Intergenerational Trauma:

Convergence of Multiple Processes among First Nations peoples in Canada

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ABSTRACT

Stressful events may have immediate effects on well-being, and by influencing appraisal processes, coping methods, life styles, parental behaviours, as well as behavioural and neuronal reactivity, may also have long lasting repercussions on physical and psychological health. In addition, through these and similar processes, traumatic experiences may have adverse intergenerational consequences. Given the lengthy and traumatic history of stressors experienced by Aboriginal peoples, it might be expected that such intergenerational effects may be particularly notable. In the present review we outline some of the behavioural disturbances associated with stressful/traumatic experiences (e.g., depression, anxiety, posttraumatic stress disorder, and substance abuse disorder), and describe the influence of several variables (age, sex, early life or other experiences, appraisals, coping strategies, as well as stressor chronicity, controllability, predictability and ambiguity) on vulnerability to pathology. Moreover, we suggest that trauma may dispose individuals to further stressors, and increase the response to these stressors. It is further argued that the shared collective experiences of trauma experienced by First Nations peoples, coupled with related collective memories, and persistent sociocultural disadvantages, have acted to increase vulnerability to the transmission and expression of intergenerational trauma effects.

KEYWORDS

Stress, trauma, depression, PTSD, substance abuse, intergenerational

INTRODUCTION

1. Introduction and definition

Traumatic events exact an enormous psychological and physical toll on survivors, and often have ramifications that must be endured for decades. This includes emotional scars, and in many cases standards of living are diminished, often never recovering to levels that existed prior to the trauma. These traumas can occur at a personal level (e.g., car accident, or rape) or at a collective level (war, natural disasters, or genocide), and the responses to such events are not identical. In the latter instance, there is now considerable evidence that the effects of trauma experiences are often transmitted across generations, affecting the children and grandchildren of those that were initially victimized. The present review is meant to describe the immediate and intergenerational impacts of traumatic

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events in First Nations people. In this regard, particular attention is devoted to how intergenerational effects may come about, with particular focus on the influence of socioeconomic disadvantages (e.g., living conditions) and parental styles that might be secondary to traumatic events. Importantly, however, collective trauma may have profound intergenerational effects that infiltrate beyond easily observed or measured factors that come from the survivors telling and retelling of trauma (or in contrast, by the deep silence, that is common among some survivors). In her persuasive work, Marianne Hirsch (2001) refers to "postmemory," which may be particularly poignant in the intergenerational transmission of trauma, as it can also be viewed as a "reclaiming of memory." She states "'postmemory' most specifically describes the relationship of children of survivors of cultural or collective trauma to the experiences of their parents, experiences that they 'remember' only as the narratives and images with which they grew up, but that are so powerful, so monumental, as to constitute memories in their own right" (pg. 16).

Before the arrival of Europeans, Aboriginal groups[1] in North America were largely independent and self-governing, determining their own philosophies and approaches to cultural, economic, religious, familial, and educational matters (Lee, 1992; Royal Commission on Aboriginal Peoples (RCAP), 1996). Such healthy societies stand in sharp contrast to the conditions that currently exist in many First Nations communities. Years of colonization and attempts at forced assimilation have led to the devastation of First Nations communities and cultures. For example, in North America, First Nations peoples encounter high levels of adverse childhood experiences, such as abuse, neglect and household substance abuse (Blackstock Trocmé & Bennett, 2004; Duran et al., 2004a; Koss et al., 2003). As well, relative to the general population, they are more likely to encounter stressful experiences in adulthood, including poverty and unemployment, violence, homicide, assault, and witnessing traumatic events (Bohn, 1998; Karmali et al., 2005; Manson, Beals, Klein, Croy, & the AI-SUPERPFP Team, 2005; Waldram, 1997). Moreover, First Nations peoples are faced with high rates of discrimination (Ekos, 2006a,b) that may also function as a profound stressor (Kessler, Mickelson & Williams, 1999). According to Whitbeck and colleagues (2004a), the current health and social conditions, coupled with continued discrimination, act as reminders of, and are a continuation of, the historical traumas that persist in the thoughts of Aboriginal people and continue to impact them.

Historical traumas have included a broad range of events, some of which were experienced only by specific Aboriginal communities, whereas others were widespread and impacted a large majority of Aboriginal peoples. The historical and contemporary traumas experienced may have had numerous intergenerational effects that have not been extensively examined. However, it is clear from studies in other populations and cultures (e.g., survivors of the holocaust during WWII) that the effects of trauma can be transmitted from parents to their offspring, just as there is intergenerational transmission of knowledge and culture. These have included vulnerability to posttraumatic stress disorder (PTSD) (Yehuda, Halligan & Grossman, 2001), general psychological distress (Kellerman, 2001a), difficulties in coping with stressful experiences (Baider et al., 2000), and poor attachment styles (Lyons-Ruth, Yellin, Melnick, & Atwood, 2005). In addition, there are still other potential effects on the mental health of First Nations that have not been evaluated, such as loss of culture and languages, loss of identity, including pride and a sense of kinship with other First Nations peoples. These consequences occur at the individual, family and community levels, all of which are connected and interrelated. Considering the significant role that trauma plays in the lives of First Nations peoples, it is important to identify mechanisms by which the cycle of trauma and stress repeats itself across generations in order to intervene and preclude the intergenerational cycle.

The following sections provide an overview of the intergenerational impact of trauma. The initial section will review current approaches to understanding trauma and its consequences, and will discuss some of the health problems that currently exist among First Nations peoples. Current traumatic events, or those of the relatively recent past, faced by First Nations people are provided in the second section within a historical context. This will be followed by a discussion of intergenerational transmission of trauma, and its implications for Aboriginal populations. The concepts of collective and historical trauma are then introduced, followed by the assessment of trauma and its psychological consequences. The final section will provide a summary of the findings, and will discuss their clinical implications and what can be done to mitigate the effects of trauma experiences extending across generations. Throughout this paper we make reference to a variety of pathological states (e.g., depression, anxiety and PTSD) and one might gain the impression that this type of focus alone is the benchmark by which to evaluate well-being in First Nations communities. In fact, this approach is taken because the 'formal' research that has been conducted typically involved evaluative tools that measured symptoms of these disorders. In fact, as discussed in later sections of this review, factors such as wellness and holistic health may be particularly important for First Nations individuals, and further that conceptualization and meanings related to trauma and well-being likely vary across diverse First Nations communities.

Trauma and the Stress Process

According to the current Diagnostic and Statistical Manual of Mental Disorders (DSM–IV-TR; American Psychiatric Association (APA), 2000), a traumatic stressor is defined as an event that comprises actual or threatened death or serious injury, or alternative threats to an individuals well-being, as well as learning about the unexpected or violent death, serious harm, or threat of death or injury of a close associate or family member. This typically includes stressors such as assault, rape, child abuse, military combat, terrorism, and serious accidents or natural disasters. The difference between traumatic and non-traumatic stressors is, admittedly vague, likely stemming from the great inter-individual variability that exists with respect to appraisal of stressful/traumatic events (Anisman & Matheson, 2005). Further to this point, stressors that are considered "non-traumatic," such as financial problems or work stressors, may be associated with negative consequences as great as those provoked by traumatic events (Mol et al., 2005; Rosen & Lilienfeld, 2008). Non-traumatic stressors have also been shown to have additive or synergistic effects on health outcomes when combined with exposure to traumatic stressors (Chapman et al., 2004; Felitti et al., 1998; Monroe, Slavich, Torres, & Gotlib, 2007). Thus, in discussing the intergenerational transmission of health and social outcomes, it is important to consider both types of stressors.

The stress response

A "stressor" can be defined as a situation or event appraised as being aversive, in that it elicits a "stress response" that comprises activation or use of physiological or psychological resources and may provoke a subjective state of physical or mental tension (Anisman & Merali, 1999). Many components of the stress response serve adaptive functions that facilitate defensive responses and the maintenance of allostasis (i.e., activation of biological processes that are necessary to maintain the integrity and well-being of the individual). The overall response to stressors involves various neuroendocrine, immunological and behavioural components, and is commonly characterized by activation of the sympathetic–adrenal–medullary (SAM) system and the hypothalamic-pituitary-adrenal (HPA) axis, as well as neurochemical changes in several brain regions (Anisman, Merali & Hayley, 2008). The nature and magnitude of these responses depend on several factors, including the characteristics of the stressor, previous stressor experiences, genetic factors, and the personal resources available (Anisman & Matheson, 2005).

Although an individual's physiological responses to stressors typically serve in an adaptive capacity, if the stressor is particularly severe or persists over extended periods, these biological systems may become overly taxed (referred to as allostatic overload), culminating in increased vulnerability to physical and psychological pathology (McEwen, 2000). In this regard, protracted or severe stressors may contribute to heart disease, high blood pressure, stroke, diabetes, and exacerbation of immunologically-related illnesses and neurodegenerative disorders (Anisman et al., 2008). In addition, stressor experiences may precipitate mental disorders, such as depression, PTSD and substance abuse disorders (Kessler, 1997).

Health of First Nations peoples

Based on data from the Indian Register in 2000, life expectancy at birth was estimated at 69 years for males and 77 years for females, which reflect differences of 8 and 6 years, respectively, from the life expectancies of the Canadian population (Health Canada, 2005b). Although 61 per cent of non-Aboriginal Canadians reported "very good" or "excellent" health, only 40 per cent of First Nations living on-reserve and 42 per cent living off-reserve reported their health status as being "excellent" or "very good" (First Nations Centre, 2005; Tjepkema, 2002). First Nations peoples are also more likely to experience chronic physical health problems such as diabetes, arthritis/rheumatism, high blood pressure, and heart disease (First Nations Centre, 2005; Tjepkema, 2002), and there is reason to believe that they suffer from disproportionately high levels of mental health problems, including depression, substance abuse and PTSD.

Depression

Major depression is characterized by either poor mood or anhedonia (diminished interest or rewarding value of otherwise pleasureful experiences or stimuli), accompanied by at least four symptoms related to either weight changes (decrease or increase), sleep disturbances (insomnia or hypersomnia), psychomotor retardation or agitation, fatigue, feelings of worthlessness or guilt, diminished cognitive functioning, and recurrent thoughts of death (APA, 2000). These symptoms differ across individuals, as do the effectiveness of various treatment strategies.

According to the First Nations Regional Longitudinal Health Survey (RHS) (First Nations Centre, 2005), approximately 30 per cent of First Nations people living on-reserve reported feeling sad, blue or depressed for two weeks or more. Similarly, off-reserve Aboriginals were twice as likely to suffer an episode of major depression in the past year compared to the general population (Tjepkema, 2002). It appeared that socioeconomic status and health behaviours partially accounted for these high levels, but Aboriginals were

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still at a higher risk even when these factors were statistically controlled for (Tjepkema, 2002). An on-line survey of predominately off-reserve First Nations from across Canada also found depressive symptoms to be considerably higher compared to that evident in non-Aboriginal community based studies (Bombay, Matheson & Anisman, 2008b). Moreover, the rates of depression were particularly high in First Nations women living on-reserve compared to national rates in Canadian women (18 vs 9 per cent) (Macmillan et al., 2008). These findings are supported by reports that depression rates of First Nations people were twice that of the national average (Tjepkema, 2002), and indeed, 22 per cent of all deaths in Aboriginal youth (aged 10-19) and 16 per cent of all deaths in young Aboriginal adults (aged 20-44) were due to suicide (Health Canada, 2005a). Paralleling the findings in Canada, elevated levels of depression also seem to be prevalent among American Indians when controlling for age, sex, marital status, and family income (Beals et al., 2005a; Chester, Mahalish & Davis, 1999; Duran et al., 2004b; King, 1999; Smith et al., 2006).

Stressful events have been viewed as a precipitant of depression, with traumatic events and chronic non-traumatic stressors and life difficulties being particularly relevant in this regard (Monroe, Rohde, Seeley, & Lewinsohn, 1999). Although stressors are typically viewed as events preceeding depression, it seems that depression may also lead to increased stressor experiences (Rudolph et al., 2000). As in the general population, Aboriginal groups in North America reported a strong relationship between stressors and depression. In a sample of First Nations people from across Canada, it was found that the number of adverse childhood experiences, adult trauma and levels of perceived discrimination all contributed independently to the prediction of depressive symptoms (Bombay et al., 2008b).

Substance abuse/substance dependence

Substance use disorders are maladaptive patterns of consumption of alcohol and other drugs that are associated with clinically significant impairment or distress. A lifetime diagnosis of substance abuse requires that, in a 12 month period, 1 or more of the 4 abuse criteria are met. These include recurrent substance use either resulting in the failure to fulfill major role obligations, legal problems, use where it is physically hazardous, and/or use despite persistent social or interpersonal problems. However, if the individual also shows signs of physiological dependence (tolerance and withdrawal) and/or compulsive drinking behaviour, a diagnosis of drug dependence is given (typically considered as a more severe disturbance) (APA, 2000).

