

## First Peoples Child & Family Review

A Journal on Innovation and Best Practices in Aboriginal Child Welfare Administration,  
Research, Policy & Practice

# Adolescence: A Window of Opportunity for Positive Change in Mental Health

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Volume 3, Number 2, 2007

Special Issue: Adolescent development, mental health, and promising research directions for Aboriginal youth

URI: <https://id.erudit.org/iderudit/1069457ar>

DOI: <https://doi.org/10.7202/1069457ar>

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### Publisher(s)

First Nations Child and Family Caring Society of Canada

### ISSN

1708-489X (print)

2293-6610 (digital)

[Explore this journal](#)

### Cite this article

Wekerle, C., Waechter, R., Leung, E. & Leonard, M. (2007). Adolescence: A Window of Opportunity for Positive Change in Mental Health. *First Peoples Child & Family Review*, 3(2), 8–16. <https://doi.org/10.7202/1069457ar>

### Article abstract

Adolescence is a period of development characterized by risk-taking, sensation-seeking, emotionally-influenced and independence-seeking behaviours. There is a move away from family and towards the social influences of peer groups. Emotionally-driven behaviours may override adolescents' higher cognitive functioning during this time. Especially vulnerable are youth who have been the victim of high-impact trauma or chronic abuse and neglect. Specifically, the posttraumatic stress symptomatology that is often associated with experiences of abuse and neglect may impair the ability of youth to cope during this developmental period. This is where intervention by community workers may be used to support teens with a history of maltreatment, as they develop from children to adolescents and, finally, to adults. Part of such intervention includes violence prevention in families and in teen dating relationships, as well as directly addressing posttraumatic stress disorder symptomatology. This critical developmental period of adolescence presents community workers with an opportunity to intervene and guide the development of these youth, building upon resiliency factors, such as areas of individual mastery and empowerment and participation within the community. Aboriginal youth with a history of maltreatment present a special case for community workers. These youth have been subjected to intense acculturation pressures that do not exist for other adolescent populations, which create unique problems during their transition to adulthood. In order to intervene in the most effective manner, it is necessary to understand the psychological and physiological developmental processes that are unfolding in the adolescent brain. We discuss adolescent development in general and among Aboriginal adolescents, in particular. We present ways to support both groups through these challenging periods that are empirically-based and supported by research.

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## Adolescence: A Window of Opportunity for Positive Change in Mental Health

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### Introduction

Adolescence is a window of opportunity to effect positive changes in teen psychological and physical health. It represents a period of change wherein the teen has developed the ability to examine past patterns of behaving. The general pattern of psychological development in adolescence is one in which earlier forms of adaptation are carried forward as “options” in behavioural responses. With exposure to and engagement in new developmental challenges, opportunities for shifting stylistic response sets and learning more adaptive, healthful behaviours exist.

This opportunity to develop more adaptive, healthful behaviours is especially important among adolescents with a history of maltreatment. These youth are more likely to engage in risky or unhealthy behaviours as they make the transition from children to adults. Unhealthy patterns of relating to others that were solidified during chronic maltreatment may be

### Abstract

Adolescence is a period of development characterized by risk-taking, sensation-seeking, emotionally-influenced and independence-seeking behaviours. There is a move away from family and towards the social influences of peer groups. Emotionally-driven behaviours may override adolescents' higher cognitive functioning during this time. Especially vulnerable are youth who have been the victim of high-impact trauma or chronic abuse and neglect. Specifically, the posttraumatic stress symptomatology that is often associated with experiences of abuse and neglect may impair the ability of youth to cope during this developmental period. This is where intervention by community workers may be used to support teens with a history of maltreatment, as they develop from children to adolescents and, finally, to adults. Part of such intervention includes violence prevention in families and in teen dating relationships, as well as directly addressing posttraumatic stress disorder symptomatology. This critical developmental period of adolescence presents community workers with an opportunity to intervene and guide the development of these youth, building upon resiliency factors, such as areas of individual mastery and empowerment and participation within the community. Aboriginal youth with a history of maltreatment present a special case for community workers. These youth have been subjected to intense acculturation pressures that do not exist for other adolescent populations, which create unique problems during their transition to adulthood. In order to intervene in the most effective manner, it is necessary to understand the psychological and physiological developmental processes that are unfolding in the adolescent brain. We discuss adolescent development in general and among Aboriginal adolescents, in particular. We present ways to support both groups through these challenging periods that are empirically-based and supported by research.

