UNIVERSITY OF ALBERTA

ATTACHMENT OF AT-RISK ADOLESCENTS: ETIOLOGICAL PATHWAYS, EMOTIONAL INTELLIGENCE, AND COMORBIDITY

BY

SONIA A. C. SOBON 

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Dedication

In eternal memory of
Anna Krysa Sobon and William (Bill) Joseph Sobon
who lovingly prepared me for
my learning journey; and
all of the at-risk children, adolescents, and adults
throughout the world with
the hope that
in some small way this research will help
to enhance their quality of life.

Abstract

This exploratory research study focused on at-risk adolescents to (a) identify the prevalence rate of secure and insecure attachment classifications; (b) distinguish among secure and insecure attachment classifications; (c) identify possible attachment classification related etiological pathways; (d) explore potential relationships among attachment classifications, comorbid psychological diagnoses, measured emotional and cognitive intelligences, gender, age, birth order, and ethnicity; and (e) explore the use of family drawings to differentiate among attachment representations. This study included 134 at-risk adolescents of First Nation, Caucasian, Metis, and Inuit ethnicities; some with developmental disabilities (e.g., Fetal Alcohol Spectrum Disorder, Mental Retardation). Based on previous research findings, the Family Drawing Attachment Rating Form (FDARF) was developed and used to differentiate among attachment representations based on analysis of family drawings. Corollary findings and strong inter-rater agreement provided preliminary support for the validity and reliability of the FDARF to differentiate among attachment representations. Results found a similar attachment classification distribution (12% autonomous, 42% preoccupied, 37% dismissing, 9% unresolved) as those identified in other studies with similar populations. To explore etiological pathways, potentially traumatizing life events experienced by the adolescents and risk factors, along with familial risk factors, were identified. Analysis found a trend towards a relationship between the potentially traumatizing life event that included physical abuse and attachment classifications. Higher percentages of some risk factors were found among adolescents whose family

drawing was rated autonomous than adolescents whose family drawing was rated insecure. A number of explanations for this finding were provided. One explanation included the development of cognitive dissonance due to inconsistency between internal working model beliefs and changes in the environment. This finding may have constituted a time along the developmental trajectory of some at-risk adolescents when a change from secure to insecure attachment was at-risk for occurring. The use of an *at-risk autonomous* classification was suggested for future research. Findings supported further exploration of the relationship between emotional intelligence and attachment classifications. No significant association was found between specific psychological diagnosis and attachment classifications. A significant association was found between specific psychological diagnosis and some potentially traumatizing life events.

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Chapter One

Introduction

Mounting research suggests secure attachment plays a significant role in contributing to overall human emotional, psychological, and physiological well-being (Bowlby, 1969/1982, 1973, 1980; Egeland & Carlson, 2004; Goldberg, 2000; Schneider-Rosen, Braunwald, Carlson, & Cicchetti, 1985; Waters, Kondo-Ikemura, Posda, & Richters, 1991) across the lifespan (Ainsworth, 1991; Armsden & Greenberg, 1987; Rosenstein & Horowitz, 1996; Schore, 2003; Weiss, 1982; Wilkinson & Walford, 2001). Given the intention of school psychology to "establish, enhance, and/or maintain the psychological well-being of individuals who are actively engaged in the conscious pursuit of studying and learning" (Jackson, 1990, p. 40), exploring the significance that attachment theory has in affecting human well-being during the life stage of adolescence is of interest within the field of school psychology. It has been suggested that more research is needed to enhance understanding of the role attachment plays in psychosocioemotional development during adolescence (Cooper, Shaver, & Collins, 1998).

John Bowlby (1988), a psychoanalyst, developed the theory of attachment after completing a report for the World Health Organization in the 1950s. His report focused on the psychological impact war had on parents and children who had been left homeless. During that time, Bowlby also established a psychotherapy department for children at the Tavistock Clinic. The Tavistock Clinic was associated with the

Tavistock Institute of Human Relations in London, England which became known for its holistic study of systems (e.g., sociotechnical systems) (De Greene, 1973). Experiences related to these two activities provided Bowlby with the knowledge base he required to develop a provocative paradigm focused on attachment as it is experienced by living beings. Bowlby (1969/1982) suggested that there is a relationship between social development and a complex matrix of behaviours, cognitions, and feelings that determine how a person ensures his or her attachment needs are met. Attachment theory has spawned over 40 years of research. In the 1960s and 1970s, Mary Ainsworth, initially on her own (Bretherton, 1991) and later with colleagues (Ainsworth, Blehar, Waters, & Wall, 1978), operationalized Bowlby's theory and provided empirical support for attachment theory. Research conducted by Ainsworth and her colleagues' (Ainsworth et al., 1978) (i.e., the Strange Situation) identified reliably classifiable individual differences in attachment patterns of young children. These three attachment patterns, secure, insecure avoidant, and insecure resistant, are still used today along with a subsequently identified additional attachment pattern, insecure disorganized (Main & Solomon, 1990). It is possible that more attachment patterns will be identified (Allen, Hause, & Borman-Spurrell, 1996), possibly among atypical attachment patterns (Barnett & Vondra, 1999; Radke-Yarrow, Cummings, Kuczynski, & Chapman, 1985), as our understanding of attachment deepens.

Attachment theory provides us with a conceptual framework for the

development of a metaperspective that integrates personality and developmental constructs, that includes cognitive, affective, and behavioural aspects. It links past learning to present functioning, and predicts future functioning (Lopez, 1995). Given its intricacies, attachment theory is challenging to study (Atkinson & Goldberg, 2004) and has been described as a "work in progress" (Waters, Crowell, Elliott, Corcoran, & Treboux, 2002, p. 230) as it is evolving and open-ended with many conceptual and methodological questions yet to be answered (Lopez, 1995). The theory of attachment, as it presents itself in childhood, has been explored extensively (Ainsworth et al., 1978; Belesky & Isabella, 1988; Egeland & Sroufe, 1981; Erickson, Sroufe, & Egeland, 1985; Grossman & Grossman, 1991; Main, 1977; Radke-Yarrow et al., 1985; Smith & Pederson, 1988). The four attachment patterns, which have been identified in childhood and which will be discussed more fully in the Attachment Theory section of this document, have been used to identify similar attachment representations in adolescence and adulthood. Increasingly attachment theory based research has been conducted with adults (Cole-Detke & Kobak, 1996; Fonagy, Leigh, Steele, Steele, Kennedy, Mattoon, Target, & Gerber, 1996; Hess, 1999; Kobak & Sceery, 1988), but more research is needed to explore attachment representations during the life stage of adolescence (del Carmen & Huffman, 1996; Main, Kaplan, & Cassidy, 1985; Waters et al., 2002). This research study contributes attachment theory related knowledge to the field of school psychology pertaining to individuals in the life stage of adolescence. The purpose of this study was to identify the prevalence

of secure and insecure attachment classifications evident among some at-risk adolescents; distinguish among attachment classifications; identify possible attachment classification related etiological pathways; explore possible relationships among attachment classifications, measured cognitive and emotional abilities, and comorbid psychological diagnoses; and explore the use of family drawings to differentiate among attachment representations.

1.1 *Definitions*

Adolescence is defined as the "psychological experience of a young person from puberty to adulthood" (Kaplan, 1991, p. 547). For the purpose of this study, adolescence included ages 12 to 17 years. In this study, at-risk adolescents were adolescents who had experienced potentially traumatizing life event prior to 18 years of age. Early potentially traumatizing life events (Main & Hess, 1990; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000) included were (1) death of both biological parents; (2) death of one biological parent; (3) death of one or more step-parent, adoptive parent, or foster parent; (4) death of a sibling or close family member (e.g., grandparent, uncle, cousin); (5) sexual abuse by a parent, caregiver, or family member; (6) neglect or abandonment by a parent, caregiver, or family member; (7) emotional abuse by a parent, caregiver, or family member; (8) physical abuse by a parent, caregiver, or family member; (9) sexual, emotional, or physical abuse by a nonfamily member; (10) life-threatening illness or life-altering accident experienced by a parent, caregiver, or adolescent (e.g., cancer, AIDS, head injury); (11) immediate

family substance abuse; (12) biological parent who has a psychological disorder; (13) biological parent separation or divorce; (14) witnessing familial sexual, physical, or emotional abuse; (15) more than two foster care or treatment centre placements; and (16) one or more absent parent or caregiver.

Attachment occurs when a person "is strongly disposed to seek proximity to and contact with a specific figure and to do so in certain situations, notably when (she or) he is frightened, tired or ill. The disposition to behave in this way is an attribute of the child, an attribute which changes only slowly over time and which is unaffected by the situation of the moment" (Bowlby, 1969/1982, p. 371). Attachment is not the same as dependency as the latter is believed to be a personality trait and not biologically motivated, whereas, attachment refers to a relationship with a specific person or persons and has a biological function with its own motivational system to ensure physical and psychological protection (Bretherton, 1985).

Attachment includes "an affectional bond, and hence an attachment figure is never wholly interchangeable with or replaceable by another, even though there may be others to whom one is also attached" (Ainsworth, 1989 p. 713). In childhood, the attachment bond "is not between two people; it is instead a bond that one individual has to another individual who is perceived as stronger and wiser....A person can be attached to a person who is not in turn attached to him or her" (Cassidy, 1999, p. 12). As with attachment, an affectional bond includes the need for close contact, distress over unexplained separation, and grief when there is loss of the attachment figure. The

difference between an attachment affectional bond and other affectional bonds, which may be experienced with other family members or within friendships, is that attachment, if secure, includes an experience of safety and comfort that results in a secure base from which to explore the environment. This aspect is not present in other affectional bonds. The attachment affectional bond is demonstrated through the expression of positive affect (e.g., bouncing/jumping, smiling, vocalizing, clinging, following) that is initially experienced in the presence of the attachment figure and later represented within internal representations of the caregiver via a psychological tether (Sroufe & Waters, 1977). It is the affectional bond that "welds together the secure base phenomenon and preferential treatment of attachment figures" (Sroufe & Waters, 1977, p. 1186).