Although First Nations people are often stereotyped as being alcoholics or heavy drinkers, compared to the general Canadian population, First Nations people are more likely to abstain from using alcohol (34 vs 21 per cent) and less likely to use alcohol on a weekly/daily basis (18 vs 44 per cent) (First Nations Centre, 2005). This stereotype likely stems from First Nations peoples being more than twice as likely to binge drink once or more per week (16 vs 6 per cent) (First Nations Centre, 2005). American Indians likewise indicated high rates of abstinence in concert with high rates of heavy episodic drinking (Beals et al., 2003b; Spicer et al., 2003; Whitesell et al., 2006), and have been reported to have higher rates of alcohol dependence and abuse compared to several other racial/ethnic groups (Gilman et al., 2008; Hasin, Stinson, Ogburn, & Grant, 2007; Smith et al., 2006).

There is a strong relationship between stressors and substance abuse (Anda et al., 2002), and many individuals who experienced traumatic events or were under chronic strain turned to alcohol or drugs to deal with their distress (Carpenter & Hasin, 1999). Among American Indians, those with a history of childhood neglect, sexual and physical abuse, being a victim of violence, or familial substance abuse, consistently had higher levels of substance abuse and/or substance abuse disorders (Gil, Elk & Deitrich, 1997; Koss et al., 2003; Kunitz, Levy, McCloskey, & Gabriel, 1998; Libby et al., 2005). As with depression, there is evidence of a cyclical nature to this relationship, as prospective studies indicated that individuals who abuse alcohol are also more likely to encounter a range of stressful events (Lukassena & Beaudet, 2005).

Posttraumatic stress disorder

The primary criterion for a diagnosis of PTSD is exposure to a traumatic event, to which the individual responded with feelings of intense fear, helplessness, or horror. If such criteria are met, a diagnosis of PTSD can be given if the individual presents with (a) at least one manifestation of re-experiencing the trauma (e.g., dreams, flashbacks, intrusive memories), (b) at least three symptoms of avoidance (of trauma-related stimuli) and/or numbing of general responsiveness, (c) amnesia, emotional detachment, loss of interest, and (d) at least 2 indications of hyperarousal (e.g., difficulty sleeping, irritability and hypervigilance). These symptoms must be present for at least one month, and be associated with clinically significant distress or impairment of a person's ability to function (APA, 2000).

Although PTSD is the only mental disorder in which a specific etiology is defined (i.e., exposure to a traumatic event) (Rosen & Lilienfeld, 2008), non-traumatic

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events may engender PTSD symptoms. For instance, PTSD reactions may occur among individuals who have experienced stressors (e.g., bereavement or divorce) that did not meet the criteria for a traumatic event (Rosen & Lilienfeld, 2008). Furthermore, although the appraisal of whether the individual experienced fear, helplessness, or horror is necessary for a diagnosis of PTSD (Breslau & Kessler, 2001; Creamer, McFarlane & Burgess, 2005), other emotions such as anger and shame are also associated with the development of this pathology (Brewin, Andrews & Rose, 2000).

Despite the high rates of trauma documented in First Nations communities in Canada, to our knowledge, systematic studies have not been conducted comparing prevalence rates of PTSD in First Nations people relative to those in the general Canadian population. However, in a sample of First Nations Residential School Survivors that had experienced abuse, 64 per cent were diagnosed with PTSD (Corrado & Cohen, 2003). Furthermore, the lifetime prevalence of PTSD among Northern Plains and Southwest American Indian veterans was approximately 50 per cent, nearly double that of European American veterans (Beals et al., 2002). Similarly, in a community based sample of American Indians from two reserves, the rate of lifetime PTSD was 15 per cent, making members of these reserves almost twice as likely to be diagnosed with PTSD compared to rates observed in the general U.S. population (Beals et al., 2005b). Although these rates are exceptionally high, they seem to vary appreciably across communities, from rates below the national average (Jones, Dauphinais, Sack, & Somervell, 1997) to rates as high as 21 per cent (Robin, Chester, Rasmussen, Jaranson, & Goldman, 1997).

Not surprisingly, both childhood physical and sexual abuse, and a history of multiple traumatic experiences were significant predictors of PTSD among American Indians (Libby et al., 2005; Robin et al., 1997). However, in the study reporting a prevalence rate of 21 per cent, approximately one in four individuals who had reported at least one traumatic event was diagnosed with lifetime PTSD, a ratio similar to that found in non-Aboriginal studies (Breslau, Davis, Andreski, & Peterson, 1991). Thus, the high prevalence of PTSD may be due to greater trauma exposure among American Indians, rather than an increased vulnerability to PTSD.

Illness Comorbidity

Psychological and physical illnesses frequently do not occur in isolation of one another, and comorbid conditions are common (i.e., two or more illnesses occur simultaneously or consecutively). In this regard, depressive illness has frequently been associated with co-occurring anxiety (Nutt & Stein, 2006), cardiovascular disease and stroke (Bondy, 2007; Frasure-Smith & Lesperance, 2005), diabetes (Golden, 2007; Lustman & Clouse, 2007; Pirraglia & Gupta, 2007), neurodegenerative disorders such as Parkinson's and Alzheimer's disease, and multiple sclerosis (Griffin, Liu, Li, Mrak, & Barger, 2006; Lieberman, 2006; Mohr, 2007; Owens, 2002; Wheeler & Owens, 2005). Not unexpectedly, the presence of comorbid illnesses frequently complicates treatment of the depression itself (and the antecedent or concurrent distress), and limits recovery from co-occurring pathologies (Rosenthal, 2003).

It has been suggested that some of these comorbidities might reflect the illnesses having similar underlying processes or etiologies (Anisman et al., 2008). For instance, cortisol (a hormone released from the adrenal gland in response to stressors), is elevated in many cases of depression. If this elevation is sustained, the hormone may instigate neuronal damage within particular brain regions, such as the hippocampus (McEwen, 1994; Sapolsky, Romero & Munck, 2000), which may inhibit new cell growth that occurs in some brain regions (i.e., neurogenesis) (Montaron et al., 2006), thereby contributing to illness comorbidity.

There is little information regarding illness comorbidity among Aboriginal peoples. The evidence that does exist indicates that among Residential School Survivors, half of those individuals diagnosed with PTSD also had other cormorbid mental illnesses, such as substance abuse disorder, major depression and dysthymic disorder (Corrado & Cohen, 2003). Likewise, depression was significantly more prevalent in American Indians with diabetes (Sahmoun, Markland & Helgerson, 2007).

Factors influencing the stress response and health outcomes

Numerous factors influence how, and the degree to which a stressor will engender a pathological outcome, including characteristics of the stressor (severity, chronicity, controllability), organismic variables (genetic factors, age, and sex), and personal resources such as coping skills (Kendler, Thornton & Prescott, 2001; Kessler, Foster, Webster, & House, 1992; Levinson, 2006). Of particular relevance to the present report is that experiential factors, including prior stressful encounters and early life trauma, may promote (or increase vulnerability to) pathology. Thus, in identifying health risk and protective (resilience) factors, it is not only important to consider an individual's current life circumstances and recent events, but to take into account past traumatic experiences. As well, the impact

of adverse health and social outcomes may be transmitted across generations, and hence analyses of the relation of stress and pathology ought to include an individual's familial history, and even the history of their cultural group. Such a perspective will enable development of successful intervention strategies, and may facilitate the development of evidence based preventative strategies.

Stressor characteristics influence well-being

In general, it seems that characteristics of the stressor, namely its controllability, predictability, ambiguity and chronicity, are all important factors in determining the stress response. Specifically, it has been shown that stressor controllability influences the magnitude of neurochemical changes associated with stressors, and may be fundamental in determining the psychological ramifications of the stressor experience (Diener, Kuehner, Brusniak, Struve, & Flor, 2008; Ohira et al., 2008). Likewise, unpredictable events are typically viewed as being more aversive and having greater negative repercussions than predictable events (Baker & Stephenson, 2000; Zurita, Marinelli, Cuadra, Brandao, & Molina, 2000). Ambiguity and uncertainty regarding adverse events are likewise particularly stressful.

Although most stressors encountered on a day-to-day basis are acute, individuals frequently endure chronic stressors. These include work-related distress, financial impositions, long-term health problems, on-going discrimination, or a combination of different factors. Both acute and chronic instances of distress have been shown to be predictive of poor psychological health (e.g., Hammen, 2005; Serido, Almeida & Wethington, 2004). In addition, when acute stressors are superimposed on a backdrop of an ongoing chronic stressor, particularly marked negative effects may evolve (Van De Willige, Ormel & Giel, 1995), especially with respect to mental health (McGonagle & Kessler, 1990).

Appraisal and coping processes

When confronted with a stressor, individuals make appraisals regarding the threat, followed by appraisals concerning their ability or resources to deal with that threat (Lazarus & Folkman, 1984). Appraisals consist of a constellation of evaluative dimensions, including the threat or risk associated with the event, as well as the severity, controllability, predictability, ambiguity, and the meaning of the stressor. Variations along these dimensions are associated with perceived distress (Anisman & Matheson, 2005) and influence the coping methods selected, all of which affect emotional, behavioural and physiological responses (Aldwin & Yancura, 2004). In effect, the choice of coping strategies might be fundamental in determining whether pathology will arise (e.g., Lazarus, 1996; Schnurr & Green, 2004).

Coping strategies can be classified into two general types; problem-focused and emotion-focused (Lazarus & Folkman, 1984). Problem focused strategies aim to manage or alter the stressor, and include problem solving, cognitive restructuring or positive growth, among others. Emotion-focused coping, directed at regulating the emotional response to the stressor, may comprise emotional expression, emotional containment, self- or other-blame, withdrawal, denial, and passive resignation. In addition, several alternative coping methods can be used, including cognitive restructuring (re-evaluating the threat or finding meaning), social support seeking, active distraction, religion, humor, wishful thinking, and rumination (Carver, Scheier & Weintraub, 1989; Matheson & Anisman, 2003). Although emotion-focused coping is often thought of as being maladaptive, it may actually be an effective strategy in some situations, particularly in emotionally charged situations, as it can facilitate the individual's ability to come to terms with their feelings, and in so doing, reduces distress (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). Likewise, although avoidance often works against individuals' well-being in the long-run, it may provide temporary relief from an ongoing stressor, allowing the individual the opportunity to adopt more effective strategies (Suls & Fletcher, 1985).

Particular strategies are often thought to suit specific situations (Tennen, Affleck, Armeli, & Carney, 2000) as the adaptive or maladaptive nature of any particular coping strategy may vary depending on characteristics of the stressor, the type of health outcome being measured (Penley, Tomaka & Wiebe, 2002) and the way in which individuals use coping strategies in conjunction with one another (Kelly, Matheson, Ravindran, Merali, & Anisman, 2007). In this regard, it was suggested that individuals with the greatest flexibility in the selection of strategies, particularly the combination of strategies that they adopt in response to particular stressors, may be optimally equipped to deal with stressors (Anisman & Matheson, 2005). As will be discussed, interventions aimed at influencing appraisal processes and ameliorating ineffective coping strategies may diminish the negative impacts of stressors.

Social support and unsupport

Social support seeking is generally viewed as being among the most effective methods of buffering against stressor-provoked psychological disturbances (depression, anxiety) and compromised physical health (Thoits, 1995; Underwood, 2000). Social support can serve multiple functions, often combined with other strategies, and its

function may change as a stressor experience evolves. By example, in initially dealing with an abusive encounter, an individual may seek social support simply to vent or have a shoulder to cry on. However, over time, the individual may come to understand that it is more effective to seek social support and combine this with other strategies in order to express their concerns, reduce ambiguity concerning the situation, and establish potential resources to take action. Social support for First Nations individuals can come from multiple sources, including various government organizations; however, it is highly likely that the most effective support would be derived from other First Nations individuals and organizations.

Although considerable research has focused on the benefits of social support on well-being, more recent attention has been given to the negative effects of unsupportive interactions (e.g., Ingram, Betz, Mindes, Schmitt, & Smith, 2001). Such unsupportive social interactions do not simply refer to a lack of support, but are specific (unhelpful or negative) responses received by a person under stress. These responses can take the form of behavioural/emotional disengagement, the obvious discomfort by others in dealing with a stressed individual, or they can involve forced optimism, criticism or blame (Ingram et al., 2001). The perceptions of such unsupportive actions by others have been associated with a range of negative health outcomes (Schrimshaw, 2003; Smith & Ingram, 2004), and it was reported that the adverse effects of unsupport occur not only when they come from members of one's group, but also from those that are not group members (Jorden, Matheson & Anisman, 2009).

