preparing them for future parenthood.

In a 1999 poll conducted by Lake Snell Perry & Associates, an overwhelming majority of American households favoured parenting education for youth of all ages.⁸ Organizations such as Prepare Tomorrow’s Parents advocate parenting education in school to alleviate issues such as “child abuse, neglect and abandonment, teen pregnancy and overall violence”.⁹ The organization also addresses the need for empathy; early sensitive care, mental health, paternal involvement and latchkey children, offering suggested resources and curricula for different levels of education.¹⁰ Overall, the goals of the curricula need to be: preventing teen pregnancy and preparing teens for future parenthood.

One specific program that has received positive feedback is the use of a simulated baby, which students must take care of throughout a weekend.¹¹

b. Parenting Education During Pregnancy

If youth have been exposed to proper parenting prior to pregnancy, education during pregnancy may nevertheless be beneficial. This education is more immediate and the results will be tangible.

---

⁶ Dryburgh, supra, n.5
c. Monitoring and Home Visits During Pregnancy and After Birth

Certain communities across North America have committed to continued support after birth. For example, for the past 20 years, every child in Hawaii has been assessed for proper development for the first three years. During this time, support is also provided to the family.  

d. Other Prenatal Effects on Crime

Children who are unwanted are at higher risk for involvement with criminal activity. Birth control and abortion have been shown to reduce unwanted children, thus reducing criminal activity.

i. Birth Control

Parenting education during high school should include an emphasis on birth control. In addition, birth control should be made available to youth, especially youth from low socio-economic strata who may otherwise not have access to it. A stronger emphasis on birth control combined with greater availability may reduce the need for abortion.

ii. Abortion

While researching at Stanford University, Steven D. Levitt, a University of Chicago professor in Economics, showed that the legalization of abortion in the United States in 1973, was correlated with a distinctive drop in the crime rate in the late-1980’s, and throughout much of the 1990’s. To explain this, Levitt hypothesized that unwanted children are at greater risk for crime, and that legalized abortion leads to a reduction in the number of unwanted births. Evidence shows that:

- “The five states that allowed abortion in 1970 experienced declines in crime rates earlier than the rest of the United States.”

- “States with high and low abortion rates in the 1970’s experienced similar crime trends for decades until the first cohorts exposed to legalized abortion reached high-crime ages around 1990. At that point, the high-abortion states saw dramatic declines in crime relative to the low-abortion states.”

Other research has shown that abortion has also reduced adoption rates, infant mortality, childhood poverty, growing up in a single-parent household, and illicit drug usage. These other factors have been similarly correlated with crime.

---

12 Sandy Cooke (retired director – Covenant House Vancouver), personal communication, June 27, 2006.
13 Steven D. Levitt, Understanding Why Crime Fell in the 1990’s: Four factors that explain the decline and six that do not. Journal of Economic Perspectives, Volume 18, #1, Winter 2004, p. 183
14 Levitt, supra, n.13, p.183
ii. **Fetal Alcohol Spectrum Disorders (FASD)**

Fetal Alcohol Spectrum Disorders (FASD) affect up to 9 in 1,000 births in Canada, affecting 300,000 in our country. In British Columbia, conservative estimates indicate that there are about 140 FASD births per year. On average, FASD costs $1-2 million through the lifetime of a person affected.\(^1\) This cost is borne by both the individual and the taxpayer.

FASD is caused only by maternal alcohol use during pregnancy. The disorder can result in a constellation of manifestations at different stages in life, including: delayed development in infancy, attention and language problems in childhood, later learning problems, poor impulse control, and problems with judgment. This leads to an increased risk of involvement with the criminal justice system.

Though FASD is a medical diagnosis, there are claims that it is often not detected in offenders. As a consequence, they are not dealt with appropriately, increasing the rates of recidivism among FASD offenders. Prevention of FASD needs to reach back to proper parenting education.

A recent study suggests children with fetal-alcohol brain damage, once thought to be untreatable, can develop at the same level as normal children if they get constant mental stimulation and nurturing in their first two years.

The several hundred children who have passed through a unique Toronto program do “way, way better” than others born to drinking mothers, says a project participant.

If implemented more widely, it could have great impact on the epidemic of fetal-alcohol disease that afflicts an estimated 300,000 Canadians, said Dr. Gideon Koren of Toronto’s Sick Children’s Hospital.

“For ever, people thought, once you cause damage to a baby, nothing can happen [to improve them],” said Koren, who heads Toronto’s respected Motherisk clinic, which examines the link between drugs and congenital birth defects.\(^2\)

The Province of British Columbia “--- is establishing a provincial outreach program for students who suffer from the permanent brain damage caused when a mother consumes alcohol during pregnancy. The program --- will be operated by the Prince George School District and aims to provide teachers with tools to help students living with the disorder.” Consultation and training will be provided “--- to teachers across B.C., and an educational consultant will establish a website to include online discussion.”\(^3\)

---


\(^{17}\) Sin, *supra*, n.16
iv. Neonatal Abstinence Syndrome (NAS)

Women who use illicit drugs during pregnancy risk giving birth to children addicted to drugs, withdrawal from which causes an affliction known as Neonatal Abstinence Syndrome (NAS). Such exposure has also been shown to contribute to lifelong disorders similar to those experienced by FASD babies. Estimates in the United States show that between 3 per cent and 50 per cent of newborns have been exposed to illicit drugs in the womb, depending on the geographic area. Currently, there are no Canadian statistics on prevalence of NAS. NAS is most often caused by opiates (heroin and methadone), but the definition now includes other drugs as well. NAS is characterized by withdrawal symptoms such as tremors, irritability, sleep problems, crying, hyperactive reflexes, seizures, poor feeding, vomiting, diarrhea, dehydration, sweating and unstable temperature. These symptoms are the result of an overstimulated central nervous system compensating for the lack of drugs. In addition, addicted mothers tend to give birth to low-weight babies, increasing the risk for bleeding into the brain, interferences with normal breathing, problems with blood vessels in the eye and problems with feeding. Newborns with such problems are at higher risk to develop poorly in childhood, which can cause learning problems, mental illness and conduct disorders, all of which are risk factors for criminal activity.