An attachment behavioural system refers to a "psychological organization hypothesized to exist within a person" (Bretherton, 1985, p. 6), and includes a repertoire of behaviours a person uses to ensure protection and eventual reproduction. Attachment behaviour "refers to any of the various forms of behaviour...commonly (engaged) in to attain and/or maintain a desired proximity" (Bowlby, 1969/1982, p. 371).

Attachment styles develop in early childhood and are influenced by the caregiver-child relationship. Four attachment patterns or styles have thus far been identified (a) secure (Type B), (b) insecure avoidant or anxious (Type A); (c) insecure resistant or ambivalent (Type C) (Ainsworth et al., 1978); and (d) insecure atypical,

disorganized, or disoriented (Type D) (Main et al., 1985; Main & Solomon, 1990). Secure attachment (Type B) facilitates the establishment of a secure base from which a child can explore the environment and return to when feeling threatened (Ainsworth et al., 1978; Belsky & Isabella, 1988; Bowlby, 1988; Greenspan & Lieberman, 1988; Main, 1991; Matas, Arend, & Sroufe, 1978; Radke-Yarrow, 1991; Spieker & Booth, 1988). Children who exhibit secure attachment to caregivers perceive themselves as deserving of being loved and believe caregivers will be available and responsive to their attachment needs. Securely attached children tend to develop a balance between self-reliance and appropriately asking for help when it is needed as they mature (Armsden & Greenberg, 1987). In contrast, children who exhibit an insecure avoidant (Type A) attachment pattern expect to be rejected when they engage in attachment behaviours (Ainsworth et al., 1978, Barnett & Vondra, 1999; Bowlby, 1988). Children who exhibit an insecure resistant (Type C) attachment pattern are uncertain as to whether or not their caregiver will be available or responsive when they exhibit attachment behaviours (Ainsworth et al., 1978; Barnett & Vondra, 1999; Bowlby, 1988). Children who exhibit an atypical, disorganized, or disoriented (Type D) attachment pattern (Main & Solomon, 1990) appear threatened by both the caregiver and the environment. This places the child in a dilemma that results in the demonstration of contradictory behaviours such as freezing or other debilitating behaviours which suggest fear or confusion (Ainsworth & Eichberg, 1991; Barnett & Vondra, 1999; Waters & Valenzuela, 1999). In adolescence and adulthood, attachment patterns are

not usually identified by observing behaviours, as is the case in childhood, but rather in adolescence and adulthood attachment patterns are differentiated by accessing internal representations of attachment or attachment related internal working models. Accessing internal working models in adolescence and adulthood is complex and instruments for this purpose are still being developed and refined. To differentiate among attachment representations in adolescence and adulthood the attachment classifications *autonomous*, *preoccupied*, *dismissing*, and *unresolved* are used as they are accepted as being similar to childhood attachment patterns *secure*, *resistant*, *avoidant*, and *disorganized* respectively. In this study both terms are, at times, used side-by-side (e.g., autonomous/secure, preoccupied/resistant, dismissing/avoidant, unresolved/disorganized) to ensure attachment classification clarity.

An internal working model of attachment is a "set of conscious and/or unconscious rules for the organization of information relevant to attachment and for obtaining or limiting access to that information, that is, to information regarding attachment-related experiences, feelings, and ideations" (Main et al., 1985, p. 66), and includes affective and cognitive components (Bretherton, 1985). Internal working models are important within behavioural systems and are utilized to guide behaviour (Bowlby, 1980). Internal working models of attachment figures develop during early childhood and affect subsequent relationships within the context of a motivational-behavioural control system (Bowlby, 1973). These models are "conceived as 'operable' models of self and attachment partner, based on their joint relationship

history. They serve to regulate, interpret, and predict both the attachment figure's and the self's attachment-related behavior, thoughts, and feelings" (Bretherton & Munholland, 1999, p. 90).

Emotional intelligence, which is related to one's ability to regulate affect, is defined as involving "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (Mayer & Salovey, 1997, p. 10). The Bar-On (1997) model defines emotional intelligence as pertaining to the "emotional, personal, and social dimensions of intelligence. Emotional intelligence comprises abilities related to understanding oneself and others, relating to people, adapting to changing environmental demands, and managing emotions" (Bar-On & Parker, 2000, p. 1). Emotional intelligence is similar to social intelligence which is defined as "a model of personality and individual behavior in which people are presumed to be knowledgeable about themselves and the social world in which they live. Individuals actively use this knowledge to manage their emotions and direct their behavior toward desired outcomes" (Zirkel, 2000, p. 20). Social competence is defined as "the possession and use of the ability to integrate thinking, feeling, and behavior to achieve social tasks and outcomes valued in the host context and culture" (Topping, Bremner, & Holmes, 2000, p. 32). Individuals who have well developed social competence are more resilient and able to withstand the stressors in life without needing to use harmful

substances (e.g., drugs, alcohol) (Topping et al., 2000). Emotional competence is defined as the "demonstration of self-efficacy in emotion-eliciting social transactions. Self-efficacy is used here to mean that the individual believes that he or she has the capacity and skills to achieve a desired outcome" (Saarni, 2000, p. 68).

Psychopathology, from an attachment theory perspective, is defined as "a developmental construction, resulting from ongoing transactive processes between the evolving individual and the environment" (Egeland & Carlson, 2004, p. 45) which create a risk for malfunctioning. Psychopathology reflects a "deviation from a normal developmental pathway in an effort toward adaptation" (Rosenstein & Horowitz, 1996, p. 244).

Earned secure attachment is defined as the demonstration of behaviours identified with the secure attachment pattern and is experienced by a person who has "overcome malevolent childhood experiences...(or) insecure attachments in infancy that changed over time to harsh parenting that might be otherwise associated with insecurity in childhood and/or adolescence" (Roisman, Padron, Sroufe, & Egeland, 2002, p. 1205). In other words, the person who experiences earned secure attachment demonstrates secure attachment behaviours even though she or he developed an insecure attachment pattern early in his or her life.

Cognitive dissonance is experienced by a person when there is the "existence of nonfitting relations among cognitions....Cognitive dissonance can be seen as an antecedent condition which leads to activity oriented towards dissonance reduction"

(Festinger, 1957, p. 3). Cognitive dissonance is experienced when there is "exposure to information...and discrepancy between reality and one's feeling or belief" (Sakai, 1999, p. 268).

1.2 *Purpose of Study*

This exploratory research study was focused on some at-risk adolescents to (a) identify the prevalence rate of secure and insecure attachment classifications; (b) distinguish among secure and insecure attachment classifications; (c) identify possible attachment classification related etiological pathways (i.e., early potentially traumatizing life events experienced by the adolescent, adolescent risk factors, familial risk factors); d) explore potential relationships among attachment classifications, comorbid psychological diagnoses, measured emotional intelligence, measured cognitive intelligence, gender, age, birth order, and ethnicity; and (e) explore the use of family drawings to differentiate among attachment representations.

1.3 *Research Questions*

The research questions for this study were:

- What percentage of an at-risk adolescent sample obtained an autonomous/secure and insecure attachment classification?
- What percentage of an at-risk adolescent sample who obtained an insecure attachment classification were identified as (a) preoccupied, (b) dismissing, and (c) unresolved?
- What were the etiological pathways identified in the history of some at-risk

adolescents who obtained an autonomous/secure attachment classification?

- What were the etiological pathways identified in the history of some at-risk adolescents who obtained an insecure attachment classification?
- Was there a relationship among the total number of early potentially traumatizing life events identified in the history of some at-risk adolescents and the attachment classification she or he obtained?
- Was there a relationship among the measured emotional and cognitive abilities of some at-risk adolescents and the attachment classification she or he obtained?
- Was there a relationship among the measured emotional and cognitive abilities of some at-risk adolescents and psychological diagnoses?
- Was there a pattern of psychological diagnoses prevalent among some at-risk adolescents who obtained (a) autonomous/secure, (b) preoccupied, (c) dismissing, and (d) unresolved attachment classifications?
- What percentage of at-risk adolescents who obtained an autonomous/secure attachment classification, and who were identified with average or above average emotional intelligence ability, had a psychological diagnosis?
- What percentage of at-risk adolescents who obtained an insecure attachment classification, and who were identified with average or above average emotional intelligence ability, had a psychological diagnosis?
- What percentage of at-risk adolescents who obtained an autonomous/secure

attachment classification, and who were identified with below average emotional intelligence ability, had a psychological diagnosis?

- What percentage of at-risk adolescents who obtained an insecure attachment classification, and who were identified with below average emotional intelligence ability, had a psychological diagnosis?
- Was there a relationship among the total number of early potentially traumatizing life events identified in the history of some at-risk adolescents, measured emotional intelligence, and psychological diagnoses?

1.4 *Rationale for Conducting Study*

Research suggests environmental factors play a strong role in facilitating adaptive and maladaptive psychological development (Egeland & Carlson, 2004; Rutter, 2002), as external reality plays a role in the formation of internal reality and internal reality plays a role in affecting one's environment. Yet, though significant, environmental factors are not entirely determinative (Rutter, 2002) as causes of maladaptive psychological development are more likely due to a synergistic interplay of genes, environmental factors, and developmental stage (Rutter, 2003). It has been suggested (Rutter, 2003) that multifactorial etiological pathways require further exploration to better inform intervention. This study sought to identify the environmental and familial conditions that impacted and affected some individuals who were in the developmental life stage of adolescence.