Contribution of early experiences and genetic factors in stressor-provoked pathology

Although the influence of recent stressors are most often considered in relation to pathology, distal events and prior episodes of depression are known to increase vulnerability to stress-related disturbances (Espejo et al., 2006; Hammen, Henry & Daley, 2000; Heim & Nemeroff, 2001). Indeed, adverse early life events (including neglect and poor parenting) have been shown to be particularly effective in increasing vulnerability to later stressor provoked anxiety and depression, PTSD and elevated risk of suicide (Heim et al., 2000; Kendler, Neale, Kessler, Heath, & Eaves, 1992; McCauley et al., 1997; Repetti, Taylor & Seeman, 2002). Thus, as will be discussed shortly, intervening in this cycle of trauma and illness may be important for preventing negative outcomes across generations.

Beyond the influence of early life events, the high concordance rates between monozygotic twins have implicated genetic factors in several illnesses including depression, anxiety disorders and alcohol dependence (Eley, Collier & McGuffin, 2002; Prescott & Kendler, 2000). Interestingly, it was shown that a genetic polymorphism (a gene mutation) will not necessarily result in expression of pathology, but may be evident provided that the individual had encountered a sufficiently severe stressful experience (Bradley et al., 2008; Caspi et al., 2003; Kaufman et al., 2004; Kendler, Kuhn, Vittum, Prescott, & Riley, 2005). Thus, it appears that interactions between genetic and environmental influences throughout the lifespan might underlie depression and PTSD vulnerability. This implies that for the expression of pathology to occur, adverse environmental experiences may be a fundamental element, and hence appropriate conditions that limit distress or facilitate effective coping strategies may serve in an intervention as well as a therapeutic capacity.

Studies in rodents have led to interesting findings concerning the impact of early life stressors with respect to the expression of genetic influences. As already indicated, having a gene for a particular phenotype does not necessarily ensure that this gene's potential actions will be expressed, as the effects of a gene may be manifested provided that environmental stressors are encountered (e.g., neglect by the mom). In this regard, environmental factors may curtail the gene's expression (through a process referred to as epigenetic actions), thereby influencing later reactivity to stressful events (Weaver et al., 2004). Furthermore, prenatal environment (reflected by maternal under-nutrition and birth weight of pups) was associated with increased risk of metabolic disorders and cardiovascular illness in the offspring, and that epigenetic factors might have been responsible for such outcomes (Meaney, Szyf & Seckl, 2007). It is particularly notable that intergenerational effects of maternally-provoked stress behaviours were also apparent (Champagne & Meaney, 2001), although it is uncertain whether these effects stemmed from epigenetic factors. These findings raise the possibility that maternal influences (or other early life events), through changes of genomic expression, may have lasting repercussions on stress responses. These findings suggest that improvements in early life experiences, including the development of pre- and postnatal programs related to child rearing, may have long-term positive ramifications.

Resilience

Just as there are certain individuals/groups that appear relatively vulnerable to the effects of stressful events, or conditions that increase vulnerability, it seems that there are factors that influence resilience to the adverse effects of

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previous and ongoing stressors. Of course, there is ample evidence that those with hardy personalities are better prepared to deal with stressors (Kobasa, 1982), and there are interesting data indicating that the resilience of individuals are markedly influenced by community based and contextual factors (Chandler & Lalonde, 1998; Ungar, 2004). For instance, Chandler and Lalonde (1998) indicated that the incidence of suicide in various Aboriginal communities was related to the frequency of particular resilience (or cultural continuity) factors being present (namely self-governance, involvement in land claims negations, and the presence of cultural facilities and health, education, and police/fire services). Moreover, to this list one can add that early positive life experiences augment resilience (Champagne et al., 2008). Yet, there is the distinct possibility that to a certain extent encountering hardships may promote a degree of tolerance (resilience) in dealing with stressors. The importance of the views expressed by both Ungar (2004), and Chandler and Lalonde (1998) is that resilience is portrayed as the confluence of several input factors, and that the effectiveness of these resilience-promoting factors may be optimal in one situation, but limited in another.

Culture and the stress process

Cultural factors likely influence the stress process and may have profound effects on how individuals cope with shared trauma. It has been suggested that standard stress models do not consider culturally based responses in the stress process, despite the fact that ethnic/cultural variables may influence how individuals appraise an event, the coping strategies available to them, and how the stress response is expressed (Slavin, Rainer, McCreary, & Gowda, 1991).

Ethnic groups vary in terms of their histories, cultural norms and relationship to the mainstream culture, which in turn leads to variations in the nature, exposure, assessment, and reactions to stressful and traumatic events (Duran & Duran, 1995; Ramirez, 1998; Sue & Sue, 1999; Weaver, 1998). Although components of the stress response are evident across groups, the symptoms of psychopathology as outlined by the DSM-IV-TR may not adequately represent responses unique to specific ethnic or cultural groups (Stamm & Friedman, 2000). For example, the core symptoms of depression may be similar across many cultures, but prominent differences may occur with respect to certain types of symptoms (e.g., affective, cognitive and somatic symptoms) (e.g., Chun, Enomoto & Sue, 1996).

Within racial/ethnic groups, differences might exist regarding the degree to which individuals identify with their minority culture. Such with-in group differences in identity and acculturation, in turn, might influence interpretations and reactions to stressful events, as well as the stress-health relationship (Noh, Beiser, Kaspar, Hou, & Rummens, 1999). It seems that the salience of cultural interpretations of events influence the stress response, and that this outcome varies with the degree to which an individual identifies with the culture. In assessing the impact of stressors, appraisal and coping strategies among First Nations people, it might be considered that cultural factors play a prominent role in the evolution of psychological disturbances, as well as the intergenerational transfer of stressor effects.

Historical and Contemporary Trauma Endured by First Nations Peoples

In assessing the intergenerational effects of adverse events on well-being, it needs to be considered that the impact of trauma experiences of one generation are difficult to dissociate from the effects of adverse events encountered in subsequent generations. Specifically, poor well-being may reflect the direct actions of current events, the direct or indirect effects attributable to traumatic experiences in previous generations, or the synergy between the two. This said, it might be propitious to examine the effects of stressors of various types within a historical context. This not only includes cataclysmic events, but also day-to-day hassles experienced, the lack of control individuals had over their own lives, the unpredictability of events, as well as numerous other psychosocial factors that influenced the way First Nations individuals might have appraised their situation and subsequently coped with ongoing stressors. This review is not meant to document the multiple historical abuses experienced by First Nations peoples, but we do emphasize that stressful events encountered at any given time ought to be contextualized in terms of the long-standing traumas encountered by this group. This is especially important given the possible intergenerational effects associated with trauma experiences.

First contact between the Aboriginal peoples and Europeans occurred in the 16th century. During this time, much of the interaction between these groups was founded on the fur trade and missionary activities that focused on saving the heathen souls of the "savages" by attempts at religious conversion (Fisher, 1992). These conversion efforts undermined existing beliefs and practices that were fundamental to their previously effective economic, familial and communal institutions. This early period of contact was also marked by community massacres and warfare, as well as epidemics stemming from the introduction of new diseases.

The signing of the Royal Proclamation in 1763 laid the basis for the treaty-making process, resulting in the creation of Indian reserve lands and the establishment of a variety of promises in exchange for land rights (e.g., hunting and

fishing rights). These policies held until the early 1800s, when the government gradually began to diminish the rights of Aboriginal peoples through social policy stemming from increasing social pressures and land settlements (Armitage, 1995; RCAP, 1996). The ensuing period was marked by unrelenting governmental and church intervention in the lives of Aboriginal peoples, with many of the racist and assimilationist policies stemming from the establishment of the Indian Act (1867). This Act dictated who was an Indian (i.e., Status Indians), along with many other policies controlling Aboriginal peoples, such as outlawing cultural activities and ceremonies, mandated Residential Schools and a forced adoption program (Armitage, 1995; Wotherspoon & Satzewich, 1993). Although First Nations peoples were forced to comply with such policies, they were denied the right to vote, and culturally established rights for First Nations women were eliminated (Stevenson, 1999). As a result, the estimated population in what is known as Canada today was reduced from approximately 500,000 people prior to contact to 102,000 by 1871 (RCAP, 1996).

These events experienced by First Nations peoples in Canada, in many cases, also applies to American Indians. Some of these events and policies, such as loss of land, are collective experiences that impacted almost all Aboriginal communities in North America. There were, however, certain tribes and communities who experienced traumatic events that were unique to their group. Thus, the specific histories and contemporary situations of various communities may result in somewhat different outcomes, but with the same general flavour. Furthermore, the types of events and policies that impacted Aboriginal peoples are diverse. Some policies and events were targeted at families and communities directly, whereas others targeted groups indirectly (Evans-Campbell, 2008). Despite the differences regarding the specific experiences of Aboriginal groups, virtually all endured multiple traumatic events in their history. In fact, the view has been expressed that the years of colonization and traumatic events endured by Aboriginal peoples amounts to a history of ethnic and cultural genocide (Smith, 2003).

Two relatively recent Canadian government policies that have affected a large portion of First Nations peoples in Canada include the policy of forcing Aboriginal children to attend Indian Residential Schools (mid-1800s to 1996) and the period known as the Sixties Scoop (1960s to 1990s), in which large numbers of children were taken from reserves, often placing them in distant non-Aboriginal families. [2] Although the government maintained that Residential Schools were established to save and protect Aboriginal people, rates of morbidity and mortality increased among those attending these schools (Kelm, 1998; RCAP, 1996). The decreased health among many students was due to a combination of factors, including neglect and abuse, a regimen of strict discipline, the loss of identity, and feelings of shame and isolation. Cultural expressions through language, dress, food, or beliefs were suppressed, often by physical force, and children were taught to be ashamed of their culture. In addition to losing their languages, customs and beliefs, when students returned home they were often seen as or felt like strangers to their families and communities (Wotherspoon & Satzewich, 1993). Many also returned home with inappropriate behaviour patterns, such as the abusive behaviours modeled after those who punished them at Residential School (Nuu-Chah-Nulth Tribal Council, 1996). Furthermore, although the purpose of the schools was to "educate" Aboriginal children, many left with low educational levels, and practical skills learned were typically applicable to very menial jobs.

There are many commonalities between the effects that children adopted out during the Sixties Scoop suffered and those experienced by Residential School Survivors. Loss of culture and language, and internalized racism left many in both groups feeling uncomfortable and isolated in their own communities as well as in mainstream society. These problems of identity and self-esteem were further complicated, in many cases, by the effects of abuse and neglect they experienced.

Furthermore, the large scale removal of Aboriginal children from their homes also resulted in deeply painful effects on the parents and extended families left behind. First Nations communities essentially suffered, as familial bonds were disrupted and often irreparably broken. Some researchers contend that parents were beset by feelings of powerlessness, guilt and shame, for not saving their children from being taken. There were also feelings of no longer being needed by their children (Feehan, 1996; Haig-Brown, 1988; Ing, 1991). In sum, the consequences of Residential Schools and the Sixties Scoop have gone far beyond those who were institutionalized, and have indeed affected individual communities, and First Nations peoples, in general.

Contemporary trauma and stressors faced by First Nations peoples

To a considerable extent, given their history of acute and chronic stressors and traumas, First Nations peoples have demonstrated enormous resilience. Yet, the cumulative impact of this history is demonstrated in the consistent health and socioeconomic disparities that exist between First Nations and non-Aboriginal peoples in North America. First Nations people living on and off-reserve had significantly lower household incomes than non-Aboriginal Canadians (Drost & Richards, 2003). Inadequate housing

and crowding has also been a stressor that is common for Aboriginal peoples (Statistics Canada, 2008a). Finally, surveys from 2000-2003, indicated that less than half of First Nations adults on- and off- reserve had a high school education, compared with at least 75 per cent of the general population (First Nations Centre, 2005; Tjepkema, 2002). First Nations peoples also bear an increased risk of sustaining serious injuries, which is one of the leading causes of death in this group (Tjepkema, 2005; Wilkins & Park, 2004). As well, First Nations individuals were four times more likely to have encountered severe trauma compared to non-Aboriginals and reported particularly high incidents of various types of trauma, including assault, traumatic suicide and motor vehicle accidents (Karmali et al., 2005). In addition, Aboriginal children were more likely to experience childhood abuse and neglect, be raised in single parent households (Hull, 2006), and be raised by parents who abused alcohol, had a history of criminal activity, and suffered mental health problems (Blackstock et al., 2004). Studies among American Indians have demonstrated that they too were at higher risk of a variety of traumas in adulthood (Evans-Campbell, Lindhorst, Huang, & Walters, 2006; Indian Health Service, 2003; Manson et al., 2005; Perry, 2004) and childhood (Koss et al., 2003).