Even if a user abstains from heroin during pregnancy, developmental problems may arise due to a deficiency of blood supply to the fetus. Other research has shown that drug-dependent mothers are more likely to live in poor conditions, maintain poor eating and exercise habits, be carriers of sexually transmitted diseases, and generally have inadequate prenatal care. These factors can harm the fetus independent of illicit drug use, putting the child at a development disadvantage.

III. Immediate Post-Natal Effects

a. Parent Attributes and Parenting Style

An association has been found between adverse parenting practices and child misbehaviour. Proper parenting education during pregnancy and monitoring and home visits after birth can potentially train parents in appropriate practices. However, to be effective, parent training must be adapted to environmental and individual factors. A meta-analytic review conducted by researchers at Dalhousie University suggests that socio-economic status and maternal mental health are particularly salient factors in determining the effectiveness of parent training. A lack of financial security can cause

---

18. Asher Ornoy et al., The Developmental Outcome of Children Born to Heroin-Dependent Mothers, Raised at Home or Adopted. Child Abuse Negl. 1996 20(5), 385
mental distress, which reduces the motivation and consistency of implementing the knowledge learned in training. Moreover, a parent forced to work for financial reasons will be absent from the care giving role, but, often the potential expense of appropriate childcare is prohibitive.

b. Socio-Economic Status

Low socio-economic status has been correlated with a negative response to parent training, and a consequent parental inability to deal with externalizing behaviour problems in the child. As will be discussed below, it is the consequences of the low socio-economic status, rather than the poverty itself, that prevents proper development.

IV. Early Childhood Development

James Heckman has pointed out that children’s learning patterns become set before they begin their formal education. Specifically, he states that “cognitive ability is formed relatively early in life and becomes less malleable as children age”. In a report to the Government of Ontario, known as The Early Years Study, McCain and Mustard elaborate, showing that critical periods for brain development linked to vision, emotional control, response and symbol cognition are complete by age three; and that language abilities, the ability to learn peer social skills and other cognitive skills are waning by age six. In the years since the 1999 Study, research has further strengthened these conclusions. The period from birth to age three is widely agreed upon as the most crucial developmental period of a child’s life and it can be affected by many factors.

a. Appropriate Home Environment

An important study by Jeanne Brooks-Gunn of Columbia and Greg Duncan of Northwestern demonstrates that the income available to the family when the child is young determines a child’s schooling attainment, not family income at later ages.

A report by the Canadian Council on Learning has recently said, “We know that skilled readers continually have higher academic scores and have the best chance of lifelong success. Parent-child activities that provide the best advantage to young children as they move into literacy include: providing access to books, reading storybooks with a child, offering writing implements, paper and a writing surface, playing games that encourage alphabet knowledge, have regular informative conversations with the child, and exposing children to adult reading activities.”

---

23 Reyno & McGrath, supra, n.22, p. 107
24 Reyno & McGrath, supra, n.22, p. 99
26 Heckman, supra, n.25
27 http://www.founders.net/ey/home.nsf/a811f0e8afbb2a7985256786003a3dd9/1e4ad2a677be034685256a4700737a3b/$FILE/early_years_study.pdf as cited in the VBOT ECD Report July 1999
In the past decade, there has been a “clear shift in the belief of what is required to assist a child’s literacy development, from incidental learning to directed learning.”

i. Household Effects: Learning and Nutrition

Children whose mothers have lower levels of education will be more likely to have below-average academic results. Similarly, children born in lower socio-economic strata also score lower in literacy and other academic areas.” However, performing regression analyses on National Institute of Child Health and Human Development data, the Canadian Council on Learning has found that it is the home environment provided to the child that affects subsequent academic achievement. The analyses showed that educated parents were better able to provide a more stimulating home environment, encouraging skills such as patterned speech, spatial relationship, numbers, colours, and reading. Overall, children of educated parents have more support and better access to activities, as well as greater access to a nutritious diet.


All forms of malnutrition’s broad spectrum are associated with significant morbidity, mortality, and economic costs.”

Such costs might include crimes committed by those with developmental problems that result from lack of nutrition. Programs that deal with lack of nutrition reach back to the prenatal stages. One such program is the Canada Prenatal Nutrition Program Statistics show that about 20 per cent of the women who came to this program were under 20 years old, 23 per cent were self-identified Aboriginals, and 30 per cent were relatively new to the country.

iii. Neighbourhood Effects

Using the Early Development Instrument (EDI), Dr. Clyde Hertzman and the Human Early Learning Partnership (HELP), mapped the physical, social, emotional, cognitive and general development of children across British Columbia. Measures of these developmental areas assessed school-readiness in different geographic groups.

The EDI showed that “young children thus appear more susceptible to social vulnerabilities in neighborhoods where responsibility for parenting falls to parents, typically mothers, who cannot count on a partner for support or respite from care.

31 CCL, supra, n.30
32 CCL, supra, n.30
giving.” Furthermore, “social vulnerability does not appear to concentrate primarily in low-income homes. While income dynamics matter, it is the income level of households in the middle of the neighbourhood range that predicts vulnerability on this scale. This finding suggests that programs, which target economically disadvantaged homes, will risk missing the majority of socially vulnerable children.” Similarly, the EDI measures of emotional vulnerability were correlated with neighbourhood characteristics like unemployment rates, rather than with individual household poverty.