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carried forward into adult interactions. Considering the psychological and neurological issues that pose a unique challenge to youth with a history of maltreatment versus those without, adolescence can be thought of as a “developmental crossroad” among this population. This crossroad is a period in which effective intervention timed with a natural interest among

Dr. Wekerle is supported by:

- The Canadian Institutes of Health Research (CIHR), Community Action Health Research (CAHR) and the Institute of Gender and Health (IGH), CIHR New Emerging Team (NET) grant
- The Children's Hospital of Eastern Ontario (CHEO) Centre of Excellence in Child & Youth Mental Health
- CIHR/Ontario Women's Health Council Mid-Career Award
- The Public Health Agency of Canada
- The Centre for Excellence in Research in Child Welfare

Eman Leung and Randall Waechter are New Emergent Scientists on the CIHR NET.

adolescents to learn about relationships, emotions, and ways of processing information or understanding their world can have a significant positive impact on their future development.

While child protective services are not mandated to engage in preventative activities, much of the effort to treat teen mental health, relationship, and vocational issues may contribute to the prevention of child abuse and neglect among the siblings, peers, and future children of these teens. A recent US population-based study found that most psychiatric disorders have their onset in adolescence, but treatment for these disorders is not initiated until 10 years later (Kessler, Demler, Frank, Olfson, Pincus, Walters et. al., 2005). This results in a decade of missed treatment opportunities and unnecessary suffering.

This developmental crossroad is further complicated among Aboriginal youth with a history of maltreatment. Evidence continues to indicate that this population experiences childhood maltreatment and interventions for maltreatment differently than non-Aboriginal youth (e.g., Public Health Agency of Canada – Canadian Incidence Study of Reported Child Abuse and Neglect, 2003). For example, nearly 10% of Aboriginal children in Canada (95.3 per 1000) are estimated to have been investigated in 2003 because of alleged maltreatment, which is more than double the rate for non-Aboriginal children (42.2 per 1000) (First Nations Child & Family Caring Society of Canada - Wen:De Report, 2005). Child welfare reports involving Aboriginal children are more likely to be classified as suspected or substantiated than reports for Caucasian children. Aboriginal children are also twice as likely to be placed in foster care (Trocmé, Knoke, & Blackstock, 2004). In fact, Aboriginal children compose approximately 30-40% of all children in child welfare care in Canada (First Nations Child & Family Caring Society of Canada – Wen:De Report, 2005).

The maltreatment experiences of Aboriginal children also differ from non-Aboriginal children in Canada. For example, Aboriginal children are less likely to be reported to child welfare authorities for physical or sexual violence, but are twice as likely to experience neglect (Blackstock, Trocme, & Bennett, 2004). Unlike abuse, which is usually incident-specific, neglect often involves chronic situations that can significantly impact psychological and physiological development. These differences must be considered when intervening with Aboriginal adolescents. From a behavioural perspective, on-reserve youth are more likely to abuse drugs and alcohol and to suffer from depression, anxiety, and learning disabilities than those youth who live off reserve, as well as non-Aboriginal children (First Nations Child & Family Caring Society of Canada – Wen:De Report, 2005).

Aboriginal youth also face the unique challenge of defining themselves as they make the transition from childhood to adulthood. For example, Inuit adolescents are subjected to intense acculturation pressures that do not exist for other adolescent populations. These pressures create problems for youth in their struggle to establish their own identity (Steenbeek, Tyndall, Rothenberg, & Sheps, 2006). These, and all Aboriginal Canadian youth, are asked to negotiate between their culture-of-origin and the wider Canadian one.