Although limited attention has been devoted to the distress of stigmatization and discrimination, these experiences function in a manner similar to other types of psychosocial stressors (Kessler et al., 1999). Discrimination is prominent in many different facets of life for First Nations peoples, including education (Archibald & Urion, 1995), health care (Browne & Fiske, 2001), employment (Kunz, Schetagne & Milan, 2001), and at every level of the justice system (Chartrand & McKay, 2005). This discrimination has encompassed violent events and the perpetuation of negative stereotypes of Aboriginals such as being cold/unfriendly, dirty, lazy, criminal, and alcoholics (Merskin, 2001; Vorauer, Main & O'Connell, 1998). According to a qualitative study among Aboriginals, these stereotypes and (negative) joking about Aboriginal peoples in an everyday context is a major source of distress (Iwasaki, Bartlett & O'Neil, 2004). Our own research indicated that 99 per cent of a primarily urban sample of First Nations adults reported experiencing at least one incident of discrimination, of varying severity, in the preceding year (Bombay, Matheson & Anisman, 2008a). Based on a series of studies among various American Indian and First Nations samples, perceived discrimination was associated with suicidal behaviours and ideation (Walls, Chapple & Johnson, 2007a; Yoder, Whitbeck, Hoyt, & LaFromboise, 2006), adult and youth alcohol abuse (Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001; Whitbeck, Chen, Hoyt, & Adams, 2004b), gang involvement (Whitbeck, Hoyt, Chen, & Stubben, 2002a), problem behaviours among youth (Laframboise, Hoyt, Oliver, & Whitbeck, 2006), diabetes (Jiang et al., 2008), and depressive symptoms (Bombay et al., 2008a,b; Whitbeck et al., 2002b).

Intergenerational Transmission of Trauma

Traumatic experiences endured during childhood or as an adult, might profoundly influence the well-being of their offspring (Yehuda & Bierer, 2008). The generational interchange, specifically from parent to child, often termed intergenerational, multigenerational and transgenerational effects, like the immediate outcomes associated with a stressor, depend on a variety of psychosocial and socioeconomic factors. The transmission of stressor effects (within individuals and communities alike) have been explored in specific populations that endured collective trauma. Some of the research, frequently based on data from Holocaust Survivors and their family's, has implicated biological (largely neuroendocrine) changes, as well as the possible influence of parenting and attachment styles, in mediating the intergenerational effects of trauma. There exists a marked diversity of experiences among Holocaust Survivors, and a wide range of psychological symptoms have been documented, including denial, agitation, anxiety, depression, mistrust, intrusive thoughts, survivor's guilt, disorganized reasoning, and difficulty expressing emotions, although these were frequently at levels below those meeting the full criteria for a clinical diagnosis (Barocas & Barocas, 1980; Bar-On et al., 1998; Felsen, 1998; Neiderland, 1981; Sagi, Van IJzendoorn, Joels, & Scharf, 2002; Weiss, O'Connell & Siiter, 1986). In addition, the children of Holocaust Survivors were more vulnerable to the negative effects of stressors and more likely than controls to develop PTSD and depression (or subthreshold symptoms) when faced with stressful events (Baider et al., 2000; Yehuda, 1999; Yehuda, 2002). Intergenerational effects, like those reported among the children of Holocaust Survivors, have also been documented in other populations, including Japanese Americans subjected to internment during World War II (Nagata, Trierweiler & Talbot, 1999) and survivors of the Turkish genocide of Armenians (Kupelian, Kalayjian & Kassabian, 1998).

Despite numerous anecdotal accounts of similar intergenerational effects among survivors of trauma in Aboriginal groups, few studies empirically assessed this issue. Moreover, those that have, focused primarily on the influence of Residential Schools, even though First Nations peoples experienced a wide range of traumatic events. The RHS indicated that one-third of First Nations youth had at least one parent who had attended a Residential School,

National Aboriginal Health Organization (NAHO)
Organisation nationale de la santé autochtone (ONSA)
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and that adults reported that their parents' attendance at Residential Schools negatively affected the quality of parenting they received as children. Moreover, the majority of adults also indicated that their grandparents' attendance at Residential Schools negatively affected the parenting that their own parents had received. Consistent with the potential adverse intergenerational effects, the offspring of those who attended Residential Schools reported increased thoughts of committing suicide (First Nations Centre, 2005). Moreover, First Nations adults who had a parent who attended a Residential School reported higher levels of depressive symptoms, as well as increased adverse childhood experiences, adult traumas and perceived discrimination compared to First Nations adults whose parents did not attend (Bombay et al., 2008b).

Putative processes related to the intergenerational transfer of trauma: A familial perspective

Ordinarily, in assessing intergenerational effects of trauma, it is expected that a traumatic experience in one generation does not influence the probability of individuals in the next generation encountering an increased or diminished number of traumatic experiences. After all, if trauma experiences were elevated in the second or third generation, then any effects observed might be due to the individuals own adverse experiences rather than events encountered by their parents or grandparents. In fact, stressful events may have ramifications that indirectly or directly affect subsequent generations (including the possibility that members of the later generations are more likely to encounter trauma). Thus, it is often difficult to disentangle genuine intergenerational effects from those that stem from particular environments common to both generations. However, one should not misconstrue this to suggest that effects in children under these conditions are unrelated to events experienced by members of the previous generation. The difficulty in this instance comes from (a) defining what specific factors actually promoted the poor psychological health of the offspring, and (b) the data obtained being essentially correlational in nature, thus not allowing for causal conclusions to be drawn.

The processes by which intergenerational trauma effects can be transmitted from one generation to the next may involve multiple factors that have either additive or synergistic effects, and there is no a priori reason to believe that these factors act comparably among all individuals. Figure 1 represents a potential route by which

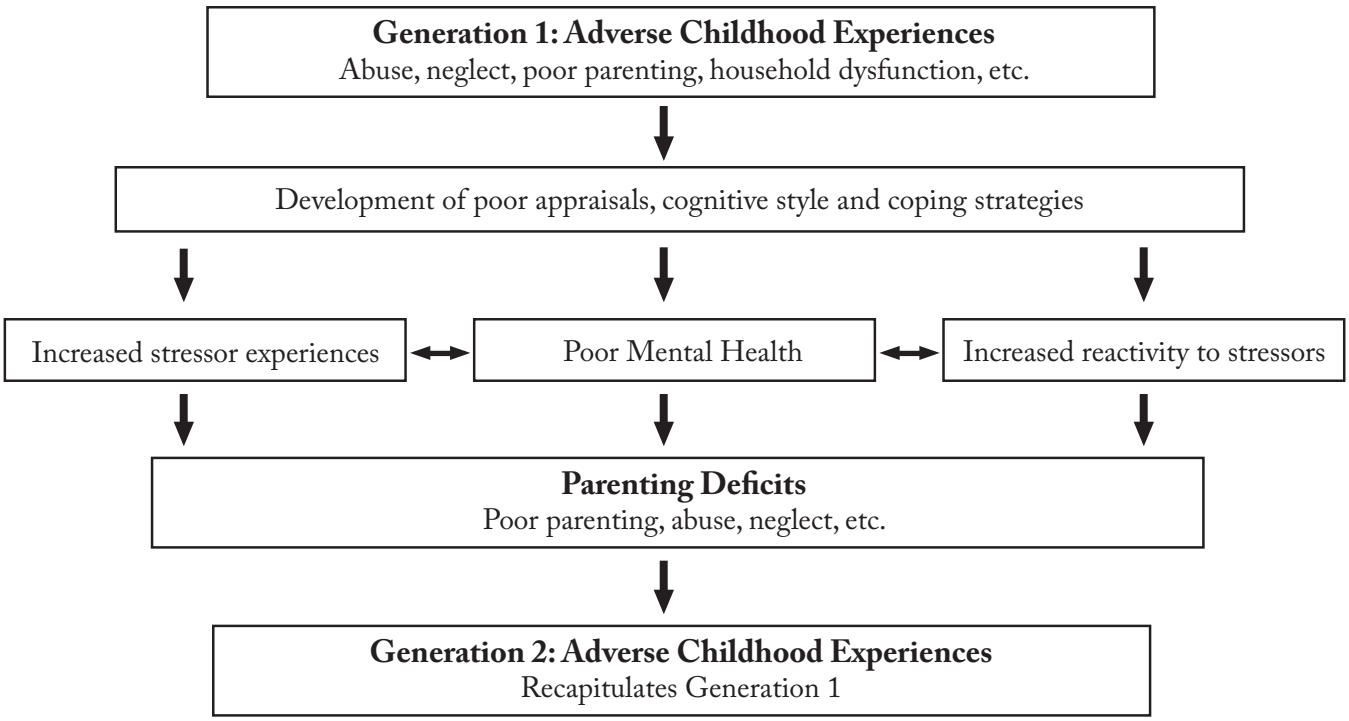

Figure 1. Mediators of the intergenerational transmission of trauma within families

stressful experiences in one generation may have indirect intergenerational effects. Although this depiction is a linear one that begins with trauma experienced during early life, we view intergenerational effects as involving a helical (or cyclical) series of events, and trauma transmitted need not occur during early life, but may (and often does) stem from traumatic events encountered in adulthood. Moreover, this depiction of intergenerational transfer essentially portrays events within a family unit, but it is understood that events within this unit do not occur in isolation of other external and indirect factors that might contribute to the intergenerational transfer of stressor effects (e.g., socio-cultural environment, physical environment, historical influences, and government policies).

The view portrayed is that adverse early life experiences (as well as those encountered in adulthood) may influence the way individuals appraise the world around them, and particularly the way they appraise stressful experiences and their ability to contend with these stressors. These appraisals, in turn, influence the coping strategies that are endorsed, with the understanding that these will be influenced by the coping styles (or coping predispositions) that individuals bring with them to any given situation. It is suggested that children who have experienced trauma might develop coping styles that are particularly ineffective or even counter-productive. Perhaps as a result of these ineffective coping styles, these individuals may be at increased risk of further stressor encounters (stress proliferation), increased psychological and neurochemical reactivity to stressors, and the promotion of poor mental health. These factors, alone or in combination, may result in impaired parenting and might thus increase the likelihood of early life trauma or stressors being encountered by their offspring. In this next generation, these adverse experiences might result in the recapitulation of the events outlined in the preceding generation, and so it goes.

Factors involved in the intergenerational transmission of trauma

Given that few studies assessed intergenerational trauma effects in First Nations peoples, it is understandable that limited data are available concerning the specific mechanisms by which the effects of trauma are transmitted from one generation to the next in this population. Thus, to a considerable extent, it is once again necessary to rely on studies of non-Aboriginals that focused on how trauma effects were transmitted from parents to their children.

The occurrence of intergenerational transfer of trauma could potentially stem from child maltreatment in one generation favoring the occurrence of child maltreatment in the next generation. As alluded to earlier, child maltreatment may be accompanied by poverty, poor mental health, substance abuse, poor coping strategies, and physiological susceptibility to stressors, any of which might contribute to the transmission of negative outcomes. Indeed, it has been estimated that child maltreatment occurs in about 30 per cent of children whose parents had been maltreated (Bower & Knutson, 1996; Kaufman & Zigler, 1987; Oliver, 1993).

Adverse childhood experiences tend to occur in clusters and the long-term effects of childhood abuse are likely due to a combination of adverse childhood experiences (Dong et al., 2004). Moreover, these adverse experiences have been found to demonstrate "dose-dependent" effects, such that higher numbers of adverse childhood experiences were associated with increased negative outcomes (Chapman et al., 2004). Although some of these adverse events might not meet the criteria of "traumatic stressors," the cumulative impact of abuse and other adverse childhood experiences highlight the importance of considering various types of adverse events within families and communities to obtain an accurate portrayal of what contributes to the continuation of this intergenerational cycle. Indeed, the effects of traumatic life experiences constitute a dynamic cascade of behavioural, psychological and environmental events, any of which might contribute to effects seen in the ensuing generation(s). One has to be cognizant of the historical context in which the cycle of abusive experiences and subsequent parenting behaviours appear. Specifically, the effects of colonization and other traumatic events essentially eliminated many of the traditional parenting practices of some First Nations communities, replacing them with models of abuse and neglect.

The identification of potential mediators of the intergenerational effects of trauma might be of special interest in the healing process, wherein nothing can be done to alter the past, but interventions at the level of critical mediators might alter the impact that would otherwise be evident across generations. For instance, healing practices can focus on promoting positive cognitive styles and active coping strategies in the treatment of abuse survivors and their children. Likewise, policy and governance related to the impact of adverse early life experiences could potentially limit the presence of factors that influence the cascading effects of early life trauma on succeeding generations (e.g., issues related to poverty and health care).

Consequences of adverse childhood experiences

Adverse childhood experiences lead to poor appraisals. A link exists between adverse childhood experiences and the development of negative cognitive styles in childhood

that might carry on into adulthood (e.g., Garber & Flynn, 2001; Gibb, 2002; Gibb et al., 2001; Parker, Gladstone, Mitchell, Wilhelm, & Roy, 2000). It has been proposed that chronic or repeated adversities in childhood may lead to an inferential process in which the child attempts to understand why such abusive experiences are happening to them (Gibb, 2002; Rose & Abramson, 1992). Over time, children may internalize the belief that these adverse events are stable, have negative consequences and are attributable to aspects of themselves.