These findings point to the fact that environment beyond the parents and household can play a decisive factor in early childhood development. In a speech to the Canadian Education Association, Hertzman stated that “within some of the richest communities in the province – and in fact in the country – we still have neighbourhoods that, if they were school districts on their own, would be high vulnerability school districts.” Moreover, there are “places that are relatively low socio-economic [status] but are much less vulnerable than we would predict from their socio-economic status.”

b. Appropriate Education

Jeanne Brooks-Gunn notes that though the effects of early childhood education programs ‘fade-out’ somewhat with age, there are significant effects through to adulthood. Given the tremendous long-term impact of early child development, there have been many studies on factors that shape development.

Appropriate Supervised Peer Environment

Recent research has found that when parents are given the proper early learning resources for use at home, pre-school children are better prepared for school and learning. Parents have been shown to exert the most influence on children’s’ lives. Beyond this, quality institutional childcare has been shown to provide the child with opportunities to interact with peers and age-appropriate stimulation. According to research reviewed by the Canadian Council on Learning, quality institutional child care must be safe, and must have low educator/child ratio, educators with higher education themselves, and facilities and materials available to stimulate the child’s development in the appropriate environment. Research shows that all children benefit from quality institutional childcare, independent of home environment.

37 Kershaw, supra, n.36, p. 88
38 Kershaw, supra, n.36, p. 96
39 Canadian Education Association. What do we know about early learning and what are we doing about it? (Clyde Hertzman speech transcript). Retrieved June 12, 2006: http://www.cea-ace.ca/media/Hertzman_Transcript.pdf, p. 2
of the Childcare Resource and Research Unit and the University of Toronto has echoed the criteria for quality childcare in its review:

- Safety
- Good hygiene
- Good nutrition
- Appropriate opportunities for rest
- Promotion of equality of opportunity regardless of gender or other differences
- Opportunities for play and for the development of motor, social, language and cognitive skills
- Positive interactions with adults
- Encouragement and facilitation of emotional growth
- An environment and practices that support positive interaction among the children

V. Pre-School Years

As mentioned, language abilities and peer social skills are still developing at the pre-school age. Though the parents play an important role in this stage of the child’s life, a proper program that supports development is essential. In addition, a proper pre-school education should enhance abilities that have been developed, and should detect developmental deficiencies in children at an early stage while providing a safe and nurturing environment. A quality pre-school offers all of the same components as quality childcare, while emphasizing structured development.

a. Attention to Development

Prior to entering school, only parents, doctors and caretakers might notice developmental problems in the child. As part of a parenting program, parents especially should be taught to look out for deficiencies. Doctors may also test for learning and developmental problems as a part of the regular physical examination.

b. Identification of Learning Disabilities

“Identifying children at risk of low language and literacy development is another critical step in the process of fostering literacy skills in preschool children. But traditionally, assessments do not take place until a child is well into his or her school years, when interventions are more costly and difficult to implement. Again, this underscores the importance of early assessment and directed learning in the early years.”

Practically, it is difficult to ensure that children are universally assessed for learning disabilities prior to entering kindergarten. However, with proper parenting education, parents can monitor their children for appropriate development. In addition,


44 CCL, *How Parents Foster Early Literacy*, supra, n.30
the majority of children will visit a doctor within the first few years of their lives. Training family pediatricians to actively assess developmental disabilities in children should be investigated. Often, however, residents of low socio-economic neighbourhoods don’t have access to pediatricians. Extending such training to clinics in certain target neighbourhoods may provide added benefits and should be investigated.

VI. Factors During Elementary School

In a paper for The Learning Partnership, Dr. Ben Levin, Ontario Deputy Ministry of Education and Professor at the University of Manitoba, says, “increased educational attainment is positively correlated with every single important positive life outcome. More education is linked to better labour force attachment, higher incomes, better health, fewer accidents, longer life, greater volunteerism, more civic involvement, greater tolerance, and so on.” For many children in Canada, formal education begins at the age of 4 or 5. It would benefit children and society if behavioural problems, adverse home environments and learning problems were detected upon entry to school. Only then can intervention and corrective measures be effective.

ii. Reading Level and School-Readiness

Ensuring that students achieve a grade appropriate reading level by Grade 3 has been noted as a crucial goal. The main reason for this is that beyond Grade 3, the school curriculum does not accommodate those students who cannot read, causing them to fall further behind. This increases detachment from school and elevates the risk of drop out. For this reason, it is important to detect learning problems early on. Current Foundational Skills Assessments conducted in Grade 4 are not nearly as effective as a test conducted upon entry to kindergarten.

The overrepresentation of illiteracy in the prison population suggests a correlation between reading capacity and criminal behaviour. The 1996 National Adult Literacy Survey (NALS) in the United States included 1,100 inmates. 7 in 10 inmates were functionally illiterate, virtually unchanged from a similar 1992 survey. Only 51 per cent of inmates had a high school diploma, compared to 76 per cent of the United States population. Research suggests that a considerably higher proportion of prisoners have learning disabilities than the general population (including 75-90 per cent of juvenile offenders). The figures are similar in Canada. In 1997, the John Howard Society reported that 75 per cent of Canadian inmates have low literacy skills, and that over one-third of offenders have not completed a Grade 9 education. In fact, the average education for those serving sentences of two years or more is seventh grade.