Attachment theory (Bowlby, 1969/1982) suggests attachment is instinctive

and biologically based emphasizing the importance of attachment in facilitating healthy lifelong human development. Bowlby (1969/1982) concluded, though attachment behaviours change with development, an attachment pattern that develops in childhood tends to persist into adulthood via attachment representations of Self and caregivers based on previous experiences. By developing secure attachment in early childhood a person creates a secure base from which to confidently explore the world and more successfully development across the lifespan (Ainsworth et al., 1978; Bowlby, 1969/1982, 1988). Developing secure attachment, either in childhood or later in life (i.e., earned secure), plays a significant role in facilitating overall well-being which supported the significance of the theoretical focus of this thesis.

Research suggests insecure attachment creates a vulnerability for developing psychological disorders (Allen et al., 1996; Bowlby, 1973, 1980; Cole-Detke & Kobak, 1996; Cummings & Cicchetti, 1990; del Carmen & Huffman, 1996; Dozier, Stovall, & Albus, 1999; Egeland & Carlson, 2004; Greenberg, 1999; Jones, 1996; Lyons-Ruth, 1996; Parkes, 1982). Insecure attachment may result in psychopathology characterized by chronic anxiety or distrust, which may place the person at-risk for not being able to cope with life stressors and may increase the likelihood of the person behaving in ways that elicit negative life experiences (Erickson et al., 1985). By adolescence, psychopathology (e.g., generalized anxiety, depression, conduct disorder) may be evident among some insecurely attached youth. Determining if a relationship exists between specific diagnoses and attachment representations could inform

intervention. This supported the impetus of this study to identify psychological diagnoses along with attachment classifications of some at-risk adolescents.

Bowlby (1969/1982) suggested there is a relationship between social development and internal working models of attachment. Early attachment experiences help to create attachment strategies that tend to persist across the lifespan, thus affecting subsequent relationships. Socioemotional development is difficult to measure in research as the constructs are difficult to capture and they are in flux as development progresses (Weinfield, Sroufe, Egeland, & Carlson, 1999). The relatively new construct of emotional intelligence (Salovey & Mayer, 1990) includes aspects related to attachment (e.g., internal working models, concepts of Self and others). "Emotional, personal and social intelligence is concerned with the ability to understand oneself and others, relate to people, and adapt to and cope with the immediate surroundings, which increases one's ability to be more successful in dealing with environmental demands" (Bar-On, 1997, p. 3). To the best of the author's knowledge, no previous study that has explored emotional intelligence has also sought to determine if a relationship exists between measured emotional intelligence and attachment classifications. Given that attachment is highly related to socioemotional development and later functioning and the attested difficulty of measuring socioemotional constructs, determining if there is a relationship between measured emotional intelligence and specific attachment classifications could be helpful for future research and intervention. This supported examining emotional intelligence in

this study.

A cognitive intelligence measurement provides a statistical indication of a person's base of information and information-processing capacities (Sattler, 1992). This is a useful index of his or her potential ability to function in society, albeit somewhat limited, as personality and motivational factors have been recognized as contributing factors in determining social competence (Sattler, 1992). Given the prevalence of societal values which place high importance on verbal abilities and abstraction, and concept formation skills; measuring cognitive intelligence is engaged in extensively within the educational system. As a result, this information is often readily available and is used to inform intervention. This study sought to support or discount previous research findings (Rosenstein & Horowitz, 1996) that found no relationship between Full Scale IQ scores and attachment classifications so as to enhance our understanding of the relationship, if any, between cognitive abilities and attachment representations. This supported the inclusion of cognitive intelligence scores in this study.

Some clinicians suggest drawing is a way to reveal emotions and attitudes that are difficult to otherwise express, as this approach uses a nonverbal language that can be used to communicate aspects of Self that can not be verbalized. Family drawings provide a window into a person's inner world as they reflect representations of family experiences (Pianta & Longmaid, 1999). Determining attachment classifications based on family drawings is not equivalent to determining attachment patterns based on

observations, but rather family drawings provide a more indirect sample of attachment related internal representations (Pianta & Longmaid, 1999). Most attachment related research studies focused on adolescents have utilized a qualitative measure to differentiate among attachment representations. Though this approach has been found to be effective, it requires extensive training and time to administer and interpret (van IJzendoorn & Bakermans-Kranenburg, 1996). Developing a more practical instrument for attachment related diagnosis and treatment planning would assist practitioners. This supported exploration of the use of family drawings to differentiate among attachment representations in this study.

Gathering data about some at-risk adolescents which included attachment classifications, possible attachment classification related etiological pathways, measured cognitive and emotional abilities, early potentially traumatizing life events, and comorbid psychological diagnoses created the opportunity to add new knowledge to the school psychology and attachment theory literature. Exploring the use of family drawings as a way to differentiate among attachment representations created the opportunity to add to previous research findings (Fury, Carlson, & Sroufe, 1997; Madigan, Ladd, & Goldberg, 2003; Pianta & Longmaid, 1999), and to further develop an attachment related diagnostic instrument based on analysis of family drawings. It is hoped that the findings from this research study will assist practitioners within the field of school psychology by informing attachment related diagnosis and intervention with clients who are in the life stage of adolescence.

Chapter Two

Literature Review

2.1 *Attachment Related Etiological Pathways*

2.1.1 *Genetic factors.*

Substantial empirical research (Rutter, 2003) has concluded that genes affect human behaviour. Disorders such as schizophrenia, bipolar affective disorder, attention-deficit/hyperactivity disorder, and autism have a genetic heritability index range of 60% to 90%, and common variations of unipolar depression and generalized anxiety have a genetic heritability index range of 20% to 50% (Rutter, 2002). Genetic components play a role in determining individual differences in response to stressful life events (e.g., separation, abuse, rejection), and a person's behaviour selects and shapes his or her environment. Therefore, genes play a role in creating environmental risk exposure and susceptibility to risk environments (Rutter, 2002). Genetic influences "may operate through temperamental dimensions....This probability applies to neuroticism as a risk factor for depressive and anxiety disorders, as well as sensation-seeking behavior as a risk factor for attention-deficit/hyperactivity disorder" (Rutters, 2002, p. 997). Growing research suggests there is a significant genetic component in the development of attachment patterns (Goldberg, 2000). It is hypothesized that genes may play a role in determining the temperamental component of distress susceptibility, as well as play a direct role in the development of secure and insecure attachment patterns (Goldberg, 2000). Given the limitations of this study,

this contributing etiological pathway was not explored, but in analysis genetic factors were considered as possibly contributing to the development of attachment patterns.

2.1.2 *Environmental factors.*

Environmental factors (e.g., maltreatment, lower socioeconomic status, familial and nonfamilial relationships, life events) play a significant role in affecting human development. An accumulation of high risk experiential precursors may impact the development of attachment patterns. Bowlby (1969/1982) and Ainsworth and colleagues (1978) hypothesized that the quality of care a child receives determines the attachment pattern he or she will exhibit. This quality of care can be influenced by situational factors, socialization experiences, and personality factors of the caregiver and child (Egeland & Sroufe, 1981). Infant-caregiver attachment patterns affect ensuing socioemotional development and the development of psychopathology "by establishing tendencies and expectations that shape subsequent environmental engagement and by influencing basic neurophysiological and affective regulatory systems. Early developmental paths are probabilistically related to later disorders and are dependent on subsequent experience to maintain their trajectories" (Egeland & Carlson, 2004, p. 45). It has been suggested that research is needed that includes familial context (e.g., caregiver risk factors and psychiatric symptomatology) so as to determine the influence early potentially traumatizing life events might have on a child's development of attachment related internal working models, behaviours (e.g., clinging, aggression) (Lyons-Ruth, 1996), and psychopathology (e.g., depression,

anxiety, low self-esteem).

2.1.3 *Developmental factors.*

From attachment theory perspective, development occurs within the context of relationships that affect the person and in which the person is an active participant (Atkinson & Goldberg, 2004; Lopez, 1995). Attachment theory "meaningfully links the behavioral with the affective, subjective, and interpersonal during the crucial formative phases of human development" (Jones, 1996, p. 6). Bowlby (1969/1982) suggested the attachment system becomes organized around a particular person or persons during the second half of the first year of life by building on previously established component systems. To remain operative, the person's internal working model changes as she or he develops and expands his or her social world (Bretherton, 1985). Attachment is an ongoing process that "becomes organized and reorganized at each stage of development in keeping with new maturation and experiential opportunities" (Greenspan & Lieberman, 1988, p. 415). Once attachment has developed it "undergoes transformations and reintegrations with subsequent developmental accomplishments" (Pearce & Pezzot-Pearce, 1994, p. 425). Experiences with early caregivers result in a prototype for future relationships which becomes significant during the life stage of adolescence, as this is typically the time when there is a shift of caregivers from parents to peers (Cooper et al., 1998). According to Erikson's (1963) psychosocial stages, adolescents are required to successfully develop a sense of identity and begin to develop intimate relationships with peers. Insecure

attachment increases the risk of not successfully completing these tasks and of creating psychological and emotional disturbances which may lead to psychopathology (Egeland & Carlson, 2004). This risk factor could be due to attachment related internalized rules about how to experience, interpret, express, and cope with distressing emotions (Cooper et al., 1998). It has been suggested that difficulties with impulse control, aggression, prolonged emotional dependency, poor social skills, and antisocial behaviour may be linked to unsuccessful adaptation at developmental stages where autonomy was warranted (Goldberg, 2000; Leffert & Petersen, 1995; Rosenstein & Horowitz, 1996). The goal of attachment behaviour is *felt security* (Sroufe & Waters, 1977), with affect as the mediator of adaptive behaviour. Affect along with the person's interpretations of the setting, familiarization, preceding events, and developmental level all determine what type of attachment behaviour is exhibited. The type of attachment behaviour exhibited is also determined by the person's perceived efficacy in his or her current situation to attain an internally represented goal, and his or her perceived efficacy changes as the person develops (Sroufe & Waters, 1977). The ability to develop metacognitive thinking continues throughout adolescence (Main, 1991). As the adolescent develops his or her ability to reflect, the opportunity arises for attachment related internal working models to also develop. Overall, how well the adolescent is able to cope and adjust his or her individuality and connectedness in close relationships likely has "significant developmental antecedents and reality-constructing sequelae" (Lopez, 1995, p. 411).