Negative appraisals about oneself and the world leads to exaggerated perceptions of the likelihood of future harm, and that maintaining a sense of threat and unpredictability about the future may contribute to anxiety, depression and PTSD following a traumatic experience (Daigneault, Hébert & Tourigny, 2006; Feiring & Cleland, 2007; Mannarino & Cohen, 1996). Indeed, negative perceptions of the self, the world and the future, were found to mediate the association between poor parenting and the subsequent development of depressive symptoms (Stark, Schmidt & Joiner, 1996). Similarly, dysfunctional attitudes mediated the association between parental care and children's depressive symptoms measured two years later (Liu, 2003).

For children who are abused, attributions that the child makes with regard to the cause of their abuse may contribute to negative health and social outcomes. The severity of physical abuse children experienced was associated with abuse-specific symptoms that were either internalized (e.g., depression or anxiety) or externalized (e.g., aggression). Although the mediating role of attributional style was not assessed, it appeared that beyond the variance accounted for by the severity of the abuse, both abuse-specific attributions and general attributional style were predictive of the level of psychopathology experienced by children (Brown & Kolko, 1999). Several investigators have, in fact, indicated that the development of negative cognitive styles mediated the relationship between various forms of childhood abuse and neglect and poor adult outcomes, including depression, PTSD and interpersonal difficulties (Alloy et al., 2001; Browne & Winkelman, 2007; Cukor & McGinn, 2006; Gibb et al., 2001; Hankin, 2005). Although few studies explored the role of cognitive factors in Aboriginals, it was found that perceptions of higher levels of control, shorter durations of stressful experiences and greater predictability regarding the stressful situations were associated with decreased depressive symptoms in Navajo youth (Rieckmann, Wadsworth & Deyhle, 2004).

*Adverse childhood experiences lead to altered coping strategies***.** Coping strategies that individuals use to contend with stressors are typically viewed as moderators of the stressor's effects (i.e., coping might influence the potential impact of a given stressor). However, in the context of intergenerational effects, impaired coping may influence parental behaviours so that coping styles of the next generation are affected, rendering individuals less well equipped to deal with stressors that they encounter. It is thought that at about the age of 15, coping styles take on a more mature (or at least adult-like) form, as individuals tend to use more active, and a broader range of coping methods (Seiffge-Krenke, 2000). Although the selection of coping strategies may vary across situations, as will be described in ensuing sections, the development of characteristic ways of coping during adolescence may place individuals on more or less adaptive trajectories and may set the stage for the coping styles these children use into and throughout adulthood (Seiffge-Krenke & Beyers, 2005).

It has been suggested that children who are exposed to severe or chronic stressors, often endorse ineffective coping strategies. For example, children exposed to chronic parental conflict were more likely to use coping methods characterized by the release of frustration, risk-taking and confrontation (Shelton & Harold, 2007). Studies in children and adolescents have also revealed that those who reported a traumatic event, including community violence, sexual abuse and maltreatment, were more apt to use emotion-focused coping strategies, particularly avoidant coping, which may or may not have been an adaptive response (Dempsey, 2002; Spaccarelli, 1994; Thabet, Tischler & Vostanis, 2004). The use of ineffective coping styles among children was found to mediate the relationship between childhood adversities (e.g., community violence, parental conflict, child maltreatment) and negative childhood and adolescent outcomes (Caples & Berrera, 2006; Rodrigues & Kitzmann, 2007; Shelton & Harold, 2007; Spaccarelli & Fuchs, 1997). Although emotion- and avoidant-focused techniques may be adaptive in the short term (Merrill, Thomsen, Sinclair, Gold, & Milner, 2001), repeated reliance on these strategies may dispose these children to use them in other situations (Wadsworth & Berger, 2006). This might be especially likely if the child does not have an opportunity to learn other ways to process and respond to stressors (Kliewer, Fearnow & Walton, 1998; Lengua & Sandler, 1996). Ultimately, through training programs that focus on stress management techniques, including development of appropriate appraisal and coping strategies, it may be possible to diminish the adverse impact of stressful events. Importantly, given that appraisal and coping methods might be established early in life, it might be appropriate to develop programs that provide the required training during formative periods.

Several studies explored the mediating role of coping strategies in accounting for the relationship between childhood trauma and poor mental health outcomes during

adulthood. In this regard, the use of avoidant coping, including the use of illicit substances in an effort to cope, accounted for the relationship between childhood trauma and substance abuse, psychological adjustment and PTSD (Min, Farkas, Minnes, & Singer, 2007; Merrill et al., 2001; Runtz & Schallow, 1997; Schuck & Widom, 2001). Once again, few studies examined the influence of coping strategies on well-being among Aboriginal populations. However, in a sample of Navajo youth, voluntary and involuntary engagement (e.g., approach, confrontive) and disengagement (e.g., avoidance, escape) coping strategies were associated with depression (Wadsworth, Rieckmann, Benson, & Compas, 2004).

Childhood trauma influences mental health and stressor experiences

In addition to affecting appraisal and coping strategies, adverse childhood experiences are particularly influential in promoting poor mental health outcomes, a finding that has also been reported among First Nations and American Indians (Bombay et al., 2008b; Duran et al., 2004a; O'Connell et al., 2007). Adverse childhood experiences have also been associated with increased risk of encountering subsequent trauma in adulthood (termed stress proliferation). In studies among non-Aboriginals, adults who were abused as children were at greater risk of revictimization experiences, including rape or domestic violence, as well as a range of other stressful life events and circumstances (Banyard, Arnold & Smith, 2000; Banyard Williams & Siegel, 2001; Coid et al., 2001). In a sample of First Nations adults from across Canada, it was similarly found that those who reported adverse childhood experiences also reported experiencing greater traumatic experiences in adulthood (Bombay et al., 2008b), a finding also reported among American Indians (Kunitz et al., 1998; Yuan et al., 2006).

Several explanations have been advanced for instances of stress proliferation. According to one view, childhood adversity may be associated with a variety of adverse conditions that may contribute to elevated risk of still other types of stressors being encountered (Pearlin, Aneshensel & LeBlanc, 1997). By example, childhood abuse may negatively impact school performance, the ability to form and maintain close relationships and decision-making processes (Pearlin et al., 1997), any of which could directly and indirectly increase risk of stressor experiences in adulthood (e.g., poor scholastic performance may result in low socioeconomic status in adulthood, which itself is associated with increased exposure to stressful events) (Evans & Pilyoung, 2007; Wadsworth et al., 2008). It has similarly been reported that depression and other problems in adolescence may be linked to increased exposure to these stressful life events, as well as additional problems, such as work disruption, exposure to violence, early pregnancy, and substance abuse (Fergusson, Boden & Horwood, 2007; Kessler et al., 1997; Storr, Ialongo, Anthony, & Breslau, 2007). Further, among women, a relationship existed between childhood sexual abuse and both PTSD and psychological distress, which in turn, were linked to later experiencing intimate partner violence (Engstrom, El-Bassel, Go, & Gilbert, 2008). In effect, just as stressful events could lead to depression, occurrences of depression and PTSD may be a factor that contributes to stress-proliferation (Engstrom et al., 2008; Hammen, 1991).

It will be recalled that adverse childhood experiences may promote negative cognitive styles. These negative cognitive styles were generally not associated with subsequent negative events considered to be out of the individual's control (e.g., death of a loved one), but were predictive of increased "dependent" events over which the person could have some control (e.g., fight with a friend) (Joiner, Wingate, Gencoz, & Gencoz, 2005). It has also been found that the degree to which an individual makes negative attributions is predictive of increased encounters with dependent stressful events in adulthood (Safford, Alloy, Abramson, & Crossfield, 2007; Simons, Angell, Monroe, & Thase, 1993). In addition, it seems that emotion-focused coping strategies may also be predictive of the occurrence of future stressors. For example, avoidance of problems that can be addressed, such as health or financial issues, can lead to further similar or related problems (Holahan, Moos, Holahan, Brennan, & Schutte, 2005).

Childhood experiences influences reactivity to stressors

Although the development of illnesses such as depression are usually ascribed to relatively recent adverse events, and PTSD is typically associated with trauma experienced in the preceding months, as described earlier, such illnesses may also be related to distal events (Kendler et al., 1992; Post, 1992; Yehuda, 2002). There is likewise evidence from clinical studies that previous stressor experiences influence vulnerability to later depressive illness, in that less intense stressors will provoke a depressed mood among individuals that had previously been traumatized. Thus, it was suggested that the magnitude of the neurochemical changes underlying depression may evolve with repeated stressor or illness episodes (Kendler, Thornton & Gardner, 2000; Post, 1992). It seems that although the immediate effects of stressors are relatively brief, the ramifications

of such experiences may be exceedingly long-lasting. As such, when considering the impact of stressors, particularly when applied on a background that does not lend itself to effective coping, it is essential to consider that sensitized neurochemical processes, acting in concert with ongoing psychosocial stressors, may engender particularly adverse outcomes.

Although studies in animals have indicated that sensitized neurochemical processes can be established at any time in the organism's life, it appears likely that early life events may have particularly profound repercussions. In this regard, it has frequently been reported that stressors encountered in rodent pups may profoundly influence responses to stressors encountered during adulthood. For example, in rat pups, both extended periods of separation from the mother, and poor nurturing (limited attention from the mother in the form of low levels of licking and grooming) were associated with exaggerated adult stress responses (Meaney, 2001). It was similarly shown that systemic insults during the first few postnatal days, such as a strong immunological activation, greatly increased stress responses during adulthood (Shanks et al., 2000). In contrast, high levels of stimulation (high levels of attention received from the mother) attenuated age-related learning disturbances and resistance to the effects of later stressors (Anisman, Zaharia, Meaney, & Merali, 1998; Liu et al., 1997; Meaney, 2001). Essentially, it was suggested that maternal behavioural style acted to "program" neuroendocrine stress responses of pups to later stressor experiences (Meaney, 2001).

From the perspective of the present review, it may be particularly significant that stress resiliency of pups that received high levels of maternal care, was stably transmitted between generations. Moreover, studies in which cross-fostering procedures were used (i.e., pups were transferred from their biological mother to one that displayed either high or low maternal care) indicated that offspring inherit the behaviour from their nursing mother, rather than from the biological mother (Champagne & Meaney, 2001). Although this has most commonly been assessed in rodents, the intergenerational transmission of stress reactivity has also been reported in primates and humans and may involve peptides associated with the stress response or those that are associated with attachment, such as oxytocin (Champagne, 2008). It is also significant that the stress reactivity and health outcomes of pups as a function of early life stimulation (or neglect), may also be fundamental in establishing relationships between the mother and offspring in the next generation. Thus, Champagne and Meaney (2001) suggested that in order to fully appreciate factors that favor stress vulnerability (or resilience) within the family unit, in addition to the experiences of the individual, is an important level of analysis. It is interesting that this view, based primarily on studies in animals, maps precisely onto studies in humans indicating that parental behaviours provide the basis for relatively stable characteristics (e.g., self-esteem, self-efficacy, and self-reliance) that buffer the individual against the negative consequences of stressful experiences, and also serve to facilitate the development of skills that enable effective coping (Miller, Warner, Wickramaratne, & Weissman, 1999; Roberts, Gotlib & Kassel, 1996).

Before leaving the issue of early life effects on adult responses to stressors, it ought to be underscored that stress experienced by a woman while pregnant may also have repercussions on the offspring. In effect, just as drugs (legal and illicit) and alcohol can affect the offspring, so too can psychological events. It has been suggested that stressful events, by virtue of their effects on neuroendocrine functioning (e.g., changes of the stress hormone cortisol) and on genetic processes (i.e., transcriptional processes), can affect the development of the fetal brain and permanently affect neurochemical functioning (Owen, Andrews & Matthews, 2005). Moreover, it was suggested that the prenatal environment can interact with subsequent early life experiences to alter the adult stress response (Francis, Szegda, Campbell, Martin, & Insel, 2003).

Parental mental health and stressors lead to parenting deficits and poor childhood outcomes

Parental mental health and stressors appear to be associated with negative parenting, which in turn, may influence well-being in their offspring. Highlighting the potential widespread impact of poor parental mental health are reports that clinically significant depression among mothers with young children can be as high as 35 per cent (O'Hara & Swain 1996). Comparable data in Aboriginal women with children are currently unavailable, although there is no reason to believe that rates would be lower in this group. Indeed, given that depression was found to occur at a higher rate in First Nations women than in the general population (MacMillan et al., 2008), it is likely that the rates would also be elevated in First Nations women with children. Indeed, it was reported that among women who were enrolled in a prenatal outreach program, depression in pregnant Aboriginal women was more frequent than in non-Aboriginal Canadian women (Bowen & Muhajarine, 2006).