Below we outline several key issues in adolescent development. Each section describes current theory and research being conducted in these areas. The purpose of this review is to present the reader with information on adolescent development in general and the special challenges faced by adolescents with a history of maltreatment. Adolescence is a key period of growth wherein evidence-based intervention can have a lasting positive impact on the psychological and social functioning of the individual. Furthermore,

Aboriginal adolescents with a history of maltreatment require targeted intervention to address the specific needs of this subpopulation.

### Key Issues in Adolescent Development

#### *Relationship Development and Attachment Challenges*

According to attachment theory and research, the kind of attachment between parent and child that develops in early childhood will impact relating to others in the future (Bowlby, 1980). This theory suggests that attachment with a parent or caregiver provides the child with an internal concept – a working draft or model of “the self,” “the other,” and “the self in relationship to the other”. Expectations are formed for future relationships, such as “I end up hurt when I get close to others” or “Others tend to ignore me so I have to try harder to get their attention” (Oatley & Jenkins, 2005). In secure attachments, a parent responds consistently to both the positive and negative emotions of a child and builds up the child’s confidence in the parent as a reliable and sensitive responder.

Maltreated children tend to struggle when forming an attachment to others because their negative emotions about relationships may dominate over their positive ones. This means that a big part of relationships – enjoying them, feeling satisfied about how you are in them, not over-focusing on yourself or the other person – is a gap in learning. This can make a teen vulnerable when connecting with others over external things such as using drugs or alcohol, delinquent activities or, more positively, sports. Rather than finding that internal connection that may have greater depth and support potential, the youth may be vulnerable to replicate maltreatment-consistent patterns, such as harm to self and harm to others. Research in psychotherapy and resilience has consistently shown that a long-term supportive or mentoring relationship is a key predictor of better outcomes, both at the time of disclosure of the abuse and across development. This mentoring conveys a consistent message to the teen: (1) the teen is an entirely lovable person, although perhaps with some behavioural learning to do yet (i.e., it is crucial to separate the teens’ behavior from him or her as a person), (2) the teen is cared for in an every day sense (e.g., going to the dentist, getting up-to-date immunizations, learning leisure activities like playing music, sports, and the arts), and (3) the teen’s “big events” are recognized (e.g., birthdays,

celebrations, and whatever the teen defines as a big deal). A mentoring relationship is proactive and prevention-oriented, not just consistently supportive in reacting to crises and issues. Teens learn most of what they think about themselves by relating to others. The caseworker is one of those important others that can help define a teen’s “psychological family”.

Issues of self-confidence, feelings of self-worth, and self-care behaviours may be an especially salient for maltreated Aboriginal adolescents, given the much higher rates of neglect among this population. The youth may carry beliefs of low self-worth stemming from a lack of physical and emotional support and physical care by the abusive parents. Parents or guardians with severe substance use problems may not have been available to provide emotional or physical support for the youth while growing up. Educating the youth about the socioeconomic and historical forces behind instances of substance abuse and neglect in Aboriginal populations is a first step in helping the youth to confront these feelings and beliefs.

#### *Cognitive Development – Negatively Biased Information Processing*

Maltreated youth can become cognitively vulnerable by seeing the negative first. This negative bias arises because hypervigilance for threat became an important and helpful component of their psychological repertoire while growing up. One of the potential problems is self-blame. When a negative event occurs, a teen may view it as the result of an internal character trait (i.e., “I’m bad”, “If I didn’t have bad luck, I’d have no luck at all”), rather than the result of external situational factors. They will see the event as global and likely to happen in all situations, rather than being a temporary “one-off” situation or specific to characteristics of that situation (i.e., “I didn’t do well in that test because I didn’t study as much as I did before when I did do well”).

Furthermore, the maltreated teen may have developed a hostile cognitive appraisals of others’ actions and interpret others neutral or ambiguous actions as having hostile intentions (Oatley & Jenkins, 2005). If you think someone intends to harm you, the logical reaction is to attack first with a pre-emptive strike or avoid that person. Either scenario can lead to an initiation of the fight-flight response when the situation has not yet called for that. To counter these pre-emptive responses, the teen may be guided to re-examine



or “walk through” a situation step-by-step, as if a film captured the sequences, to understand their “why thinking” about the other person’s behaviour. If there is no clear evidence to support the teen’s reaction, then an “ask/check it out” strategy would be most appropriate.