2.2 *Attachment Theory*

John Bowlby (1969/1982) utilized concepts from ethology, control systems theory, cognitive science, and psychoanalysis to develop attachment theory. By developing this theory Bowlby sought to provide an alternative explanation from psychoanalytic theories of object relations about (a) why separation elicits anxiety, (b) the similarities between child and adult mourning, and (c) the selective exclusion of normal attachment signals (Bretherton, 1985). Bowlby based attachment theory on clinical observations of children living in institutions and those who had been separated from or had lost one or two parents. Attachment theory "emphasized the importance of both continuity and sensitive responsivity in caregiving relationships as the key features of the environment of upbringing" (Rutter & O'Connor, 1999, p. 823). In this way, attachment theory differentiated itself from behaviourism, which focused on perceptual stimulation and reinforcement (Gewirtz, 1972), and psychoanalysis, which focused on internal thoughts derived from past experiences (Stern, 1989). Attachment theory also "replaced the general undifferentiated notion of mother love with a specific postulated mechanism by which a loving parental relationship might have effects on a child's psychological development" (Rutter & O'Connor, 1999, p. 824). Importance was placed on the biological rather than the environmental human need to develop social relationships (Rutter & O'Connor, 1999).

A person's attachment behavioural system is activated by experienced stress (Lyons-Ruth, 1996). Attachment theory suggests that when a threat to survival

becomes imminent, a person's attachment system is activated, and if the threat exceeds the person's resources, attachment behaviours toward an important caregiver are exhibited. Attachment is like a type of motivation that guides and propels behaviours. Underpinning attachment are biological, emotional, and cognitive aspects that influence the strategies for fulfilling the attachment need (Barnett & Vondra, 1999). Attachment is characterized by close contact with a caregiver, distress when there is unexplained separation, and grief when there is permanent loss of the attachment figure. The function of attachment is to ensure homeostasis with regards to the environment, and it is experienced by the attached person as a psychological bond to the caregiver (Bretherton, 1985). A child who experiences secure attachment to a caregiver, on an unconscious level, believes she or he will have access to others who will be trustworthy and helpful, and perceives Self as worthy of being loved and cared for (Bowlby, 1973).

Bowlby (1969/1982) suggested the development of secure attachment provides emotional security and protection against stress, which have implications for aspects of psychological development, psychopathology (Rutter & O'Connor, 1999), and physiology (Schore, 2003). Bowlby's theory differentiates attachment from other aspects of relationships and proposes that attachment does not "constitute the whole in relationships" (Rutter & O'Connor, 1999, p. 824), rather it is one of many relational aspects. As Bowlby developed attachment theory he began to hypothesize about the cognitive processes, or internal working models, that propel the effects of early

relationships into later life relationships (Bowlby, 1973, 1980). Bowlby suggested attachment is not a static trait but rather an intervening variable or organizing construct that is influenced by context rather than being constant across situations. From this perspective, attachment refers to an "affective tie between infant and caregiver and to a behavioral system, flexibly operating in terms of set goals, mediated by feeling, and in interaction with other behavioral systems" (Sroufe & Waters, 1977, p. 1185).

2.2.1 *Attachment patterns or styles.*

Mary Ainsworth operationalized and expanded attachment theory by gathering empirical findings (Bretherton, 1991). Thus far, four patterns of attachment have been identified (a) secure (Type B); (b) insecure avoidant or anxious (Type A); (c) insecure resistant or ambivalent (Type C) (Ainsworth et al., 1978); and (d) insecure atypical, disorganized, or disoriented (Main & Solomon, 1990) (Type D).

The development of *secure* attachment (Type B) ensures a child has a secure base from which to explore the environment and to return to when feeling threatened (Ainsworth et al., 1978; Belsky & Isabella, 1988; Bowlby, 1988; Greenspan & Lieberman, 1988; Main, 1991; Matas et al., 1978; Radke-Yarrow, 1991; Spieker & Booth, 1988) (see Figure 1). The caregiver provides protection as well as a buffer to distress and anxiety (Barnett & Vondra, 1999). The securely attached child believes his or her caregiver will be available and responsive to his or her attachment needs (Barnett & Vondra, 1999). She or he demonstrates positive expectations of Self and others (Erickson et al., 1985) and is more likely to approach situations with confidence and

be able to effectively handle stressful situations on his or her own or by asking for help (Bowlby, 1973). Secure attachment facilitates a feeling of confidence and competent engagement with others.

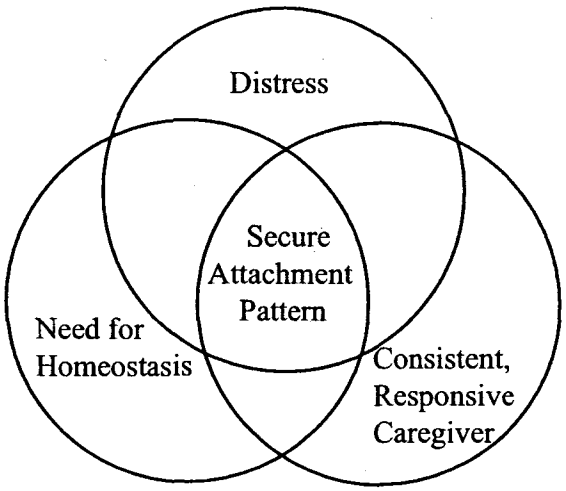

Figure 1. Secure attachment pattern. A secure attachment pattern develops when a child experiences a consistent and responsive caregiver to whom the child can go to when she or he feels distress due to danger, fatigue, or illness, and requires *felt security* to facilitate a return to homeostasis.

In contrast, the insecurely attached child views the world as unpredictable and comfortless and tends to withdraw or be confrontational (Bowlby, 1973). Most often insecure attachment patterns develop when a person interacts with a caregiver who is intermittently or chronically insensitive or unable to meet attachment needs. This is usually demonstrated through rejection or unresponsiveness and causes the child's attachment system to, over time, organize so as to deal with numerous experiences of

frustration (Barnett & Vondra, 1999). Children who exhibit an insecure *avoidant* attachment pattern (Type A) expect to be rejected when they express their attachment needs (Ainsworth et al., 1978; Barnett & Vondra, 1999; Bowlby, 1988) (see Figure 2). They learn to reduce their attachment needs by becoming distracted or dissociated (Barnett & Vondra, 1999). Children who exhibit a Type A attachment pattern exhibit little or no separation anxiety and on reunion either ignore the caregiver, approach the caregiver and then suddenly turns away, or greet the caregiver and then avert their gaze. This behaviour is similar to reunion behaviour exhibited by children who have experienced major separation (Ainsworth & Bell, 1970). Caregivers of children

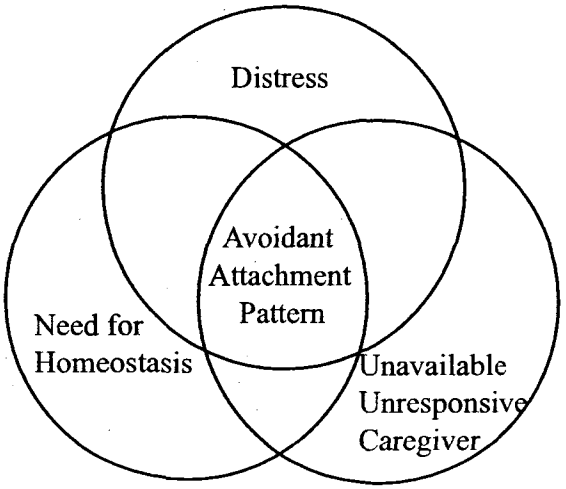

Figure 2. Insecure avoidant attachment pattern. An avoidant attachment pattern develops when a child experiences a caregiver who is unavailable or unresponsive to his or her attachment needs when she or he feels distressed and seeks to regain homeostasis.

who exhibit an avoidant attachment pattern are often active, intrusive, overstimulating, emotionally unavailable or physical rejecting (Ainsworth et al., 1978; Main, 1977; Smith & Pederson, 1988). Main (1977) observed mothers of children who exhibited an insecure avoidant attachment pattern to be rejecting of their child's desire for close body contact and found this type of contact aversive. As a result, these children likely determined that close body contact with their mothers was an unpleasant experience. Main (1977) found that these mothers tended to lack emotional expression, and hypothesized this was likely due to their own effort to control their expression of anger.

Children who exhibit an insecure *resistant* attachment pattern (Type C) are uncertain as to whether or not their caregiver will be available or responsive to their attachment needs (Ainsworth et al., 1978) (see Figure 3). They tend to oscillate between seeking caregiver closeness and resisting such contact, and seeking some minimal caregiver responsiveness by continually activating the attachment system (Barnett & Vondra, 1999). Mothers of children who exhibit an insecure resistant attachment patern tend to be less responsive to the attachment behaviours of their children, but more responsive than mothers of children who exhibit an insecure avoidant attachment pattern. Caregivers of children who exhibit a resistant attachment pattern have been observed to be passive, unresponsive, ineffective in responding to their child's attachment needs (Barnett & Vondra, 1999), and inconsistently available (Egeland & Sroufe, 1981). Due to this uncertainty the child is unable to utilize the

caregiver as a secure base, and as a result experiences compromised self-efficacy (Ainsworth et al., 1978).