There are several possible routes by which parental mental health might impact children. These include genetic factors, the interaction between genetic and environmental

factors, and the influences of factors secondary to mental health problems (e.g., disturbed marital relationships). Parental depression was associated with a range of parenting problems, including disengagement and disorganization, maternal hostility, coercion, and less positive parent-child interactions (Goodman & Gotlib, 1999; Hammen, 1991; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Wolfe, 1999). Substance abuse and PTSD were also negatively related to a parental functioning (Appleyard & Osofsy, 2003; Berz, Taft, Watkins, & Monson, 2008; Samper, Taft, King, & King, 2004). Interestingly, substance use and depression were significantly related to physical abuse, whereas PTSD was negatively related to physical discipline (Cohen, Hien & Batchelder, 2008), but instead was associated with neglect and emotional abuse (Yehuda et al., 2001).

Children of parents with psychiatric problems have also been found to be at greater risk of sustaining injuries (Boddy & Smith 1999). Among American Indians, parental alcohol use was associated with higher rates of endured and witnessed violence among adolescents and young adults (Boyd-Ball, Manson, Noonan, & Beals, 2006). It is possible that the greater exposure to violence among offspring of alcohol users was due to inadequate levels of parental monitoring, which might have stemmed from poor parental mental health and substance abuse (Jones, Forehand, Brody, & Armistead, 2003; Walls, Whitbeck & Hoyt, 2007b). In fact, a lack of parental monitoring was associated with a range of negative outcomes in children, including substance use and abuse among American Indian adolescents (e.g., Martins, Storr, Alexandre, & Chilcoat, 2008; Rodgers & Fleming, 2003;Yang et al., 2007).

Like the effects of mental health disturbances, high levels of parental stress and trauma were also related to diminished parenting efficacy. Women with a history of child and adult trauma were more likely to be abusive or neglectful of their own children, and expressed low levels of parenting satisfaction (Banyard, Williams & Siegel, 2003). These relationships between parental trauma and both parenting variables were mediated by maternal depression (Banyard, Williams & Siegel, 2003). Although this study suggests that poor mental health accounts for the relation between trauma history and parenting, it was also found that cumulative trauma was a significant predictor of parental abuse potential, punitiveness and psychological and physical aggression, even after controlling for demographic variables and diagnosis of mental health disorders (Cohen et al., 2008).

In addition to the negative impact of parental childhood trauma, the traumatic experiences endured by parents during adulthood can also exert adverse effects on their children. In this regard, children whose parents had been tortured in adulthood, presented with greater symptoms of anxiety, depression, posttraumatic stress, and attention deficit and behavioural disorders, compared with a control group (Daud, Skoglund & Rydelius, 2005). As previously mentioned, a cyclical relationship exists between depression and stress, whereby depression can actually lead to increased stressor experiences (Hammen, 1991). This relationship is relevant to the intergenerational transmission of trauma, as maternal depression may contribute to chronic interpersonal stress, affecting the quality of parenting given to their children and was associated with levels of depression in the offspring (Hammen, Shih & Brennan, 2004).

It appears that current stressors also impact parenting. Stressors related to parenting itself, as well as other types of stressors (e.g., financial difficulties and work stress), were found to increase risk of child maltreatment (Fryer & Miyoshi, 1996; Holden & Banez, 1996; Whipple & Webster-Stratton, 1991). It was also reported that inadequate monitoring was more common among isolated single mothers who were socially disadvantaged (Pettit, Laird, Dodge, Bates, & Criss, 2001). In light of these relations, it is particularly germane that Aboriginal children are more likely to be raised by young, single mothers (Hull, 2006). Furthermore, it may be relevant to First Nations people that higher levels of neighborhood stress (presence of gangs, physical fighting, drug use/dealing, shootings and/or knifings, homicides, substandard housing conditions, unsanitary living conditions, noise, and overcrowding) were associated with depression, anxiety and hostility among single mothers living in economically disadvantaged urban areas. In turn, greater psychological distress among these women was significantly related to lower engagement in positive parenting practices (relationship quality, monitoring of child activities and disciplinary consistency) measured approximately 15 months later (Kotchick, 2005).

Domestic violence (intimate partner violence) is an interpersonal stressor faced by many adults. Although data specific to First Nations adults is not available, studies among Aboriginal peoples in Canada, as well as in American Indians, found rates of domestic violence to be at least double that of their non-Aboriginal counterparts (Malcoe et al., 2004; Murphy, Risley-Curtiss & Gerdes, 2003; Oetzel & Duran, 2004; Statistics Canada, 2008b). The presence of domestic violence in the lives of parents can often impact their children, and has been found to put these children at risk of abusing partners in their own subsequent relationships, thereby continuing the cycle of violence (Kinsfogel & Grych, 2004; Moretti, Obsuth, Odgers, & Reebye, 2006).

It appeared that discrimination-related stressors can also indirectly impact parenting behaviours. In exploring the relation between perceived discrimination and parenting among African American mothers, perceived discrimination was found to predict increases in mothers' stress-related health problems, which in turn, were associated with depressive symptoms. Moreover, elevated depressive symptoms among those perceiving high levels of discrimination was the proximal variable associated with decreases in mothers' competence-promoting parenting, which comprised vigilant parenting, warmth and closeness with low levels of repetitious arguing (Brody et al., 2008). Although these factors have not been examined among Aboriginal parents, it seems likely that the high rates of discrimination encountered, which are associated with greater depressive symptoms, might likewise influence parenting behaviours.

Other modes of trauma transmission

The previously described mechanisms are not the only means by which trauma is transmitted through families. For example, in addition to influencing health and social outcomes of children through parenting practices, inadequate role modeling may also play a role in the transmission of behaviour. According to social learning theory (Bandura, 1977), children learn vicariously by observing and imitating their parents. This conceptual framework has also been proposed to be a contributing factor in cycles of violence within families (O'Keefe, 1994; Truscott, 1992). For instance, it was reported that experiencing violence while growing up was related to favorable attitudes towards violence against both children and spouses, which predicted engagement in such violence (Markowitz, 2001). Although this study did not explore the transmission of such attitudes, it was reported that American Indian women indicated a higher threshold of violence, compared to European American women, before acknowledging these acts as reflecting domestic abuse (Tehee & Esqueda, 2008).

In the case of children of survivors of the Holocaust, there has been a focus on avoidance of further adverse experiences as reflected by messages such as "be careful" and "don't trust anybody" (Kellerman, 2001b). At the same time, many Holocaust Survivors were reported to have withheld any communication about their experiences, an intergenerational communication pattern that was termed the "conspiracy of silence" (Danieli, 1998). Children who grew up in families in which there was no outright communication regarding the parents' trauma, but where the trauma was silently present in the home (i.e., communicated nonverbally), also seem to be more vulnerable to intergenerational transmission of trauma (Kellerman, 2001b; Wiseman et al., 2002). The notion of silence is particularly relevant to survivors of Residential Schools, as we found that children of Survivors reported very little communication by their parents regarding their time at Residential School (Bombay, Matheson & Anisman, 2007).

Collective and Historical Trauma

As discussed in previous sections, the impact of historic and collective traumatic events on Survivors and the offspring of Survivors have been documented in some cultures, most notably among descendents of Jewish Holocaust Survivors (Yehuda & Beirer, 2008). More recently, it was reported that the children of survivors of Indian Residential Schools displayed poorer well-being (e.g., elevated depression) than the offspring of Aboriginals that had not attended Residential Schools (Bombay et al., 2008b; First Nations Centre, 2005). These studies, together, indicate that children of individuals exposed to sustained life-altering traumas are at risk for various health disturbances. However, these studies have largely focused on *individual* reactions associated with trauma, and are limited in defining the pathological outcomes associated with trauma effects on whole communities.

Like the survivors of the Holocaust, those of Residential Schools were not the victims of historically isolated events. Numerous assaults against Aboriginal peoples in North America (and elsewhere) have persisted for generations. These cumulative assaults were evident and manifested in battles over land rights, loss of culture, language, and identity, as well as poor health and social conditions. It has been suggested that these consequences of past trauma act as daily reminders of the many indignities committed against their group, and when faced with discrimination, Aboriginal peoples view such incidents in the context of a historical pattern of state and individual behaviour (Evans-Campbell, 2008; Whitbeck, Adams, Hoyt, & Chen, 2004a).

Collective trauma

Collective traumatic events can be directed at groups based on political, racial, religious, or cultural beliefs, and can be as random as single natural disasters or those purposely conducted for an extended period (Jorden et al., 2009), as in the case of Residential Schools. It has been suggested that focusing solely on individual experiences has resulted in the collective experience being overlooked, despite the

profound impact of collective trauma (Denham, 2008; Somasundaram, 2007). Specifically, collectively experienced traumas have unique social and psychological trajectories, and their consequences may be aligned with collective responses and interpretations (Abramowitz, 2005; Elsass, 2001; Summerfield, 1999). In addition to the additive effects of individual traumas, there are effects of collective trauma at the family and community levels that modify social dynamics, processes, structures, and functioning. For example, community level changes in the aftermath of mass trauma have included erosion of basic trust, silence, deterioration in social norms, morals and values, and poor leadership (Catani, Schauer & Neuner, 2008; Commission for Historical Clarification, 1999; Somasundaram, 2007).

Parenthetically, in the present review we deal primarily with major events that comprised obvious trauma. Some individuals, when they hear of collective disasters such as the Exxon Valdez oil spill, think of the ecological impact, and appropriately so, yet fail to recognize that such events also have marked repercussions on indigenous human populations. In this regard, it was reported that following the spill, native Aleuts were twice as likely to present with PTSD and generalized anxiety disorder than were non-natives (Palinkas, Downs, Patterson, & Russell, 1993). Not only were individual mental health issues affected, but community-level effects were reported, including the decline in traditional social relations within families and the community, a decline in subsistence production and distribution activities, and perceived increases in the amount of, and problems associated with, drinking, drug abuse and domestic violence. It was suggested that the natural resources destroyed by the oil spill did not simply reflect a financial loss, but undermined the Aleut identity, social organization and ideology, and actually disturbed the symbols fundamental to native culture being transmitted across generations (Palinkas et al., 1993). It may be important to recognize the manifestations of collective trauma, so that effective interventions at the community level can be instituted in such complex situations. The appropriateness of the interventions will depend on the specific consequences of the trauma (e.g., depression and anxiety vs. PTSD), which may vary as a function of the type and characteristics of the trauma experienced.

Historical trauma

In addition to considering the collective nature of some traumatic events, it may be important to consider the traumatic events that the group had previously experienced. Just as the characteristics of stressors influence an individual's reaction, the characteristics of group-based stressors and of the group's history of stressor encounters may influence responses elicited by newly encountered stressors or those in the recent past. For example, groups with a history of numerous collective traumas that were intense, long lasting and affected a large proportion of the group, might result in group members and the group as a whole being particularly vulnerable to individual and community dysfunction. One can imagine, for instance, that shared collective experiences, and the retelling of these experiences over generations, may result in sensitized responses to subsequently encountered adverse experiences. Indeed, this vulnerability, to a considerable extent, describes the current position of many First Nations peoples, as the numerous collective traumas endured which were often intense, lasted from first contact until the present day and impacted most members of this group. This may have been compounded by the suppression of spiritual and traditional practices during this time.

In considering the cumulative impacts of the many traumas faced by Aboriginal peoples, it has been proposed that "Historical Trauma" or "soul wound" contributes profoundly to current well-being (Brave Heart, 1998; Brave Heart, 2003; Duran & Duran, 1995, Duran, Duran, Brave Heart, & Yellow Horse-Davis, 1998). Similar concepts have also been discussed (i.e., historic trauma and historic trauma transmission) in Canadian publications (Wesley-Esquimaux & Smolewski, 2004). Historical trauma in this context has been defined as cumulative emotional and psychological wounding over the lifespan and across generations, emanating from massive group trauma experiences (Brave Heart, 2003). Particularly germane to this definition is that the collective, complex trauma is inflicted over generations on a group of people who share a specific identity or affiliation, such as ethnicity, nationality or religion (Brave Heart, 1999; Brave Heart & DeBruyn, 1998). This perspective allows events occurring across generations to be seen as part of a single traumatic trajectory, thereby expanding focus from isolated impacts of single events to the synergy associated with numerous assaults that occurred over time (Evans-Campbell, 2008). Indeed, historic trauma has been suggested as being a contributing factor for the high prevalence rates of mental disorders and social problems among First Nations and other Aboriginal groups (Braveheart-Jordan & DeBruyn, 1995; Duran & Duran, 1995; Duran et al., 1998; Manson et al., 1996; Robin, Chester & Goldman, 1996; Stamm & Stamm, 1999).

Brave Heart (2003) documented typical symptoms or reactions to historical trauma, which they termed the

"Historical Trauma Response" (HTR) that comprised depression, self-destructive behaviour, suicidal thoughts and gestures, anxiety, low self-esteem, anger, and difficulty recognizing and expressing emotions. As well, it may include substance abuse, often as an attempt to avoid painful feelings through self-medication. Unresolved grief is an associated affect that accompanies HTR, and was described as the impaired mourning that comes from generational trauma (Brave Heart & DeBruyn, 1998). Despite the broad acceptance that this conceptual framework has received by both health researchers and by Aboriginal communities, there has been little scrutiny of the concept, and its definition and constituent characteristics have not been well conceptualized or operationalized, although initial steps have been taken to do so (Evans-Campbell, 2008; Whitbeck et al., 2004a). In attempting to provide clarification and to encourage development of the concept, Evans-Campbell (2008) outlined distinguishing characteristics of a historical traumatic event that can lead to HTR: 1) the events were widespread in many communities and many individuals were affected; 2) the events engendered high levels of distress and collective mourning in contemporary communities; and 3) events were perpetrated by out-group members with purposeful and often destructive intent.