Aboriginal youth may be less likely to experience a negative bias in information processing since they are less likely than non-Aboriginal youth to be reported to child welfare authorities for physical or sexual violence. A negative bias in information-processing is more likely to develop in association with abrupt violent and / or traumatic events most closely associated with physical and / or sexual maltreatment. Eventually, these events lead to alterations in the physiological response of the brain via the stress hormone cortisol and other neurological mechanisms, as discussed below. These alterations in physiology can lead to a hypervigilance for threat and is adaptive for psychological functioning and survival. Future research is required to determine if Aboriginal youth, who are less likely to experience physical and sexual violence, are less likely to experience negatively-biased information processing.

#### *Emotional Development: A Focus on Empathy*

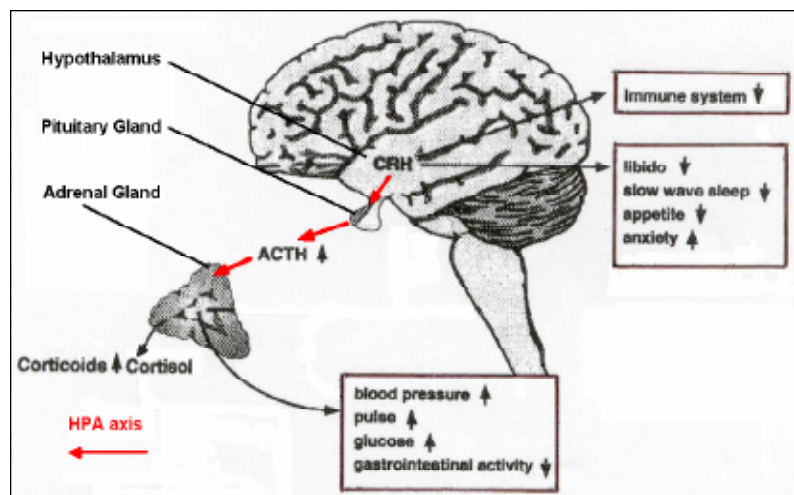
Maltreating families can put a focus on survival, yet witnessing sibling abuse and neglect typically brings out tender emotions and care-giving behaviours, especially with younger siblings. These are experiences upon which the teen can build in a developmentally appropriate way, as opposed to “compulsive care giving” or over-worrying about others. Abstract and conceptual thinking increases in adolescence, which presents a window of opportunity for teaching and promoting feelings of empathy and perspective-taking skills. Empathy allows one to function well in relationships and relate well with others. It is the building block for cooperation (Burmack, Flanagan, Sutton, Zygmuntowicz, & Manly, 2006). General strategies like “giving the benefit of the doubt,” and developing a better language skill to express concerns are built around empathy (e.g., “When you give me that look, I feel unsure and wonder what you are trying to tell me. If you could say what you want in words, then I could be clearer to you”).

Maltreated teens may sometimes get stuck or get into trouble simply because they are not prepared to provide any response. Because they are not ready

to respond, they either freeze or rely on well-worn and best-learned responses, which may be aggressive or place themselves in the victim role. For teens, over-learning a standard way of handling a response (When you...I feel... If you ..., then I...) may be a helpful starter to better verbal communication skills. Research has shown that teens with better self-control skills, such as the ability to inhibit outbursts of anger and aggression and the ability to use verbal rather than physical means of communication, tend to be more advanced in their social lives. These teens are liked by their peers, have larger circles of friends with whom they are able to discuss their feelings, and are less likely to be involved in physical fights. When these youth do disagree with their friends, it becomes an opportunity for self-reflection, consolidating helpful strategies, and increasing the flexibility and size of the behavioural response repertoire.