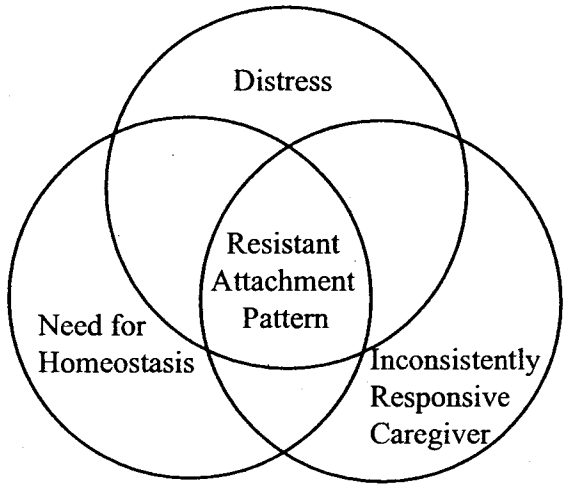

Figure 3. Insecure resistant attachment pattern. A resistant attachment pattern develops when a child experiences a caregiver who intermittently responds to the child's need to regain homeostasis when she or he feels distressed due to danger, fatigue, or illness.

Children who exhibit a *disorganized* attachment pattern (Main & Solomon, 1990) (Type D) appear to lack, or collapse organizational strategies for getting their attachment needs met when placed under stress (Lyons-Ruth, 1996; Lyons-Ruth & Jacobvitz, 1999). Many children who exhibit a disorganized attachment pattern appear threatened by both the caregiver and the environment (Main & Solomon, 1990) (see Figure 4). Some children who develop this attachment pattern have been maltreated (van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). In some cases, the caregiver has been found to be the source and the solution to the child's experience of

fear, which creates a dilemma for the child as to whether to approach or flee. This dilemma exacerbates the already stressful situation for the child and can result in a demonstration of contradictory behaviours, such as freezing or other debilitating behaviours, that suggest fear or confusion (Ainsworth & Eichberg, 1991; Barnett & Vondra, 1999; Soloman & George, 1999; van IJzendoorn & Bakermans-Kranenburg, 2003; Waters & Valenzuela, 1999). Some of the other behaviours associated with a disorganized attachment pattern are (a) approaching the caregiver with an averted head, (b) rocking on hands and knees after being rejected, (c) screaming

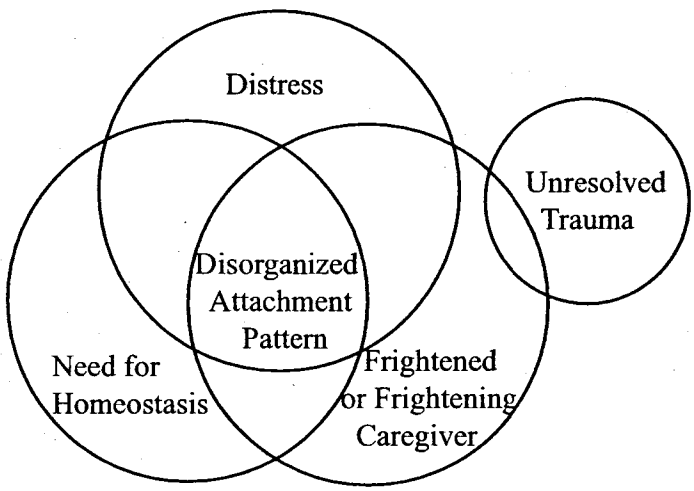

Figure 4. Insecure disorganized attachment pattern. A disorganized attachment pattern develops when a child's strategies to get his or her attachment needs met collapse or are nonexistent. This attachment pattern has been found to be associated with a caregiver who is frightened or frightening due to her or his own unresolved trauma. The child experiences fear related to both the caregiver and his or her environment.

at the caregiver upon separation and moving quietly away from him or her upon reunion (Main & Hess, 1990), (d) apprehension, and (e) helpless or depressed behaviours (Lyons-Ruth, 1996). Some of the children who have exhibited a Type D attachment pattern have been found to be controlling and parental (e.g., punitive or caregiving) towards their parents by age 6 (Main & Solomon, 1990). Caregivers of children who exhibit a disorganized attachment pattern often suffer from unresolved loss or trauma (e.g., death of their caregiver, physical or sexual abuse) (Main & Hess 1990; Main & Solomon, 1990), experience marital discord, depression, or dissociation (van IJzendoorn et al., 1999). It has been suggested that the caregiver's unresolved trauma may result in frightened or frightening behaviour (Main & Hess, 1990; Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999) which contributes to the child's development of a disorganized attachment pattern (van IJzendoorn et al., 1999). When a child is unable to approach a frightened or frightening caregiver, she or he is likely to demonstrate disorganized behaviour when faced with a stressful situation. In contrast to avoidant or resistant attachment patterns, where the child likely experiences fear related to his or her inability to gain comfort from the caregiver in stressful situations, individuals who exhibit a disorganized attachment pattern likely experience fear in direct relationship to the caregiver (Main & Hess, 1990; van IJzendoorn et al., 1999).

These four attachment categories in childhood have been helpful in identifying similar attachment representations in adolescence and adulthood. An *autonomous*

attachment classification in adolescence and adulthood has been identified as being similar to a childhood Type B (secure) attachment pattern, a *dismissing* attachment classification in adolescence and adulthood has been identified as being similar to a childhood Type A (avoidant) attachment pattern, a *preoccupied* attachment classification in adolescence and adulthood has been identified as being similar to a childhood Type C (resistant) attachment pattern, and an *unresolved* attachment classification in adolescence or adulthood has been identified as being similar to a childhood Type D (disorganized) attachment pattern (Main & Hess, 1990). The Berkeley Adult Attachment Interview (AAI) (George, Kaplan, & Main, 1985) is a semi-structured interview that seeks to identify a person's current representation of childhood attachment (Hess, 1999; Wallis & Steele, 2001). The AAI has been used to assess and differentiate among attachment representations in adolescence and adulthood. The AAI has determined that autonomous adolescents are able to respond to attachment-related probes, have supporting memories, and clearly evaluate their attachment experiences. Dismissing adolescents minimize attachment through a lack of recollection, and normalize, devalue, or idealize attachment relationships. Preoccupied adolescents are very involved in attachment relationships, and respond to probes with anger or vagueness. Unresolved adolescents tend to be disorganized (e.g., illogical or unusual beliefs) in their discussion of loss or traumatic events (Adam, Sheldon-Keller, & West, 1996).

2.2.2 *Internal working models.*

From an organizational perspective, the attachment behavioural system mediates the affective bond and assumes the child has "learned to coordinate a wide variety of behavioral responses into an adaptive and flexible goal-corrected response repertoire" (Sroufe & Waters, 1977, p. 1186). It also assumes the child is able to distinguish the attachment figure from others, anticipate the goals and behaviours of the attachment figure, factor in the environmental contingencies, coordinate his or her affective and behavioural responses, and has developed a mapping of familiar situations and the caregiver's ability to respond to his or her attachment needs. Bowlby (1969/1982) suggested there are not individual differences in the motivational strength of attachment, but rather there are individual differences, based on experiences with caregivers, in how affective, behavioural, and cognitive processes become organized to address the motivation to attach (Barnett & Vondra, 1999). This results in the development of an internal working model.

Internal working models are composed of organizational constructs of Self (e.g., being loveable or not) and the caregiver (e.g., being available, not available, intermittently available) based on their relational history. An internal working model includes both cognitive and affective components (Lyddon, 1995) (see Figure 5). The existence of internal working models has been supported through cross-cultural and intergenerational research (Bretherton, 1985). Internal working models operate unconsciously when organized. They are used to appraise and guide behaviour in new

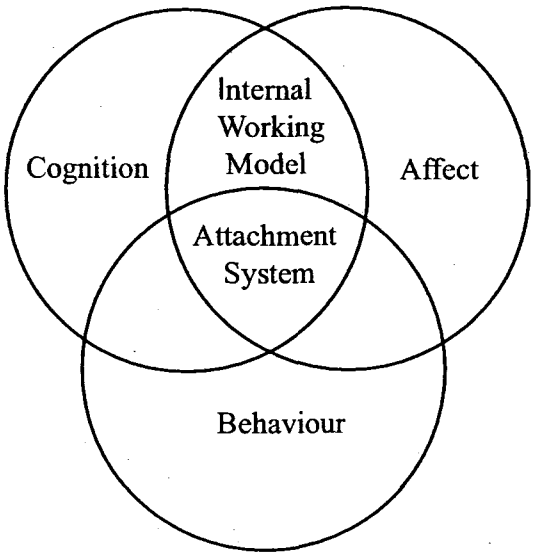

Figure 5. Attachment related internal working model. An internal working model is a person's attachment system and includes cognitive and affective elements which guide attachment related behaviour.

situations (Bretherton, 1985). For example, when a child experiences discomfort, danger, or illness she or he has a biological need to attach to a caregiver so as to experience a sense of security. The child must either ensure that his or her attachment needs are met or find another way to cope with unmet attachment needs (e.g., suppression, distraction, exaggeration) (Barnett & Vondra, 1999). Internal working models determine and guide the attachment behaviour that ensues. These constructivist-developmentally and interpersonally based (Bretherton, 1985) internalized working models impact how the child interacts in subsequent relationships. As the child develops, the organization of these adaptive behaviours also

changes as the effectiveness of the relationship is reassessed. The data used to develop an internal working model comes from day-to-day experiences, parents' comments to the child, and information received from others about the attachment figure and Self (Bowlby, 1973).