Unfortunately, much of the literature discussing historical trauma has been limited to theoretical discussions. Nevertheless, Whitbeck et al., (2004a) attempted to empirically link symptomatology to the historical traumas, by first establishing that historical loss is part of the cognitive world of contemporary American Indians, and second, by linking this sense of loss to symptoms. In their attempt to explore the extent to which American Indians contemplate their history or link events of the past to current community functioning, Whitbeck et al., (2004a) conducted focus groups to examine awareness of historic events and attitudes toward tribal history's impact and importance within participants' communities. This study led to the development of the Historical Loss Scale, which enumerates the losses identified by the focus groups, and asks respondents how frequently these losses came to mind.

The historical loss scale was then administered to parents with children ages 10-12 from four American Indian and First Nations communities. Although respondents were usually one generation removed from the Residential School era and several generations removed from the earlier collective traumas, the majority of these parents at least occasionally thought about these historical losses (e.g., loss of language, culture, land, tradition and respect for traditional ways). Moreover, many reported feelings of loss related to Residential School experiences, broken promises and negative treatment by the government. These perceptions were associated with anxiety/depression (e.g., feeling anxiety or nervousness, loss of concentration, feeling isolated, and loss of sleep), anger/avoidance (e.g., anger, rage, shame, fear/distrust of white people, and avoidance of places that served as reminders of losses) (Whitbeck et al., 2004a), and greater experiences of discrimination and alcohol abuse (Whitbeck et al., 2004b). Furthermore, it was suggested that the indirect effect of perceived discrimination on substance abuse may be mediated by feelings related to historical loss. Essentially, perceptions of discrimination act as a reminder of historical trauma and loss, and culturally shared stressors experienced, leading to adverse outcomes. Evidently, the numerous assaults against First Nations peoples continue to affect their perceptions and impinge on their psychological and physical health.

One of the shortcomings of the current trauma literature is that the dominant frameworks do not address how historical traumas influence interpretation or reactions to contemporary traumas, or how historical and present-day trauma may interact (Evans-Campbell, 2008; Whitbeck et al., 2004a). To meet this perceived need, Evans-Campbell and Walters (2006) developed the concept of "Colonial Trauma Response" (CTR). Although historical trauma specifically focuses on historical collective traumatic events and responses, CTR is a complex set of both historical and contemporary trauma responses to collective and interpersonal events. From this perspective, discriminatory events (or other perceived injustices) an individual currently experiences, may be interpreted, perhaps unconsciously, as a continuation of the racist historical treatment of First Nations peoples (Evans-Campbell, 2008).

Assessment of Trauma

It has been suggested that the failure to elicit information about an individual's trauma history is a frequent diagnostic error made by clincians (Amaya-Jackson et al., 1999; Davidson, 1999; Frueh et al., 2002), particularly as similar stressors can lead to a variety of outcomes (McQuaid et al., 2001). Unfortunately, although individuals with mental health disorders, such as depression, PTSD and substance abuse disorder, are among the most likely to utilize primary care services, they are commonly not screened for these mental health problems, leaving many undiagnosed (Coyne et al., 1994; Mueser et al., 1998; Olfson et al., 2003; Schonfeld et al., 1997) and hence, untreated. Indeed, the addition of specific trauma-screening questions as part of an initial intake procedure greatly increased the likelihood of obtaining information about past traumatic experiences, as

well mental health diagnoses increased from 5 per cent to 19 per cent (Cusack et al., 2004).

Although some studies have suggested that First Nations peoples in Canada are satisfied with general health care, it has also been reported that First Nations peoples in Canada find it difficult to specifically access *mental health* services (First Nations Centre, 2005; Wardman, Clement & Quantz, 2005). Clearly, trauma plays a large role in the lives of many First Nations people, and therefore efforts should be made to address these issues given that they have multiple negative mental health implications. Improving detection of trauma and trauma-related disorders may be a necessary step to addressing the health and mental health issues experienced by First Nations peoples. Several approaches to such assessment procedures can be used, ranging from full-length diagnostic interviews to short self-report surveys. It is beyond the scope of this review to provide a detailed description and appraisal of all the available measures and their respective psychometric properties, but some examples of approaches to screening for exposure to trauma, as well as measurement of responses to trauma are provided in the ensuing section.

Assessing exposure to trauma

As discussed earlier, it is not sufficient simply to know that an individual has been traumatized by an event, as it is also important to ascertain the specific details of the stressor with respect to its type, duration, frequency, and severity, as well as whether multiple traumas (stressors) had been experienced. Such a thorough assessment is essential, as (a) individuals who had experienced trauma are at greater risk for trauma recurrence than individuals without a history of trauma and (b) multiple trauma experiences have greater adverse effects on mental health outcomes than do single events (Banyard et al., 2001; Follette et al., 1996). In fact, given the interrelations between multiple forms of childhood adversities and adult traumas experienced, not assessing such experiences may be counter-productive in a clinical and in an experimental setting (Dong et al., 2004; Horwitz et al., 2001).

Traumatic Life Events Questionnaire.

The Traumatic Life Experiences Questionnaire (Kubany et al., 2000) is a scale that elicits information on a range of potentially traumatic events that can be used for both clinical and research purposes. The measure assesses experiences regarding 23 types of potentially traumatic events (e.g., natural disasters, accidents and assaults), and asks whether exposure to events resulted in experiencing fear, helplessness, or horror, making it possible to determine whether Criterion A1 and A2 (for a PTSD diagnosis based on the DSM-IV) are met. Additional probes ask about the frequency of an event, when it occurred, and which event caused the most distress.

When a detailed evaluation of childhood trauma is required, several options are available, including the Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 2003), and the Child Maltreatment Interview Schedule (CMIS) (Briere, 1992).

Assessing responses to trauma

Given that traumatic events have been experienced and that these have been reliably determined, assessment of behavioural disturbances follows. There are several measures available concerning the impact of trauma, each with some advantages and disadvantages. Measures vary in their sensitivity, specificity and clinical utility for different settings and populations. Semi-structured interviews consist of formalized, set questions or themes that allow trauma survivors an opportunity to talk about their experiences using their own language, and allow new questions to be introduced during the interview. Self-report instruments can also be used to assess responses to trauma, and are efficient as they do not require the expertise needed for most diagnostic interviews, and usually take relatively little time to complete.

Assessment of posttraumatic stress disorder

Structured Clinical Interview for DSM-IV (SCID) – PTSD module. The Structured Clinical Interview for *DSM–IV* (SCID) (First et al., 1997) is used to assess Axis I and Axis II psychiatric disorders, and is thought to be the current "gold standard" approach. This instrument is designed to be administered by a clinician or trained mental health professional. In addition, for the purposes of some research studies, non-clinician research assistants who have extensive experience with the study population in question have been trained to use the SCID. The PTSD model takes approximately 15-45 minutes to complete, and can be administered alone or as part of the full SCID interview. The SCID contains a PTSD-specific module that has questions related to each of the *DSM-IV* diagnostic criteria. First, screening questions are asked to determine whether individuals have ever experienced a traumatic event, in which a few examples of traumatic events are given. The PTSD module uses standard prompt questions to assess each symptom, and the interviewer then rates each symptom as either inadequate, absent, subthreshold, or threshold. Only symptoms receiving the latter rating are considered to be present. This method allows the interviewer to use

symptom-specific questions and clinical judgment to determine whether the interviewee meets diagnostic criteria for a disorder.

The use of dichotomous scoring regarding item presence and symptom severity is considered by some to be a limitation, as psychological symptoms are generally considered dimensional rather than dichotomous.

Clinician Administered PTSD Scale (CAPS). The Clinician-Administered PTSD Scale (CAPS) (Blake et al., 1990, 1995) is an interview that corresponds to the DSM-IV criteria for PTSD, and can be used to make a current (past month) or lifetime diagnosis, or to assess PTSD symptoms over the past week. After a life event checklist is administered to identify exposure to stressors, CAPS items are asked in reference to traumatic stressors. The interview assesses the core symptoms of PTSD on 0 to 4 scales with respect to their frequency and intensity. The CAPS can provide a continuous or dichotomous measurement of PTSD.

The CAPS was designed to be administered by a trained health professional that has a working knowledge of PTSD, but can also be administered by other appropriately trained individuals. The extended time (40-60 min.) typically required to administer this measure, makes it less appealing for use in routine clinical practice or when a quick diagnosis is needed.

Impact of Event Scale-Revised (IES-R). The IES-R (Weiss & Marmar, 1997) is a 22-item self-report measure that assesses current subjective distress for any specific life event, but is not meant to provide a diagnosis for PTSD. The IES-R was developed to parallel the DSM-IV criteria for PTSD and consists of intrusion, avoidance and hyperarousal subscales. This easily administered scale requires only 5-10 minutes to complete. A meta-analysis of studies using the IES-R concluded that cultural differences were relatively insignificant in the development of PTSD as measured by IES-R (Yehuda, 2002). It has also been reported that the IES-R is effective in identifying PTSD symptoms in substance use disorder populations. A drawback to the IES-R is that there is no specific cut-off score corresponding to particular severity of PTSD, and various studies have used scores ranging from 19-30 to suggest significant risk for PTSD (Azoulay, 2005; Jones et al., 2004).

Assessment of depression and other trauma related disorders

Depression, substance abuse and other anxiety disorders often occur in conjunction with stressful and traumatic experiences, and are frequently comorbid with PTSD. Although teasing these apart is difficult due to overlapping symptoms, they appear to be distinct reactions (Grant et al., 2008). Accordingly, evaluation of individuals who have or may have experienced trauma should also include assessment of these psychological disturbances. When used with a trauma population, in addition to the specific PTSD module, the SCID modules for other anxiety, affective and substance abuse disorders can be administered.

Various self-report measures exist for measuring depressive symptoms, although these are not meant for a clinical diagnosis. The Beck Depression Inventory (BDI) (Beck et al., 1961) is a commonly used multiple-choice self-report composed of 21 questions, each answer being scored on a scale value of 0 to 3. There is also a 13 item version of this scale which correlates highly with the 21-item scale (Beck & Beck, 1972), and a revised version that is copyrighted (Beck et al., 1996).

The Hamilton Depression Rating Scale (HDRS) (Hamilton, 1960; Hamilton, 1967) is commonly used as a clinician administered and scored interview that requires periodic inter-rater reliability checks. The first 17 questions of this scale contribute to the total score, and questions 18-21 are recorded to give further information about the depression (e.g., paranoid symptoms), but are not part of the scale. The HDRS was designed to be administered by clinicians, but can also be administered by non-clinicians trained in its use.

The presence of substance abuse should also be considered, as it is known to limit the effectiveness of standard treatments of other psychiatric conditions, such as PTSD and depression. Assessments can be conducted using any of several substance abuse self-report measures, such as the Michigan Alcoholism Screening Test (Selzer, 1971) or the Drug Abuse Screening Test (Skinner, 1982).

What to use

The accuracy of assessment of PTSD and other trauma related symptomatology can be maximized by using both interview and self-report methods. The use of multi-method assessments has been recommended to overcome potential psychometric limitations existing in any one instrument, and a similar two-stage approach for assessing the mental health of trauma survivors has also been recommended (Keane et al., 1987; Shrout et al., 1986). Specifically, trauma survivors are initially screened for trauma exposure and/or trauma related psychological responses using self-report instruments, which is then followed by a diagnostic interview for those who are at risk of having a disorder based on the initial screenings. Such a multi-method assessment can help to avoid biases that lead to diagnoses of PTSD based on individual or cultural factors.

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Although a multi-method measurement procedure is the ideal, the reality is that time and resources for such detailed assessment is often not available in clinical contexts or research studies. As a result, the final choice of measures is often determined by the specific goals of the clinician or of the research study, the client's overall level of acceptance of psychological testing, the level of training assessors have received, and of course, the resources available. In cases of mass or collective trauma, for example, where many individuals are affected and a shortage of mental health professionals with expertise in psychological trauma exist, self-report instruments can play a necessary role as they can be administered by non-specialists to detect a need to follow up. Such screening techniques can also be used in medical, social or primary care contexts in communities where high rates of trauma exist, but mental health resources are lacking. In these settings the use of screening tools may substantially increase the number of trauma survivors who are referred for treatment.