Maltreated youth often find it challenging to attain balance in their emotional lives. They tend to be overly fearful of maltreatment-related avoidant emotions such as anxiety and panic, which leads to the avoidance of thoughts or situations that may lead to the experiencing of these emotions. While this may not be perceived as a major issue by some, recent research suggests that approach and avoidant-related emotions are capable of influencing cognitive processing (Gray, 2001). As such, the evasion of maltreatment-related avoidant emotions, which are processed in the right hemisphere of the brain, may impact cognitive functions associated with the right hemisphere, such as making judgments and decisions in ambiguous and real-world situations (Goel, Tierney, Sheesley, Bartolo, Vartanian, & Grafman, submitted). It is often the case that decisions which are highly relevant to an adolescent population, such as those regarding sexual health, social relations and substance use, must be made in the context of uncertain, incomplete, and ambiguous information.

One complication of having a stylistic tendency to want to avoid unpleasant emotions is that ways to self-medicate the emotions may be harmful, yet reinforcing, and therefore likely to be repeated. For example, youth may attempt to keep panic, anxiety, depression, numbness, dissociation, and tension/hypervigilance at bay via substance use, engaging in antisocial behavior, or engaging in self-harm/cutting behaviours. Eventually, the avoidance of certain emotions may become a chronic coping strategy. If



**Figure 1.** The Hypothalamic-Pituitary-Adrenal Stress-response axis (adapted from a presentation given by Kathy Hegadoren at the Ontario Women's Health Conference).

CRH = Corticotrophin-releasing hormone  
ACTH = Adrenocorticotrophic hormone

emotions are avoided, then self-protection may be compromised. For example, one teen indicated that she never felt fear, which is not helpful in avoiding situations in which she may be re-victimized. Finally, if emotions are avoided, teens will not gain practice in talking about emotions and developing their vocabulary for expressing their feelings.

Aboriginal teens may require special assistance with confronting the unpleasant emotions associated with a history of maltreatment. These youth have the added pressure of trying to create a self-identity that incorporates their unique cultural background as well as a Canadian one. This challenge is even greater among Aboriginal youth who continue to live on a reserve, which may contribute to the higher rates of anxiety and depression among this population versus Aboriginals living off a reserve and non-Aboriginals (First Nations Child & Family Caring Society of Canada – Wen:De Report, 2005). While teaching expressive language skills and other self-control strategies can help maltreated youth to confront unpleasant emotions, higher rates of learning disabilities among Aboriginal youth (First Nations Child & Family Caring Society of Canada – Wen:De Report, 2005) can make the teaching of these skills challenging. Finally, high rates of alcohol use among this population can offer a “quick” but temporary solution for numbing unpleasant feelings.

## *Brain Development and Physiology: Maltreatment and Neuroendocrine Alterations*

Youth who experience childhood abuse are more likely to show symptoms of hyper-arousal, associated with Posttraumatic Stress Disorder (PTSD). These symptoms might include hyperactivity, anxiety, impulsivity, reliving the traumatic event, intrusive thoughts of the traumatic event, and sleep problems (Perry, Pollard, Blakely, Baker & Vigilante, 1995). These PTSD symptoms map directly onto the malfunction of particular brain regions. These brain regions are themselves susceptible to environmental programming at the initial phase of life, by means of stress-induced activity and influence of the hormone cortisol (Cicchetti and Walker, 2003; Panksepp, 2004). Below is a figure of the brain to guide the discussion on the neurochemistry associated with maltreatment and PTSD (see figure 1).

Chronic stress or repeated traumas associated with maltreatment can have significant impacts on neurodevelopment during childhood and adolescence. This impact in neurodevelopment can then influence higher cognitive functions associated with the cerebral cortex of the brain (Beers & DeBellis, 2002). Exposure to adverse environments early in life permanently alters the “set point” of the Hypothalamic-Pituitary-Adrenal Stress-response (HPA) axis at the level of the hypothalamus, amygdala, hippocampus, and prefrontal cortex. This altered set point may result in a global net increase in HPA activity and cortisol production. Furthermore, changes in the set point may also influence the functioning of specific brain regions and their corresponding cognitive and regulatory functions (Panksepp, 2004).