46 F. Thompson, personal communication, June 15, 2006.
Recent statistics from Correctional Service Canada report a decreasing trend in prison literacy rates. In 2005, 60 per cent of inmates functioned below a high school entrance level, and 90 per cent of inmates functioned below a high school completion level.\textsuperscript{50}

According to Frank Wood, a researcher at Wake Forest University, statistics gathered from the 2003 National Assessment of Educational Progress confirmed that over 25 per cent of eighth grade public school children in the United States read below a basic level.\textsuperscript{51} This low reading level can cause difficulties in school performance, which may cause depression, stigma, drop out and affiliation with deviant peers.

Dr. Wood has also shown that this deficiency in reading level can be identified, monitored, and corrected with the appropriate testing tool and appropriate supporting intervention.

i. Testing Tools

Predictive Assessment of Reading (PAR)

The Predictive Assessment of Reading (PAR) is a testing tool that has been empirically tested in select states. It is meant for use in the very early elementary grades – kindergarten to Grade 2. It is efficient – it can be administered by the regular teacher in 12 to 15 minutes – and it identifies not only the presence of a deficiency, but the extent of the deficiency, allowing the ‘aiming’ of appropriate supplementary curricula for children with deficiencies. Because the PAR addresses vocabulary and fluency, it gives a more robust prediction of Grade 8 reading levels than other available testing tools. This is especially important given the wide recognition of the ‘late emerging’ low reader, who declines after Grade 3. In addition, the PAR guides teachers and identifies high performers.\textsuperscript{52}

The PAR has led to an overall reduction in risk of reading failure in sample subjects by producing important skill gains through remedial support, intervention and teaching training.\textsuperscript{53}

iii. Learning Problems

Many of the learning problems with respect to reading stem from dyslexia, a neurological difference that can result in poor spelling and word recognition. If undetected early in elementary school, it can prevent children from learning to read and generate the appropriate vocabulary, despite average or above-average intelligence.\textsuperscript{54}


\textsuperscript{51} F. Wood, personal communication to Dave Park, July 26, 2006.


\textsuperscript{53} Wood et al, supra, n.52

With proper detection, intervention, effort from the student and support from the school and family, dyslexia will not prevent a child from learning to read. However, if this is not done early on, children can become stigmatized and lose motivation, while the school curriculum moves beyond their capabilities.\(^55\)

iv. **Attention Deficit Hyperactivity Disorder (ADHD)**

Attention Deficit Hyperactivity Disorder (ADHD) affects 1 in 30 children, causing hyperactivity, impulsivity and poor attention, which may interfere with learning. Often, those affected with ADHD also suffer other disorders: conduct disorders, depression, anxiety disorder and personality disorders. This may lead to disruption in family life, social life, and mental health. Because of behaviour and attention problems, students suffering from ADHD often underachieve and become rejected by peers. Statistics show that reading disorders and ADHD often coexist.\(^56\) By teenage years, half of ADHD sufferers experience school failure, and about one third will not finish high school.\(^57\)

In addition, these disruptions and problems may lead to increased involvement with the justice system: 40 per cent of boys with untreated ADHD will be arrested for a felony by the time they are 16 and up to 70 per cent of juvenile offenders may have ADHD. The correlation between involvement with the justice system, learning disability and ADHD has been mentioned in a number of articles.\(^58,59\) However, a proper treatment plan has been shown in at least one study to reduce involvement with the justice system. Dr. T. Dwaine McCallon at the Buena Vista Correctional Facility in Colorado followed 41 released prisoners who underwent treatment. After 2 years, the recidivism rate for that group was about 1 in 20, compared to 53-58 per cent in the United States nationwide.\(^60\) More generally, it appears that providing remedial instruction, behavioural modification strategies and treatment can substantially reduce the risks associated with ADHD.\(^61\)

iv. **Immigration**

Though many immigrants have excellent command of the English language, immigrants to Canada are over-represented in the lowest reading proficiency category in the International Adult Literacy Survey.\(^62\) Likewise, immigrant children were found to be

---

\(^{55}\) C. Ungerleider (Executive Director – Canadian Council on Learning), personal communication, June 12, 2006


\(^{57}\) Kathy Baker, *Managing The Impact of ADHD on Reading Achievement*, The Australian Association on Research Education.


\(^{61}\) F. Thompson, personal communication, October 5, 2006.

“more likely to start school with less-developed reading, writing and mathematics skills”, though many will bridge the gap before the end of elementary school.63

VII. Factors in ‘Transition Stage’

The shift from childhood to adolescence has been recognized as a significant developmental period in a child’s life, second in importance only to early childhood development. Research has shown that in this transition stage the child is transformed neurologically, hormonally, cognitively and socially. This can cause changes in self-image and social interaction, which may increase risky behaviour. Such behaviour elevates the possibility of the youth becoming involved in criminal activity.64

a. Changes in the Child

Biological changes in the child during transition to adolescence include unstable functional levels of neurotransmitters, transformations in the brain that affect abstract thinking and problem solving, as well as hormonal changes. Research has shown that some of these changes are involved with irritability and more risk-taking behaviour.

Cognitively, the transition to adolescence is accompanied by growth in representational capacity, which affects the way adolescents view themselves and those around them.65

i. Parent/Teacher Reactions

Parents feel that in this phase of development, their children become detached and they lose potential control. In addition, conflict in the parent-adolescent relationship is seen as a rejection of authority on the part of the child.