Bowlby (1973) suggested two or more internal working models of the attachment figure and Self can co-exist at the same time. For example, a caregiver may state that she or he loves the child, consistently reject the child when the child seeks attachment, and still affirm that she or he is accepting and loves the child. Bowlby (1973) concluded that when this happens the child has four options in the development of an internal working model. The first option is for the child to accept the model represented by his or her own experience of the caregiver as being rejecting contrary to what the caregiver is saying. This may result in an unrestorable break in the relationship with the caregiver and, therefore, is likely viewed as a risky option by the child. The second option is for the child to accept the model presented by the caregiver and, therefore, disown her or his own perception in an attempt to prevent a rupture of the relationship. When rationalizing the discrepancy between his or her perception and the caregiver's stated intentions, the child and the caregiver may determine the child's perception is due to a disturbed state. The third option, commonly adopted by a child, is to compromise and accept both viewpoints, which will likely result in an uneasy oscillation between the two perspectives. The fourth option the child has is to integrate the two perspectives which, due to their

incompatibility, is not possible and can result in a cognitive breakdown. Bowlby concluded psychopathology may develop from the adoption of the last option. As the child matures, if she or he has accepted the second or third option, she or he may endorse the caregiver's perception and disown his or her own perception resulting in incongruence (Rogers, 1965) and a compromise in his or her well-being. Representational homeostasis attained through the reduction of painful feelings via defensive exclusion of perceived reality likely results in some emotional relief, but also requires the child to operate within an unauthentic model of reality which may result in inappropriate or pathological behaviour (Bretherton, 1985).

Internal working models, developed in childhood, tend to persist and guide psychosocial development and functioning in adolescence (Bowlby, 1980; Bretherton, 1985; Main et al., 1985). Though the specific attachment behaviours change (e.g., from crying to signaling) as a result of development, the adaptive "attachment relationship at time 1 will be the basis for a similar quality relationship at time 2" (Sroufe & Waters, 1977, p. 1186). Bowlby (1973) concluded these internal working models, because they exist on an unconscious level, are difficult to augment or restructure. This suggests that attachment patterns tend to persist across the lifespan (Bowlby, 1973), as they are likely self-perpetuating (Lyddon, 1995; Main et al., 1985). Some researchers (Berlin & Cassidy, 1999; Clarke & Clarke, 2000; Hess, 1999; Main et al., 1985; Roisman et al., 2002; Thompson, 1999; Weinfield et al., 1999) have challenged the presupposition that attachment patterns established in childhood remain, for the

most part, stable across the lifespan. Clarke and Clarke (2000) proposed early life experiences are the first steps in a lifelong process of human development and attachment patterns can be reshaped beyond childhood. Some evidence has been found to indicate attachment patterns can change when affected by significant positive life events, potentially traumatizing life events (Waters et al., 2000), or chaotic and difficult life experiences (Davila & Cobb, 2004; Weinfield, Sroufe, & Egeland, 2000).

2.2.3 *Attachment in adolescence.*

Adolescence is a lifestage that creates some unique challenges related to attachment. It is a time when emotional, cognitive, and behavioural changes occur as adolescents actively seek to develop their identity and become independent from their parent/s or caregiver/s so as to develop intimate relationships with peers (Cooper et al., 1998; Erikson, 1963; Weiss, 1982). Securely attached adolescents tend to be more successful at developing autonomy than insecurely attached adolescents (Allen & Land, 1999). Research (Vivona, 2000) determined that securely attached late adolescents (i.e., 16 to 23 years of age), who were undergraduate college students, demonstrated lower levels of anxiety, depression, and worry when compared to undergraduate college students who were insecurely attached. In childhood, securely attached children seek proximity to their caregivers when they feel frightened or vulnerable (Bowlby, 1969/1982). As a child moves into adolescence and adulthood, proximity to caregivers decreases and symbolic communication (e.g., emails, phone calls, letters) increases and elicits the same resulting experience of comfort when feeling

frightened or stressed. Even though the attachment behaviours change, expectations developed about caregivers "are believed to persist and to influence the individual's mode of relating to others" (Armsden & Greenberg, 1987, p. 428). It is in adolescence that exploration of intimacy with peers becomes more prevalent. This can result in some confusion for the adolescent as she or he struggles with maintaining a relationship with a caregiver while developing stronger bonds with peers so as to develop a sense of belonging. Different attachment patterns affect "individual adjustment by way of their interaction with the stage-specific demands for interpersonal closeness or distance that are characteristic of different developmental periods and contexts" (Lopez, 1995, p. 410).

Adolescence is characterized by the need for reassurance that the caregiver will be available to provide comfort when needed, along with the need for intervals of nonparental involvement (Weiss, 1982). Development in adolescence is characterized by increasing intervals of not requiring contact with the caregiver until total relinquishment of the caregiver is achieved, often without the adolescent being aware this has happened. If total relinquishment occurs prior to the development of new attachments, loneliness can result (Weiss, 1982). Some adolescents experience emotional distress and feelings of isolation (Bostik, 2003) during this time of developing autonomy. New attachment is often developed with a peer within the context of an intimate relationship. Within this new attachment relationship the same indices are prevalent as with previous attachment relationships, such as a desire for

close proximity, comfort when being with the person, and an experience of distress upon separation (Weiss, 1982). In some cases, this new attachment may be with a group rather than with an individual. In adolescence it is likely that the attachment system shifts in object but retains it fundamental character (Weiss, 1982).

2.3 *Attachment and Psychopathology*

Psychopathology is a developmental construct that includes multiple factors that synergistically interact with one another at different times across the life span placing the person at risk for malfunctioning. Currently, attachment research is "one of the most promising avenues in developmental and clinical research to the understanding of psychological antecedents of disordered behavior" (Jones, 1996, p. 6). Insecure attachment, in childhood and adolescence, directly and indirectly increases the risk for psychopathology (Adam et al., 1996; Alexander, 1992; Allen et al., 1996; Cole-Detke & Kobak, 1996; Egeland & Carlson, 2004; Fonagy et al., 1996; Lyons-Ruth, 1996; Rosenstein & Horowitz, 1996; Sund & Wichstrom, 2002; van IJzendoorn et al., 1999; Wallis & Steele, 2001) and inhibits adaptation (Cummings & Cicchetti, 1990). This may be because the person becomes restricted in her or his ability to engage in satisfying relationships and is less able to interpret social interactions (Allen et al., 1996), or it may be because, in an attempt to maintain self-organization, internal working models are developed that establish defensive structures that then lead to distortions of personality and ultimately to psychopathology (Rosenstein & Horowitz, 1996). Insecure attachment patterns have been determined to constitute a

risk factor in the development of externalizing (Lyons-Ruth, 1996) and internalizing disorders (Bradley, 2000), while secure attachment constitutes a protective factor likely associated with resilience (Dozier et al., 1999).

Adolescents who have obtained an autonomous attachment classification have been found to value attachment relationships and see them as influential (Rosenstein & Horowitz, 1996). Individuals who have obtained a dismissing attachment classification have been found to externalize, turning away from Self and feelings without resolving troubling issues. They tend to alienate themselves, lack empathy, and demonstrate hostile anger (Weinfield et al., 1999). This attachment representation can result in a conduct disorder, narcissistic or antisocial personality disorder (Rosenstein & Horowitz, 1996), eating disorder, substance abuse and dependency, hostile types of depression, externalizing anxiety disorders (Cole-Detke & Kobak, 1996; Dozier et al., 1999); or self-reported narcissistic, antisocial, and paranoid traits (Rosenstein & Horowitz, 1996). One study (Fonagy et al., 1996) of adults, who all had a psychiatric diagnosis, determined that individuals who obtained a dismissing attachment classification were more likely to show improvement through psychotherapy than those who obtained other attachment classifications. The study found 93% of the participants who obtained a dismissing attachment classification showed clinical improvement, in terms of overall adaptation, upon discharge compared to 41% of participants who obtained a preoccupied attachment classification and 33% of participants who obtained an autonomous attachment classification. One

interpretation presented was that people who obtain a dismissing attachment classification may be more receptive to exploring the possibility that past relationships are "determinants of current difficulties...(as) they have previously avoided concerning themselves with such issues" (Fonagy et al., 1996, p. 28) than people who obtain a preoccupied attachment classification who likely have well established perceptions, that would interfere with therapy, about their past. In addition, individuals who obtained a preoccupied attachment classification tended to be absorbed in their feelings which likely caused them internal conflict and pain that resulted in internalized depression or anxiety, borderline personality disorder (Cole-Detke & Kobak, 1996; Dozier et al., 1999), obsessive-compulsive personality disorder, histrionic personality disorder, schizotypal personality disorder; or self-reported anxious, and dysthymic personality traits (Rosenstein & Horowitz, 1996). Individuals who obtained an unresolved attachment classification tended to be inconsistent in their attachment strategies (Main & Hess, 1990) which created a significant risk factor for developing aggressive disorders (Jones, 1996), and the development of dissociative disorders (van IJzendoorn et al., 1999; Weinfield et al., 1999).

Psychopathology and maladaptation tend to be more highly represented in high-risk samples (Weinfield et al., 1999). A number of disorders have been associated with risk factors that include poverty, parental psychopathology, and family violence (Greenberg, 1999). Attachment related events (e.g., trauma, loss, maltreatment) can

affect internal working models related to attachment (Dozier et al., 1999) and result in a negative view of Self and others (Bowlby, 1973), placing the person at-risk for developing psychopathology. In adolescence, as in adulthood, insecure attachment can reflect an overwhelming of the attachment behavioural system and organizational abilities due to unresolved early trauma (e.g., loss of a parent, maltreatment) or intense fear, terror, or feelings of helplessness (Main & Hess, 1990; Main & Solomon, 1990). Internal working models can become distorted, due to traumatic attachment relationships, which can result in distorted expectations and perceptions about future relationships and be self-perpetuating (Alexander, 1992).