Recent research has demonstrated that PTSD patients differ from normal controls in terms of HPA axis-related functioning of the 1) Hypothalamus, where there is lower regional activity and poor regulation in arousal and physiological functions, 2) Amygdala, where there is higher regional activity / reactivity and exhibited heightened anxiety to fear-related stimuli, 3) Hippocampus, where there is lower regional activity resulting in poorer memory

consolidation / retrieval and habituation to adverse stimuli, and 4) Prefrontal cortex, where there is lower regional activity resulting in poor impulse control, regulation of mood and attention, and inhibition of distracting thoughts and irrelevant stimuli (Panksepp, 2004; Cicchetti & Walker, 2003). Chronic activation of certain parts of the brain involved in the fear response, such as the amygdala and HPA axis, during episodes of maltreatment and PTSD symptoms (e.g., reliving the event) can “wear out” or impact processing in other parts of the brain that would normally be activated, resulting in an imbalance of functioning (Perry, 2000c). For example, research in non-human primates has found preferential right prefrontal cortex activation in response to elevated stress at the expense of left prefrontal cortex activation (Rilling, Winslow, O’Brien, Gutman, Hoffman, & Kilts, 2001). The observed pattern of brain activation in this study was attributed to alterations in HPA axis sensitivity.

A traumatic stress response, as is often seen among maltreated youth, can lead to enhanced sensitization of the HPA axis (e.g., Yehuda, 2000). As such, adolescents with PTSD symptoms and a history of maltreatment may show differential performance on reasoning, attentionally demanding, and emotionally-laden tasks that load on the right hemisphere, when compared to non-maltreated adolescents. Even small differences in processing of such important activities as reasoning and decision making could have significant consequences for social functioning among maltreated youth. Specifically, the right prefrontal cortex is thought to be important for making judgments and decisions in ambiguous and real-world situations, such as those regarding sexual health, social relations and substance use, which often must be made in the context of uncertain, incomplete, and ambiguous information. As such, it is possible that hemispheric lateralization, in which one side of the brain is preferred or more likely activated than the other, may be crucial in the more complex symptoms of PTSD, such as derealization and depersonalization (Bremner & Marmar, 1998; Shalev, Bonne, & Eth, 1996).

At this time, it is difficult to discuss the effects of HPA-axis, cortisol, and other neuroendocrine alterations associated with maltreatment in Aboriginal populations. Research examining the neurological implications of maltreatment and PTSD symptomatology is in its infancy. Given the differences in rates of types of maltreatment between Aboriginal

and non-Aboriginal populations, it is possible that the physiological impact could be different among these groups. Further research is required to answer this question.

### *Intervention Opportunities for Maltreated Adolescents*

Several evidence-based treatment options are available for teens with a history of maltreatment (see Zahradnik et al., this issue for information on Trauma-Focused Cognitive Behavior Therapy, the current gold standard treatment for PTSD). Beyond psychopharmacological and psychological treatments, there is a strong evidence base for implementing exercise as a mental health promotion activity. This research has occurred over the past two decades and has shown significant positive effects of exercise for decreasing and managing symptomatology among individuals with clinical depression. The duration of exercise ranges from 20 min. to 45 min. two to four times per week. Aerobic exercise (17.5 kcal/kg/week) conducted five times per week was more effective in reducing depression than aerobic exercise conducted three times per week or by engaging in flexibility exercises. These treatment options include regimens of daily jogging and brisk walking (aerobic) or stretching, yoga and meditation (flexibility) practice (Stathopoulou, Powers, Berry, Smits, & Otto, 2006).