Research has shown that though youth in transition are forming new relationships, and they don’t require the same amount of proximity as younger children, attachment with parents continues to exert strong influence during this period of adjustment. Adolescents continue to depend on the sensitivity and attunement of their parents.66 Proper parenting in this stage will lead to continued secure attachment, whereas parent unavailability and rejection is associated with insecure anxious-avoidant attachment, and inconsistent parenting is associated with insecure anxious-ambivalent attachment. These latter insecure attachment styles can inhibit the proper growth in adolescence and affect the healthy transition to adulthood.67 More precisely, insecure attachment is correlated with suicidality, illicit drug use and aggressive and delinquent behaviour in adolescents.

64 Marlene Moretti and Maya Pelad, *Adolescent-Parent Attachment: Bonds that support healthy development*. Paediatric Child Health, Volume 9, Number 8, October 2004, p. 551
67 Moretti, *supra*, n.25, p. 553
ii. Consequences (Behavioural Disorders and Their Effects)

The biological changes in the child, combined with insecure attachment to parents, may result in substance addiction, anti-social behaviour, and conduct disorders. In the long-term, youth with conduct disorder have been shown to be at higher risk for mental health problems and involvement with criminal activity. In addition, cognitive changes that cause a negative view of the world may cause depression and conflicted relationships, which may cause strain in the parent-child relationship.

b. Preventative Measures

Early prevention of serious childhood conduct disorder is the most effective strategy. This can be done by addressing the root causes: hard and controlling parenting, lack of child compliance, increased aggression toward parents, and coercive parent-child interaction patterns.

c. Intervention Practices

The most effective interventions are those that address parenting behaviour and educate parents about the dynamics of the transition phase. Such interventions follow a ‘developmental perspective’ on attachment and can target high-risk groups. Specifically, in her recent articles, Dr. Marlene Moretti suggests that helping parents to reframe the meaning of conflict as an opportunity to build their relationship with their adolescent child can be of great assistance and that public health initiatives should encourage parents to stay connected with their adolescents. This would help change the general impression that parents and society hold about adolescent disinterest and rebellion.

VIII. Street Youth

a. Precipitating Factors

Factors that lead youth to live life on the street include: poor family cohesiveness, association with street youth, illicit drug use and involvement in the sex trade. Often, the general precipitating factor is a ‘lack’ in the youth’s life. This lack can take the form of failure in school (possibly due to learning problems that were not detected or corrected), poverty (lack of resources and opportunity), or emotional absence (when a single parent is either busy or depressed, when a wealthy family does not take the time to offer a strong emotional presence, or if the child is continually moved from one foster family to another).

Such a ‘lack’ may lead youth to turn to self-medication, which may lead to addiction, or to association with delinquents, which may offer a false sense of stability, power and control.

---

68 Obsuth, supra, n.26, p. 6
69 Obsuth, supra, n.26, p. 8
70 M. Moretti (Professor – Simon Fraser University School of Criminology) personal communication, June 15, 2006.
71 Moretti, supra, n.25, p. 553
b. Intervention

Proper intervention techniques require building relationship with youth. Sandy Cooke, retired director of Covenant House Vancouver, speaks of the community-based treatment necessary to positively affect street youth. Coordination of such community-based services is necessary to provide a steady figure in the youth's life. Likewise, the sentiment among those who work with street kids is that a 'one-size-fits-all' facility will not produce the desired results. Services must be voluntary, approachable and available to youth.

Examples of services that have grown organically from within a community are the many programs developed at the Ray-Cam Community Centre in Strathcona. These voluntary programs use relationship-building models; redirect thrill-seeking behaviours and foster resiliency in youth using social inclusion.

IX. Factors in High School

a. High School Culture

A New Zealand study of 1,265 youth between the ages of 14 and 21 showed that affiliating with deviant peers was associated with violent crime, property crime, alcohol abuse, cannabis abuse, and nicotine dependence. More generally, the study concluded that deviant peer affiliations are associated with increased rates of a range of adjustment problems in adolescence/young adulthood, and that these affiliations were more influential on younger youth.

Anne Jordon of the Ontario Institute for Studies in Education at the University of Toronto conducted a review of the literature which showed a culture of anti-intellectualism among secondary school students. At the same time, there is a stigma associated with alternative education and school-to-work programs, which prepare youth for trades rather than university.

Clearly, high school is a period where behavioural problems and learning difficulties manifest themselves increasingly. It is also a potent period for beginning to educate youth on appropriate parenting techniques, and risk reduction behaviours.

---

72 S. Cooke, personal communication, June 27, 2006.
73 J. McGuire (non-profit consultant), personal communication, June 28, 2006.
74 C. Brown (Director – Ray-Cam Community Centre), personal communication, July 6, 2006.
b. Gambling and Youth

The International Centre for Youth Gambling Problems and High-Risk Behaviours conducted a survey showing that 9 per cent of high school students, mostly male, gambled for money on the Internet. Many youth who haven’t gambled for money have played on ‘practice sites’.\(^\text{78}\) Around the world, 80 per cent of high school students report having gambled for money within the past year, and 14-22 per cent either have a gambling problem or are at-risk to develop one.\(^\text{79}\) Studies reported by the Youth Gambling Institute have shown that the average problem gambler started gambling at the age of 10, that problematic gambling has been correlated with poor performance in school, increased delinquency and criminal behaviour.