2.4 *Attachment and Measured Affect Regulation and Cognitive Abilities*

Attachment research suggests parental attachment plays a significant role in social and emotional adjustment in adolescence (Engels, Finkenauer, Meeus, & Dekovic, 2001; Paterson, Pryor, & Field, 1995; Schore, 2003). Psychosocial adjustment in adolescence is affected by the successful development of autonomy (Noom, Dekovic, & Meeus, 1999). The development of secure attachment in the first two years of life ensures better psychosocial outcomes later in life, including affect regulation, sociability, and higher compliance with parents (Ainsworth et al., 1978: Bretherton, 1985). Developing secure attachment facilitates the development of competence to deal more effectively with relationship challenges (Thompson, 1999). If secure attachment is not developed early in life there is a risk of poor peer relations, lowered sociability, demonstration of hostility and other behavioural problems

(Erickson et al., 1985). Attachment representations have been linked to variations in adult affect regulation and social competence (Lopez, 1995), and it has been suggested that attachment theory may be a theory of affect regulation (Kobak & Sceery, 1988; Schore, 2003). From this perspective, attachment representations can be viewed as being composed of rules that guide responses to emotionally challenging situations. For example, a secure attachment representation could include rules that encourage the acknowledgement of distress and the seeking of help; an avoidant attachment representation could include rules that discourage the acknowledgement of distress and any attempts to gain comfort; and a resistant attachment representation could include rules that encourage focusing on the distress and attachment figure in an excessive way resulting in a lessening of autonomy and self-confidence (Kobak & Sceery, 1988). Attachment theory predicts that insecure attachment will result in less effective affect regulation strategies which may result in greater distress and dysfunction in relationships (Lopez, 1995). One way of measuring a person's potential ability to regulate affect is to measure his or her emotional intelligence (Petrides & Furnham, 2001).

A person's emotional intelligence can be measured by obtaining an Emotional Quotient (EQ) (Bar-On, 1997) that includes personal, emotional, social, and survival dimensions. "Emotional, personal and social intelligence is concerned with the ability to understand oneself and others, relate to people, and adapt to and cope with the immediate surroundings, which increases one's ability to be more successful in dealing

with environmental demands (Bar-On, 1997, p. 3). Bar-On's (1997) model of emotional intelligence focuses on the potential for performance and on process rather than on outcomes. Research (Chan, 2003) has suggested that there may be specific links between aspects of emotional intelligence and specific social coping strategies that require further exploration. Cognitive abilities are commonly assessed by obtaining an Intelligence Quotient (IQ), which identifies a person's ability to understand, learn, recall, solve problems, think rationally, and apply knowledge. It has been suggested that obtaining both IQ and EQ scores, rather than solely an IQ score, may provide a better indication of a person's general abilities and potential for success in life (Bar-On, 1997). Thus far, research has found no significant associations between Full Scale IQ scores and attachment classifications, or Full Scale IQ scores and Axis I diagnosis (Rosenstein & Horowitz, 1996).

2.5 *Previous Research*

A 1988 international literature meta-analysis study (van IJzendoorn & Kroonenberg, 1988), that examined almost 2,000 Strange Situation classifications in 32 studies, determined a distribution of children's attachment patterns (n = 1,990) to be 65% secure, 14% resistant, and 21% avoidant based on all available samples regardless of socioeconomic status (SES), risk factors, familial relationships, or environmental stressors; and cross-cultural differences to be relatively modest. A 1995 meta-analysis study (van IJzendoorn, 1995) of 14 studies, which focused on the relationship between the Strange Situation and the AAI (George et al., 1985) classifications, and 8

studies, focused on the relationship between AAI classifications and parental responsiveness, found a children's (n = 548) attachment distribution of 52% secure (Type B), 5% resistant (Type C), 21% avoidant (Type A), and 21% disorganized (Type D), and an adult attachment distribution of 50% autonomous/secure, 9% preoccupied/resistant, 20% dismissing/avoidant, and 22% unresolved/disorganized based on all available samples regardless of SES, risk factors, familial relationships, or environmental stressors. A 1996 meta-analysis study (van IJzendoorn & Bakermans-Kranenburg, 1996) of 33 studies, which included more than 2,000 AAI (George et al., 1985) classifications from nonclinical and clinical fathers, mothers, adolescents, and young adults found a non-clinical female and male adolescent and young adult attachment representation distribution (n = 225) of 48% autonomous, 12% preoccupied, 21% dismissing, and 20% unresolved or unclassifiable. Mothers from a low SES were more often classified with a dismissing attachment classification and with an unresolved (i.e., regarding a trauma or loss of an attachment figure) attachment classification. It was hypothesized that the high rate of the dismissing attachment classification could have been because "adverse and harsh socioeconomic circumstances might turn the reflection about attachment-related experiences into a lower priority" (van IJzendoorn & Bakermans-Kranenburg, 1996, p. 16). Adolescents' socioemotional and behavioural disorders appeared to be strongly related to their parents' basic insecurity. Among male and female adolescents and young adults with psychopathology (n = 165), the attachment classification distribution was 8%

autonomous, 25% preoccupied, 26% dismissing, and 40% unresolved or unclassifiable. No unequivocal correspondence was found between attachment classifications and specific disorders (van IJzendoorn & Bakermans-Kranenburg, 1996). It was suggested that further research is needed to confirm the conclusions of this study.

Allen, Hause, and Borman-Spurrell (1996) conducted a longitudinal study of a group of at-risk upper-middle-class adolescents (n = 66) to examine the long-term sequelae of severe adolescent psychopathology, using attachment theory. The participants had been diagnosed with severe psychopathology that required hospitalization at age 14. Diagnoses of the hospitalized adolescents included 21% oppositional defiant disorder, 19% conduct disorder, 19% major depression, 8% other mood disorders, and 33% other disorders. The at-risk adolescents were compared to a sociodemographically similar upper-middle-class group of high school students. The findings determined that insecure attachment representations, in young adulthood (e.g., age 25), was strongly predicted by psychopathology severe enough to warrant hospitalization at age 14. In young adulthood 8% of the former hospitalized adolescents obtained an autonomous classification and 45% of the former high school sample obtained an autonomous classification. It was hypothesized that insecure attachment may be related to the long-term sequelae of psychopathology. A disproportionately high rate of unresolved previous loss or trauma (e.g., abusive or frightening behaviour by an attachment figure) was associated with insecure attachment classifications in the sequelae of severe pathology. In addition, a

relationship was found among previous hospitalization, an insecure attachment classification, criminal behaviour, and drug use. Criminal behaviour was associated with a dismissing attachment classification and unresolved previous trauma. Neither self-worth or psychological distress were found to be related to attachment classifications. Given the relationship found between pathology and insecure attachment representations, the authors concluded "that the lens of attachment theory may well prove useful in understanding continuities in patterns of adaptation and maladaptation from adolescence into young adulthood" (Allen et al., 1996, p. 262). If it is determined conclusively that insecure attachment representations in adolescence are related to psychopathology in young adulthood, restructuring attachment internal working models, through attachment specific interventions, in adolescence could affect the trajectory of the psychopathology in later life and return the adolescent to a more normative developmental path.

Rosenstein and Horowitz (1996) conducted research based on their hypothesis that "the mental organization of attachment throughout the lifespan and between generations is of central importance in the psychopathology of adolescence" (p. 246). They also proposed that psychopathology was likely associated with specific attachment representations. Their sample included 60 adolescents (32 male, 28 female), between the ages of 13 and 20 years (M = 16 years), who had been admitted to a private psychiatric hospital, and 27 of their mothers. Participants were 95% Caucasian, 45% from two parent families, 37% lived with a single parent, and 18%

were from blended families. The adolescents' cognitive testing (i.e., WISC-R for adolescents under 16 years; WAIS-R for adolescents 16 years or older) determined their Verbal IQ scores ranged from 77 to 141 (M = 102.75, SD = 14.36), Performance IQ scores ranged from 68 to 134 (M = 104.51, SD = 15.50), and Full Scale IQ scores ranged from 74 to 134 (M = 103.73, SD = 14.33). For analysis purposes, the psychiatric disorders experienced by the adolescents were sorted into categories (a) conduct disorder, including oppositional defiant disorder; (b) affective disorder, including major depression, dysthymic disorder, and schizoaffective disorder; and (c) substance abuse. Comorbid diagnoses were included in the data. The AAI (George et al., 1985) was used to decipher attachment representations. Analysis determined that 2% of the adolescents obtained an autonomous attachment classification, 42% obtained a preoccupied attachment classification, 38% obtained a dismissing attachment classification, and 18% obtained an unresolved attachment classification. This was the first study to find pervasive insecure attachment representations among psychiatrically ill adolescents. Using a series of Analyses of Variance (ANOVAs), it was found that Verbal, Performance, and Full Scale IQ scores were unrelated to attachment classifications, or Axis I diagnosis. Using a series of likelihood ratio chi-square analyses, significant associations were found between Axis I diagnosis and attachment classifications. Conduct disorder and concurrent conduct disorder and affective disorders were associated with a dismissing attachment classification, and affective disorders were associated with a preoccupied attachment classification.