In some cases of clinical depression or very debilitating anxiety, medication can be an important first step to taking advantage of a more holistic health approach. For example, when depressed, it is hard to find the motivation to enter into a new experience like therapy, whether the depression strikes a teen or adult. It is also difficult to commit to a routine of healthful, consistent eating and exercise, given the fact that depressed individuals fail to find pleasure in normally pleasurable activities. Medications can be used to alleviate the symptoms of depression long enough for teens to become engaged in some of these more holistic and cognitive-behavioral treatments. Exercise is a powerful intervention that is fast to initiate, inexpensive, and is highly effective in depression and anxiety issues. Furthermore, it is effective for chronic and personality-based problems rather than just specific episodes of depression and anxiety. Therapists have taken to walking during their interviews or sessions with clients as a way to introduce and reinforce exercise.



Research in brain and nervous system physiology demonstrates why adolescents need active guidance and support in improving their mind-body-action connection. This research draws our attention to the vulnerability of the youth who has been a victim of high-impact trauma or chronic abuse and neglect. Specifically, the posttraumatic stress symptomatology that is often associated with experiences of abuse and neglect makes it difficult for youth to cope, and over-emphasizes self-protection via the over-activation of our most basic survival response – fight (confront or attack the danger/threat) or flight (escape from the danger/threat).

This is where intervention by community workers may be used to support teens with a history of maltreatment. We cannot change their past nor magically erase experiences of abuse and neglect from their memories. We can only reinforce the fact that these youth did not ask for and in no way provoked the abuse and/or neglect that he or she experienced. Blame and responsibility for these acts rest solely on the perpetrator. Children and teens are powerless against a determined perpetrator or a caregiver with habitual ways of hurtful parenting. As they grow older and become adolescents, these maltreated children are developmentally propelled to define themselves, chose their peer network and romantic partners, try new behaviours, and are given new responsibilities. As such, teens are in a window of opportunity for separating who they are from what happened to them. Teens are ready developmentally to work on defining who they are, what they are about, what they do and won't do – in effect, what to do and what not to do in order to become the best possible version of themselves. This critical developmental period presents community workers with an opportunity to intervene and guide the development of these youth. In order to intervene in the most effective manner, it is necessary to understand the psychological and physiological developmental processes that are unfolding in the adolescent brain.

### *Intervention Opportunities for Maltreated Aboriginal Adolescents*

The disparities in the experience, prevention, and treatment of childhood maltreatment between Aboriginal and non-Aboriginal youth are only recently coming to light. There is much room for improvement, and more important differences are likely to be discovered. For example, recent research out of

the US suggests that African Americans and Native Americans continue to be underrepresented in research samples, highlighting the need for continued expansion in focusing on, reporting, and using ethnicity in research (Miller & Cross, 2006).

The first step in improving the well-being of maltreated Aboriginal youth is to provide them access to resources enjoyed by other Canadians – but in a manner that reflects their distinct identity (First Nations Child & Family Caring Society of Canada – Wen: De Report, 2005). Child welfare officials continue to be misinformed or uninformed about Aboriginal practices, cultural values, and tribal law. As a result, Aboriginal children remain heavily over-represented in the child welfare system. They enter younger, stay longer, and all too often are placed in non-Aboriginal facilities that remove them from their cultural heritage and identity (Evans-Campbell, 2006).

The Four Corners Regional Adolescent Treatment Center, which is owned and operated by Our Youth Our Future Inc., a private company based in Farmington New Mexico, provides an example of what can be accomplished when the cultural needs of the youth is incorporated into the provision of services. The center offers services for American Indian / Alaska Native adolescents. Their cultural-spiritual program provides cultural teachings and activities that foster cultural pride, identity, and values, and enhances the effort for sobriety and recovery. The bicultural treatment model combines cognitive-behavioral and biopsychosocial treatment approaches with an integrated program of culturally relevant practices and activities that compliment the rehabilitative effort of each youth (Stewart-Sabin & Chaffin, 2003). More studies are demonstrating that efforts by Aboriginal groups to preserve and promote their culture are associated with dramatic reductions in rates of youth suicide (Chandler, Lalonde, Sokol, & Hallett, 2003) and other harmful outcomes. The acknowledgement and celebration of Aboriginal adolescents' cultural heritage would seem an important first step in addressing the unique challenges these teens face during the developmental crossroad from childhood to healthy adulthood.



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