It is unclear whether gambling causes poor performance in school and other behavioural problems, or whether it is a result of such problems. The Youth Gambling Institute summarized the following characteristics of youth gamblers:

- more likely to be boys
- overly represented compared to adult gamblers
- greater risk takers
- lower self-esteem
- higher rates of depression
- more likely to develop addictions
- more anxious
- greater risk for suicide
- acquaint with other gamblers
- poor coping skills
- begin at age 10, on average
- often have parents, relatives, or friends who gamble
- more likely to be delinquent and involved in criminal activities
- perform worse in school\(^\text{80}\)

c. Exposure to Illicit Drugs

Despite laws and school regulations, illicit drugs are quite readily available in both high schools and elementary schools. Youth reported having access to all types of drugs within 24 hours.\(^\text{81}\) In a 1995 survey by Prevention BC, the results showed that 32 per cent of Grade 8 students had tried marijuana, 49 per cent had tried smoking tobacco, and 60 per cent had consumed alcohol. In 1998, a McCreary Centre Society study found that 63 per cent of students had consumed alcohol at some point in their lives. In a 2002 survey of almost 1,400 youth in six Lower Mainland communities, Pacific Community Resources found that usage rates for all illicit drugs had increased. For example, 62 per


\(^{80}\) Youth Gambling Institute. *supra*, n.30

cent of respondents had used marijuana and 77 per cent had consumed alcohol.\textsuperscript{82} These results suggest that use of illicit drugs or alcohol may be greater among Lower Mainland students than among their United States peers.\textsuperscript{83}

d. Addictive Predisposition to Illicit Drugs or Alcohol

Given the availability of illicit drugs to students, it is important to identify risk factors that increase potential for drug abuse. According to a National Institute on Drug Abuse (NIDA) report, there is no single factor that can determine addiction. Instead, addiction is the outcome of a developmental trajectory guided by 'risk' factors and 'protective' factors (or, assets\textsuperscript{84}) that arise at different domain levels. The interplay between these factors will affect different individuals differently and will play a greater or lesser role in addiction depending on age. In general, “an important goal of prevention is to change the balance between risk and protective factors so that protective factors outweigh risk factors”.\textsuperscript{85}

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Domain</th>
<th>Protective Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Aggressive Behaviour</td>
<td>Individual</td>
<td>Impulse Control</td>
</tr>
<tr>
<td>Lack of Parental Supervision</td>
<td>Family</td>
<td>Parental Monitoring</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>Peer</td>
<td>Academic Competence</td>
</tr>
<tr>
<td>Drug Availability</td>
<td>School</td>
<td>Antidrug Use Education/Policies</td>
</tr>
<tr>
<td>Poverty</td>
<td>Community</td>
<td>Strong Neighbourhood Attachment</td>
</tr>
</tbody>
</table>

Reproduced from NIDA: Preventing Drug Use among Children and Adolescents\textsuperscript{86}

Theories of drug addiction include biological cause (a family history of addiction that predisposes an individual) and environmental cause (using illicit drugs causes affiliation with other users which exposes an individual to new drugs).\textsuperscript{87} Those that escalate usage to the point of addiction include youth that “are the most likely to have experienced a combination of high levels of risk factors with low levels of protective factors”.\textsuperscript{88} These adolescents were characterized by high stress, low parental support, and low academic competence.\textsuperscript{89} Furthermore, major transitions in children’s’ lives, such as physical growth, change of schools, or a divorce, are shown as key risk periods where children are more likely to develop problem behaviours, which can lead to subsequent drug use.\textsuperscript{90}

To prevent drug use and subsequent addiction, the NIDA report points to signs of risk in infancy. For example, withdrawn and aggressive boys often have interaction

\textsuperscript{82} PCR, pp. 5-8
\textsuperscript{86} NIDA, \textit{supra}, n.82, p. 6
\textsuperscript{87} NIDA, \textit{supra}, n.82, p. 9
\textsuperscript{88} NIDA, \textit{supra}, n.82, p. 18
\textsuperscript{89} NIDA, \textit{supra}, n.82, p. 11
\textsuperscript{90} NIDA, \textit{supra}, n.82, p. 9
problems, which can in turn lead to academic failure, detachment from school, affiliation with deviant peers and subsequent drug addiction.\textsuperscript{91} In addition, neurological and genetic research has demonstrated a predisposition to addiction in certain individuals. If exposed to alcohol or illicit drugs, individuals who are genetically predisposed are more likely to become addicted than the average individual. While some studies discount the role of predisposition,\textsuperscript{92} other studies mention that likelihood of addiction upon exposure to illicit drugs or alcohol in individuals with predisposition can be as high as 50 to 90 per cent.\textsuperscript{93,94}

Like with other youth development problems, early intervention is easier and less costly.\textsuperscript{95}

\textbf{e. Graduation from High School}

Given the increasing competition in the labour market, high school dropouts are at a disadvantage to those with a high school diploma. The Canadian Council on Learning mentions that unemployment for 25- to 44-year old dropouts was 12 per cent, compared to 7 per cent for those who completed high school.\textsuperscript{96}

With that in mind, programs should address youth at risk of not completing high school. Dr. Ben Levin defines an ‘at-risk’ student as “one whose past or present characteristics or conditions are associated with a higher probability of failing to attain desired life outcomes”.\textsuperscript{97} Such outcomes include graduation, positive labour force attachment, higher income, less involvement in crime, and better health.