Cross-cultural assessment considerations

As previously discussed, an individual's appraisals, reactions and expressions of distress in response to potentially stressful and traumatic events may be, in part, culturally determined. As most measures of mental health are based on western conceptualizations of illness and normalized against white middle class samples, such assessments may be less reliable in diagnosing those from different cultural backgrounds, and it seems that ethnic minorities are more likely to be misdiagnosed than Whites (Fernando, 2005; Smedly et al., 2003; Lonner & Ibrahim, 2002). The usefulness of some of the scales and interview procedures might also be somewhat limited for First Nations peoples. For a detailed explanation of the process necessary for the development of assessment instruments and their validation, several excellent reviews and books are available (Bolton, 2001; Marsella et al., 2002; Mollica et al., 1992).

As previously discussed, individuals within a culture vary in the extent to which they adopt the values, beliefs, behaviours, and norms promoted by their culture. Just as cultural factors need to be considered in the assessment of mental health across groups, the differences in the degree to which an individual identifies with their group and/or their degree of acculturation needs to be considered in order to account for within group difference. Thus, just as such factors are important for clinicians in making diagnoses and planning treatment strategies (Atkinson et al., 1998; Berry, 1990; Castillo, 1997), determining factors such as identity and acculturation may be essential for research to determine the source for within group differences (van de Vijver & Phalet, 2004). This said, although First Nations groups and peoples are linked by their common history, the diversity of First Nations communities and cultures also need to be viewed as distinct groups. In effect, a measure that is thought to be culturally appropriate in one Aboriginal community may not be suitable for use in other communities or samples.

Cross-cultural assessment considerations in Aboriginal studies

Cross-cultural considerations have received increasing attention in studies involving indigenous groups (Beals et al., 2003; Beals et al., 2005; Campbell et al., 2008; Kowal et al., 2007). The American Indian Service Utilization, Psychiatric Epidemiology, Risk and Protective Factors Project (AI-SUPERPFP), which was conducted in two American tribes, provides an example of how to ensure cultural validity, while still maintaining opportunity for comparability with other groups (Beals et al., 2003). Although a detailed description of their methods is beyond the scope of this paper, they included several community consultations to permit a better understanding of the construction and meaning of disorders, identification of using locally descriptive words associated with mental health, as well as local idioms of distress. Using this information, standardized instruments, such as those described earlier, were altered by changing some of the language used (still in English as the communities were English speaking) and by adding new culturally indicated items. In addition to such carefully planned methods of altering research instruments, clinical reappraisals by psychiatrists or clinical psychologists were conducted in a subset of their sample to further confirm the cultural validity of their revised instruments (Beals et al., 2003). Similar, but briefer methods have also been used to adapt instruments developed in mainstream samples for use among Indigenous populations (e.g., Campbell et al., 2008; Kowal et al., 2007).

Of course, it may be that some measures are suitable only for certain Aboriginal samples. For example, the same depression survey that was used in the AI-SUPERPFP was administered to a large sample of First Nations women living on-reserve in Ontario (MacMillan et al., 2008). Although it was reported that several AI-SUPERPF participants found some of the terms used in the depression scale difficult to appraise (e.g., concepts related to time) (Beals et al., 2005), the pilot study conducted in Ontario did not identify these or similar issues, and the measure was deemed appropriate for this sample (MacMillan et al., 2008). Similarly, a scale measuring Anxiety Sensitivity, which functions as a vulnerability factor for anxiety disorders (Eifert et al., 1999), was found to be psychometrically sound

and have the same factor structure in a university sample of American Indian, Alaska Native and Caucasian students (Zvolensky et al., 2001). However, the use of the Anxiety Sensitivity scale in a homogenous sample of American Indians living on or near a reservation in the Northern Plains did not produce the same factor structure. It was suggested that the heterogeneous sampling of American Indian and Alaska Native students may have produced results unrepresentative of any specific group. Nonetheless, it was acknowledged that the differences between the two studies could be due to higher levels of acculturation or cultural identity among American Indian college students compared to the reservation sample (Norton et al., 2001). Whatever the case, these contrasting findings point to the importance of considering differences between Aboriginal samples.

Historic and collective trauma experiences have not been the purview of any one group. Historically, many cultural groups have been victimized, as have different First Nations groups. Although mental illness is a major problem in the First Nations population as a whole, there have been few attempts to develop appropriate measurement instruments that focus on PTSD, depression, substance abuse, or most other conditions. Likewise, most empirical studies of Aboriginal health have not employed measures of well-being and holistic health, in conjunction with typical measurement instruments. Furthermore, it is almost invariably the case that the assessment instruments that are used typically do not consider historical victimization as a component of a diagnosis, despite the increasing evidence suggesting direct or indirect intergenerational transfer of traumatic experiences. As indicated earlier, there have been instruments developed to assess historical trauma (Whitbeck et al., 2004a), that could potentially serve as an adjunct of other devices that are used in the assessment of psychopathology.

CONCLUSION

Beyond the well-known short-term effects of stressors, there is considerable evidence indicating that stressful events may have long-term repercussions on psychological and physical pathologies. Through the sensitization of neuronal and hormonal processes induced by a stressor experience, the impact of later stressors may be markedly enhanced. Alternatively, or in addition, traumatic events, particularly if these occur in early life, may alter cognitive processes so that appraisals and the ways of coping with stressors are altered, thereby increasing vulnerability to pathological outcomes in response to stressors that are subsequently encountered.

In addition to affecting the individual who encountered a trauma, such experiences may have profound intergenerational effects which could come about through altered parenting, which affects the appraisal and coping styles of the offspring. As well, poor parenting may increase the probability of encountering further stressors, thus increasing vulnerability to the development of pathological outcomes, such as anxiety, depression or PTSD. Although there is evidence of such processes in some groups (e.g., Holocaust Survivors and their offspring), the available data concerning such processes in First Nations peoples is limited. Yet, because of the historical trauma experiences that have been endemic in First Nations peoples, coupled with the current, often impoverished conditions experienced, the intergenerational transmission of stressor effects is likely, but empirical prospective studies are needed to evaluate this possibility.

In the main, the present report focused on the adverse effects of individual and the impact of cultural traumas. Yet, when groups are exposed to trauma, a remarkably large portion show considerable resilience and do not display the profound symptomatology that might be expected. It has been suggested that resilience comes from multiple sources, including parenting (Gewirtz Forgatch & Wieling, 2008), gender, age, education, and individual factors such as temperament and coping methods, and particularly family, social and community support (Bonanno & Mancini, 2008; Landau, Mittal & Wieling, 2008; Rutter, 2006).

The possibility also exists that the transmission of intergenerational post-memories (or collective memories) may perpetuate the lived experience of collective traumas thereby sustaining their effects over time. It is equally possible that sharing of recollections might also serve to provide a foundation of collective support and the establishment of interpretations that allow the events to be placed within a historical and cultural context (Frijda, 1997; Páez, Basabe & González, 1997; Rimé, Finkenauer, Olivier, Emmanuelle, & Philippot, 1998). As a result, this might serve in a highly adaptive social support capacity and might enhance identification with one's group, and hence might facilitate engagement in social actions to enhance the future of the group (Frijda, 1997; Kemper, 1993; Lykes, 1994).

These alternative effects are not mutually exclusive, and it is possible that the same events in some individuals (or communities) increase vulnerability to transmission of intergenerational trauma, whereas in others, these same events act to promote intergenerational resilience. What differentiates one individual or community from another is not entirely clear, although as indicated earlier, at least some factors have been identified that are relevant to resilience among First Nations individuals (Chandler & Lalonde,

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1998). Analyses of vulnerability factors (e.g., previous trauma, poor appraisals and coping) together with the contextual factors that promote resilience might provide a starting point for identifying the questions that need to be asked, and what alternative courses of action might have the most healing effect.

In view of the profound influence of trauma experiences that persist across generations, it should come as no surprise that treatment of trauma-based pathology, particularly given the influence of "postmemory" and collective memory, will require considerable time, and the undoing of the effects of discrete events (such as the Residential School experience) may require several generations. There have been laudable groups and programs initiated by First Nations that have made some inroads in this regard (e.g., Healing of the Seven Generations, n.d.), as well as other healing initiatives supported by the Aboriginal Healing Foundation (n.d.) using funding obtained from the federal government's "Gathering Strength" Aboriginal Action Plan in 1998 and the Indian Residential School Settlement Agreement in 2007. Of course, it is presently premature to assess the potential long-term benefits stemming from these initiatives, and unfortunately funding availability for them (and others) is limited, making it difficult to determine the effectiveness of these programs. Nevertheless, it seems that these programs have, at least, provided safe environments for healing and to reflect on the past, and have helped many Survivors to acquire improved ways of coping and relating with themselves and others (Aboriginal Healing Foundation, 2003)

Recommendations

- There is a lack of statistics regarding trauma-related disorders for First Nations peoples in Canada. For example, to our knowledge, statistics documenting rates of PTSD among First Nations peoples do not exist. Furthermore, where data are available, there are problems regarding the coverage and quality of the data (Smylie & Anderson, 2006). The absence of accurate data is problematic as it is unclear to what extent health disparities exist between Aboriginal and non-Aboriginal Canadians for specific disorders, which has obvious important implications for planning and delivery of health services.

- Despite increased attention to the role that intergenerational trauma plays in the lives of First Nations peoples, few studies have empirically assessed this issue. Although it is likely that many of the mechanisms which promote the intergenerational cycle are the same as those reviewed in the current paper among non-Aboriginal samples, cultural differences may render some of these findings imprecise among Aboriginal groups. Considering the significant role that trauma plays in the lives of Aboriginal peoples, it is important to identify mechanisms, specific to First Nations peoples, by which the cycle of trauma and stress repeats itself across generations in order to intervene and preclude the intergenerational cycle of trauma.

- The lack of appropriate measurement instruments that focus on PTSD, depression, substance abuse, as well as assessments of wellness among First Nations is problematic, as cultural differences may impact the appropriateness of such measures. Furthermore, because there is such heterogeneity with regards to levels of ethnic identity within this group, levels of identification with First Nations peoples and cultures should also be considered in research among First Nations peoples.

- More research is needed to explore how the consequences of traumatic events that are shared by a social collective (e.g., war, social disorder, chronic discrimination, and forced assimilation through Residential Schools) may differ from interpersonal traumas among First Nations peoples. For example, collective traumas may encourage greater reliance on coping strategies involving social support and shared belief systems (religion or spirituality) that could potentially encourage resilience to stress-related outcomes. In this regard, when social support was combined with emotional expression, a group's ability to articulate their experiences was augmented, and they were more likely to derive a shared understanding of the collectively-experienced trauma (Zarowksy, 2004). Further, holding a shared belief system (which entails a communal perspective), which might include religious, social or political beliefs, might facilitate the individual's abilities to confront their traumas and derive meaning from them (Calhoun, Cann, Tedeschi, & McMillan, 2000; Summerfield, 1999), as well as to contend effectively with subsequently encountered stressors (Halcon et al., 2004).

- To date, much of the literature discussing historical trauma has been limited to theoretical discussions, although recently developed instruments assessing historical trauma should allow for increased research assessing the impacts of this concept (Whitbeck et al., 2004a). Furthermore, concepts such as CTR (Evans-Campbell & Walters, 2006) should be explored empirically, to address shortcomings of the current trauma literature, in which the interaction between historical and present-day traumas are not addressed.

- Implementation of trauma and mental health screening in communities and/or institutions that serve First Nations peoples should be implemented to aid in identification of those who require intervention. Hand in hand with this is the need to be able to identify not just individuals who are at risk, but also communities at risk. This would include the identification of weaknesses (vulnerabilities) and strengths (resilence factors), and would also facilitate the choice of strategies needed to ameliorate problems (e.g., inclusion of traditional knowledge and healing traditions as well as those more frequently used in non-Aboriginal groups).

- Due to the paucity of research conducted among First Nations peoples regarding stress and coping, evidence from non-Aboriginal samples must be used to develop strategies aimed at addressing intergenerational trauma. Such strategies, including those described in this paper, can be developed to address any (or all) of the critical mediators identified in Figure 1, assuming that those specific issues are considered to be problematic for a given community/city. For example, if high levels of trauma faced by children in the community of interest are identified as a problem, training programs that focus on stress management techniques, including appropriate appraisal and coping strategies may be useful in diminishing the adverse impact of such stressful events. Importantly, training programs can and should be instituted before individuals suffer from stress-related disorders in order to serve as useful intervention strategies.

- As the literature base exploring these issues among First Nations peoples expands, empirical information specific to First Nations peoples is necessary to guide clinical work in the development of effective intervention and therapeutic strategies for the many children, adults, families, and communities that experience and have experienced high rates of trauma.

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END NOTES

1. Although this review pertains to the experiences of First Nations peoples, there is paucity of research conducted among First Nations groups with regard to many important issues relevant to the current paper. Although we acknowledge that there are many important differences between First Nations groups and other Aboriginal populations, when First Nations data is not available, research conducted in other Aboriginal groups are presented.

2. Highlighting these particular events should not be misconstrued as reflecting the only adverse experiences of First Nations peoples in the 20th century.