Factors that increase the risk of dropout are both internal and external. “Increasingly, the concept has expanded from one based on presumptions of deficit in the learner to encompass sensitivity to the educational, home and community environments of children’s and youth’s development.”\textsuperscript{98}

Specific examples of risk factors from the literature that Dr. Levin reviewed include:

- Low socio-economic status, leading to poor mental health, physical health, and lost opportunities
- Low parental education (especially the mother’s)

\textsuperscript{91} NIDA, \textit{supra}, n.82, p. 8
\textsuperscript{92} Tina Hesman Saey, \textit{Drug use can damage the brain and lead to addiction}. St. Louis Post Dispatch. April 1\textsuperscript{st}, 2006.
\textsuperscript{95} NIDA, \textit{supra}, n.82, p. 25
\textsuperscript{97} Levin, \textit{supra}, n.45, p.6
• Punishing parenting style
• Adolescent parenthood
• Problems in child development
• Poor labour market
• Living in a deprived neighbourhood
• Lack of community support
• School populated by disadvantaged youth
• Loss of a parent (through death or divorce)\(^99,100\)

In addition, the Canadian Council on Learning has pointed out that youth in rural areas achieve less than those in urban areas, and they are at higher risk for dropping out of high school. The council attributes this gap to less available qualified teaching staff and fewer skilled labour jobs in rural areas.\(^101\)

It is evident that these factors are analogous to those affecting other areas of development discussed in this report. As discussed, some of these factors may begin to affect children even before birth. Many of these factors stem from influences beyond school — “inequities in education may be primarily the result of other social inequities rather than of school practices. It is also possible that the most effective points of intervention lie outside the schools.”\(^102\) Thus, Dr. Levin suggests a preventative strategy that includes early childhood programs and integrated support services.

X. Dual-Diagnosis Individuals

Dual-diagnosis refers to the combination of mental illness and substance abuse.\(^103\) Mental illness may precipitate self-medication with illicit drugs or alcohol.\(^104\) Surveys show that about 50 per cent of those with mental illnesses are also addicted to drugs or alcohol. This is much greater than the proportion who may be addicted in the general population.\(^105\) Traditional treatment methods such as confronting and discouraging illicit drug or alcohol use are ineffective with dual-diagnosis individuals.\(^106\)

Dual-diagnosis individuals often end up jobless, homeless, in poor health and involved with the criminal justice system. Recent statistics show that up to 16 per cent of

\(^99\) Levin, supra, n.45, pp.11-18
\(^102\) Levin, p.30
\(^103\) Vancouver Coastal Health Authority. Vancouver Coastal Health Dual-Diagnosis Program: Dual-Diagnosis what does it mean? Retrieved August 1, 2006: http://www.vch.ca/community/ddp_index.htm
\(^105\) National Alliance on Mental Illness. Dual-Diagnosis and Integrated Treatment of Mental Illness and Substance Abuse Disorder. Retrieved August 1, 2006: http://www.nami.org/Template.cfm?Section=By_Illness&Template=/TaggedPage/TaggedPage_Display.cfm&TPLID=54&ContentID=23049
\(^106\) National Alliance on Mental Illness, supra, n.102
prison inmates in the United States have been dual-diagnosed.\textsuperscript{107} This is much higher than the 1-3 per cent prevalence in the general population.

Given this overrepresentation, it is important to offer intervention services targeting these individuals, and prevention services that target mentally ill youth before they become addicted to illicit drugs.

\section*{XI. Aboriginal Youth}

Aboriginal youth have a risk trajectory similar to that described throughout this report, but research mentions overrepresentation of Aboriginals in many of the risk categories. Similarly, statistics show an overrepresentation of Aboriginals in the prison population, which may be the outcome of greater exposure to risk factors.

Figures from the Census of Canada and from the Aboriginal Peoples Survey show that Aboriginal youth are much less likely to receive a high school diploma than non-Aboriginal youth. In fact, despite improvement in overall graduation levels in British Columbia,\textsuperscript{108} the gap between Aboriginal high school graduation and non-Aboriginal high school graduation has only shrunk modestly in recent years, to a difference of 35 per cent. In the 2003-2004 school year, 46 per cent of self-identified Aboriginal students in British Columbia received a diploma, compared to 81 per cent of non-Aboriginals. As discussed, the current competitive labour market is increasingly difficult to penetrate without a high school diploma, putting Aboriginal students as a group at a distinct disadvantage.\textsuperscript{109}

In general, Aboriginal youth are at greater risk to succumb to many of the negative factors in the trajectory outlined throughout the report. For example, the Aboriginal Initiatives Directorate at Correction Service Canada writes that “the Aboriginal woman offender is generally 27 years old with a Grade 9 education and single with two or three children. She has limited education and employment skills and she is usually unemployed at the time of her crime.”\textsuperscript{110} The Directorate mentions contributing factors such as moving to an urban centre, alcoholism and violence, lack of familial support and lack of social interaction.

\subsection*{a. Residential Schools}

Throughout much of the previous century, government initiatives attempted to assimilate Aboriginals into Canadian culture. This was often done through residential schools funded by government and run by churches. There, Aboriginal youth would spend up to 10 months of the year speaking English and living away from home. Research has shown that family is an especially important component of Aboriginal

\textsuperscript{107} National Alliance on Mental Illness, \textit{supra}, n.102
lifestyle.\textsuperscript{111} In addition to the documented cases of overt abuse (psychological, sexual and physical), residential schools prevented youth from establishing bonds with their families and prevented the formation of traditional Aboriginal parenting skills. This has created a cycle that may perpetuate itself in current Aboriginal youth.

b. Involvement with Different Government Services

Since the 1960’s, many Aboriginal children have been in foster care. \textsuperscript{112} “Aboriginal children account for approximately 9 per cent of the child population in British Columbia, but make up 49 per cent of children-in-care and 42 per cent of youth-in-custody.”\textsuperscript{113} In Canada, Aboriginal youth make up 4 per cent of the population, but made up 15 per cent of the alternative measures cases.\textsuperscript{114} Aboriginal youth are similarly overrepresented in custody and on probation.\textsuperscript{115} Aboriginal adults are also overrepresented: making up 2 per cent of the population in Canada, but accounting for at least 18 per cent of inmates and 13 per cent of offenders on probation.\textsuperscript{116}

c. Child Death Rate

The British Columbia Coroner’s Child Death Review speaks to the amplified risk to youth in the Aboriginal pre-natal and post-natal environment:

“There were a disproportionately higher number of deaths of Aboriginal children in BC. Approximately 20 per cent of reviewed deaths were of Aboriginal children, although Aboriginal children comprise less than 10 per cent of the population of BC.”\textsuperscript{117} The report elaborates that Aboriginal children made up 26 per cent of Sudden Unexpected Infant Death\textsuperscript{118}, and 27 per cent of deaths while receiving services from the Ministry of Children and Family Development.\textsuperscript{119} Moreover, the lower average birth weight of Aboriginal children elevates their risk of death from disease during their first two years.\textsuperscript{120}

Though such problems are not limited to the Aboriginal population, the overrepresentation suggests that early in life, Aboriginal children are exposed to many of the negative factors that increase risk of future criminal behaviour.

\textsuperscript{111} Correction Service Canada, \textit{supra}, n.107
\textsuperscript{112} Correction Service Canada, \textit{supra}, n.107
\textsuperscript{113} Ministry of Children and Family Development 2006-2007 Budget and Workplan
\textsuperscript{115} Statistics Canada, \textit{supra}, n.111, p. 8
\textsuperscript{118} PSSG, \textit{supra}, n.38, p.23
\textsuperscript{119} PSSG, \textit{supra}, n.38, p.34
\textsuperscript{120} PSSG, \textit{supra}, n.38, p.19
d. Learning Differences

The school system and curricula in Canada have been designed to serve a broad-based population, but there are shortfalls pertaining to particular ethnic groups, such as Aboriginals and immigrants.

A 1997 report for the Annual Conference of the Australian Association for Research in Education details Aboriginal learning differences. For example, historically, the Aboriginal society was a non-literate society where elders transferred knowledge. Youth learned through observation and imitation rather than instruction. Thus, learning was largely unstructured and practical, focusing on cooperation rather than competition. Students who are educated in a context different from these traditions are at greater risk of failure.\(^\text{121}\)

This greater failure is evident in high school completion rates: only around 41 per cent of Aboriginal students complete high school, as compared to almost 70 per cent nationally.\(^\text{122}\) As mentioned, though this completion rate is higher than in previous decades, Aboriginals are lagging further behind other Canadian youth. In an ever-competitive labour force, this greater discrepancy translates into fewer opportunities.

Charles Ungerleider of the Canadian Council on Learning points to the mobility of Aboriginal youth as a deterrent to proper education. On average, Aboriginal youth change schools more often than their peers. The school system is not designed to accommodate such arrivals and departures, and teachers thus do not have the resources to bring children up to speed when they do not begin the school year in that classroom.\(^\text{7}\)\(^\text{123}\)

XI. CONCLUSIONS

It is essential that factors potentially contributing to criminal development not be viewed individually, but rather as a continuum. It is possible that the presence of any developmental risk factors can lead an individual towards chronic criminal activity. It is likely that the presence of more risk factors will increase the likelihood of becoming a criminal. This correlation may explain the overrepresentation of certain populations in Canadian prisons as mentioned in this the report.

It is also evident that prevention is preferable to intervention. Throughout development from birth to adulthood, the earlier the risk factors are detected and addressed, the greater likelihood that prevention will be successful. Early prevention is likely to consume fewer resources, in terms of time and effort, than later intervention. This may translate into a cost-benefit in favour of prevention, as demonstrated by previous research. The current amount of crime in Canada also shows the merit of addressing needs for intervention.


This review and model of influences on criminal development may be best viewed as a catalyst to further work on the topic. The model calls for greater emphasis on interdisciplinary research and discussion to address criminal development from many perspectives throughout youth and adolescence. There is merit in pointed research on outcomes for combinations of risk factors. The model also calls for a review of delivery of support at all levels – from the family, from the community and from government. It is evident that integration is necessary not only for efficiency’s sake, but for effectiveness. Thus, proper coordination must be emphasized while looking for positive outcomes at the individual level.

Above all, this model demonstrates that there are many risks in childhood and adolescence, but that there are also many opportunities to minimize those risks. The benefits of risk reduction go beyond a drop in criminal activity to include more cohesive families, better-functioning schools, a larger skilled workforce, and less reliance on health services and social services. Thus, the positive impact of risk reduction is potentially far-reaching and should be addressed as a matter of priority.
APPENDIX: outcome model of crime, deviance and informal social control during development


**STRUCTURAL BACKGROUND FACTORS**
- Family Economic Disadvantage
- Disrupting Events
- Greater Family Size
- Residential Mobility
- Parent's Deviance
- Household Crowding
- Foreign-born (immigrant parent)
- Mother's Employment

**INDIVIDUAL DIFFERENCE CONSTRUCTS**
- Difficult Temperament
- Persistent Tantrums
- Early Conduct Disorder

**SOCIAL CONTROL PROCESSES**
- **FAMILY**
  - Lack of Supervision
  - Threatening/Erratic/Harsh Discipline
  - Parental Rejection
- **SCHOOL**
  - Weak Attachment
  - Poor Performance
- **DELIQUENT INFLUENCE**
  - Association with Delinquent Peer Group
  - Attachment to Delinquent Siblings

**JUVENILE OUTCOMES**
- Delinquency
  - Length of incarceration

**ADULT DEVELOPMENT**
- Crime and Deviance
  - Social Bonds
    - Weak Labour Force Attachment
    - Weak Marital Attachment

---

**CHILDHOOD (0-10)**

**ADOLESCENCE (10-17)**

**TRANSITION TO YOUNG ADULTHOOD (17-25) & YOUNG ADULTHOOD (25-32)**