Participants diagnosed with substance abuse were twice as likely to obtain a dismissing attachment classification than those without a substance abuse diagnosis. Among the diagnosed substance abuse participants, conduct disorder was strongly associated with a dismissing attachment classification and better predicted this attachment classification than a diagnosis of substance abuse. Of the participants, 50% who were diagnosed with an affective disorder and substance abuse obtained a dismissing attachment classification and 50% obtained a preoccupied attachment classification. A series of likelihood ratio chi-square analyses were conducted to determine the relationship between gender and attachment classifications. Only three attachment categories were used (i.e., autonomous, dismissing, preoccupied). Analysis determined that 66% of males obtained a dismissing attachment classification compared to 25% of females who obtained a dismissing attachment classification; and 34% of males obtained a preoccupied attachment classification compared to 68% of the females who obtained a preoccupied attachment classification. Two females obtained an autonomous attachment classification. Affective disorders were found to be the most prevalent diagnosis among both females and males, and males were more likely to be diagnosed with conduct disorder. Twice as many males as females were diagnosed with substance abuse. All of the male adolescents with a preoccupied attachment classification were diagnosed with an affective disorder. Using a series of likelihood ratio chi-squares, it was determined that the dismissing attachment group were more antisocial, narcissistic, paranoid, and used drugs more than the preoccupied

attachment group. The preoccupied attachment group exhibited more anxiety and dysthymia than the dismissing attachment group. Conduct disorder was significantly associated with antisocial and paranoid features, and affective disorders were associated with anxiety and dysthymia. Participants with a diagnosis of obsessive-compulsive personality disorder and participants with a diagnosis of histrionic personality disorder were female and obtained a preoccupied attachment classification. The one participant diagnosed with schizotypal personality disorder was male and he obtained a preoccupied attachment classification. Of the participants, 58% who had been diagnosed with a personality disorder were diagnosed with a borderline personality disorder, and of those the majority were female; 64% obtained a preoccupied attachment classification, and 29% obtained a dismissing attachment classification. The researchers concluded the adolescents' attachment classifications and gender were related to their clinical diagnosis, and to some degree to their personality dimensions. Neither Full Scale IQ scores or severity of psychopathology were related to attachment classifications. The "findings are consistent with a developmental pathways perspective in which internal working models of attachment, guiding patterns of behavior and affect regulation, give rise to attachment strategies. These attachment strategies produce different vulnerability to psychiatric syndromes and personality traits" (Rosenstein & Horowitz, 1996, p. 249). The psychiatric syndromes and personality traits hypothesized to have emerged from each of the attachment representations were found to be related to each of the respective insecure

attachment patterns. Conduct disorder and substance abuse were associated with adolescents who obtained a dismissing attachment classification. They were likely using these strategies to minimize painful thoughts and feelings associated with rejection by the attachment figure. Affective disorders were associated with adolescents who obtained a preoccupied attachment classification, which supported the findings of other research studies (Cole-Detke & Kobak, 1996). Rosenstein and Horowitz (1996) concluded this relationship was likely due to the use of related strategies such as pronounced signals of distress to draw in an inconsistent attachment figure. It may be "only with the transition to adolescence, and the renewed press for autonomy that adolescence brings, that relational patterns characteristic of preoccupied individuals, which discourage autonomy and encourage over involvement with the parent, take on a renewed import" (Rosenstein & Horowitz, 1996, p. 249). This study's findings suggested that "the relationship between personality functioning and attachment rests on the similarity used to regulate against painful negative affects while simultaneously maintaining involvement with the attachment figure" (Rosenstein & Horowitz, 1996, p. 250).

Wallis and Steele (2001) conducted research to confirm their hypothesis that the absence of a secure base in early childhood contributed to a higher level of insecure attachment representation among adolescents in psychiatric residential units. Their sample (n = 39) included 10 males and 29 females, ranging in ages from 13 to 20 years (M = 16), who had been admitted for problems related to emotional and behavioural

difficulties. None of the participants were experiencing active psychosis or a developmental disability. All participants received a variety of treatments, including individual therapy, and family and group work, all within a therapeutic milieu that included the opportunity for the adolescents to enter into a safe, consistent relationship with an adult. The AAI (George et al., 1985) was used to decipher attachment representations. Analysis determined that 10% of the participants (n = 4) obtained an autonomous attachment classification, 28% (n = 11) obtained a preoccupied attachment classification, 51% (n = 20) obtained a dismissing attachment classification, 10% (n = 4) were not classifiable, and of all of the classifications, 59% were classified as unresolved regarding past loss or abuse. All of the participants who were classified as secure were female and all of the males in the sample were classified as insecure. Of the females who were classified as secure, there was a significant trend towards having resolved past loss or trauma. All of the participants had experienced some form of childhood abuse or loss. Of those who experienced loss (n = 15), 27% were classified as unresolved. Of those (n = 19) who experienced loss and sexual abuse or physical abuse, 84% were classified as unresolved. These findings found high levels of insecure attachment representation, especially dismissing, and low levels of secure attachment representation. It was found that self-derogation, hopelessness, and dread of the future were prevalent in all of the interviews with the adolescents who obtained a dismissing attachment classification. "These interviews reflected a profound sense of mourning work not yet begun....the clinical challenge is likely to be one of helping

these young people engage with the social and emotional implications of their troubled past and/or ongoing attachment adversities" (Wallis & Steele, 2001, p. 264). The adolescents who experienced loss and other trauma were not as likely to have resolution as the ones who experienced loss alone suggesting that "trauma may have its most pathogenic effect when it is cumulative" (Wallis & Steele, 2001, p. 265). Yet, one participant, who had experienced loss, physical abuse, and sexual abuse was identified as being resolved. During the interview she concluded, "just because my parents didn't love me doesn't mean I am unlovable" (Wallis & Steele, 2001, p. 265). This was the first study to demonstrate the impact that resolution of loss and trauma with attachment figures has among a residential adolescent clinical sample. Further research was suggested to determine the types of therapy that would assist adolescents to resolve past trauma to return them to a more normative developmental pathway. It was hypothesized that a therapy that included "the promotion of reflective functioning, a mental and emotional capacity similar to the constructs of insight and empathy" (Wallis & Steele, 2001, p. 265) might be beneficial. It was also suggested that therapeutic change with this population should be conceived as the development of interpersonal and intrapersonal awareness. Limitations of this study included the lack of a control group, attachment classifications were not identified in relationship to psychopathology, and the assessment of attachment classifications was not conducted at the beginning and end of treatment. Rectifying these limitations was suggested for future researchers.

These research studies have begun to uncover the prevalence rate of secure and insecure attachment representations among some at-risk adolescents (Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001), and the relationship between insecure attachment and the development of psychopathology in adolescence (Rosenstein & Horowitz, 1996) and young adulthood (Allen et al., 1996). Knowledge is still limited related to the process or etiological pathways related to attachment representations of at-risk adolescents, and nonexistent in terms of the distribution of attachment representations among at-risk adolescents of Aboriginal ethnicity and adolescents with developmental disabilities. To begin to fill in these knowledge gaps, this research study explored a population of at-risk adolescents, some of whom with developmental disabilities (e.g., Fetal Alcohol Spectrum Disorder, Mental Retardation); who were of First Nation, Caucasian, Metis, and Inuit ethnicities; and who comprised a reasonably large sample size ($N = 134$). To enhance understanding of etiological pathways related to attachment representations, potentially traumatizing life events experienced by the adolescent, adolescent risk factors at the time of intake into the organization, and familial risk factors at the time of intake of the adolescent into the organization were all identified. Due to the vulnerability of this population and the difficulties inherent in studying at-risk adolescent populations, secondary data was accessed for analysis purposes.

Many previous attachment related research studies which have studied adolescents have administered the AAI (George et al., 1985) to differentiate among

attachment representations. It has been acknowledged that the AAI is "one of the most time-consuming instruments in the area of developmental and clinical psychology....(which) requires extensive training and practice, and careful verbatim transcription...and a laborious coding procedure" (van IJzendoorn & Bakermans-Kranenburg, 1996, p. 16). In this research study, the Family Drawing Attachment Rating Form (FDARF) was developed, based on findings from previous research studies (Fury et al., 1997; Grossmann & Grossmann, 1991; Kaplan & Main, 1986; Madigan et al., 2003; Pianta & Longmaid, 1999), so as to contribute to the development of a reliable and valid alternative instrument that could more easily be used in research and clinical practice to differentiate among attachment representations.

Chapter Three

Research Design

This exploratory research study focused on some at-risk adolescents to (a) identify the prevalence rate of secure and insecure attachment classifications; (b) distinguish among secure and insecure attachment classifications; (c) identify possible attachment classification related etiological pathways (i.e., early potentially traumatizing life events experienced by the adolescent, adolescent risk factors, familial risk factors); (d) explore potential relationships among attachment classifications, comorbid psychological diagnoses, measured emotional intelligence, measured cognitive intelligence, gender, age, birth order, and ethnicity; and (e) explore the use of family drawings to differentiate among attachment representations. This study utilized a quantitative research design, and sought to support or disprove previous research findings (Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001) which identified the prevalence rate of attachment classifications among at-risk adolescents, and the relationship among attachment classifications and cognitive abilities (Rosenstein & Horowitz, 1996). This study also sought to extend previous research findings (Allen et al., 1996; Fury et al., 1997; Madigan et al., 2003; Pianta & Longmaid, 1999; Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001) some of which identified psychopathology associated with different attachment classifications and determined a relationship between attachment classifications and early potentially

traumatizing life events as part of etiology (Allen et al., 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001). This research study examined measured emotional intelligence to determine if there is a relationship between emotional ability and cognitive ability; and emotional ability and attachment classifications, which constituted original research as identified in the Introduction section of this document.

3.1 *Methodology*

This study utilized a single-group design and included analysis and rescoring of secondary data. Data collection occurred over approximately 6 months in a not-for-profit organization that provides specialized schooling and intensive treatment to at-risk urban and rural children and adolescents in Western Canada.

3.2 *Participants*

Secondary data from a purposive sample of at-risk adolescents included all of the females and males who were enrolled in the forementioned organization during the data accessing time of this study. No adolescent file selection criteria was used other than current enrollment in the organization and being between the ages of 12 and 17 years of age.

3.3 *Instruments*

Most of the secondary data analyzed in this study was originally obtained as part of the standard battery administered for psychoeducational assessment purposes within the forementioned organization. The remaining secondary data was obtained

from intake files, information consolidation reports, and the most recent psychological reports that accompanied the client into the organization. Data from the following instruments were included in this study (a) Kinetic Family Drawing (KFD) (Burns & Kaufman, 1972; Knoff & Prout, 1987); (b) Emotional Quotient Inventory: Youth Version (EQ-i: YV) (Bar-On & Parker, 2000); and (c) standardized intelligence tests which included the Wechsler Intelligence Scale for Children (WISC-III) (Wechsler, 1991) and (WISC-IV) (Wechsler, 2003), Wechsler Abbreviated Scale of Intelligence (WASI) (Wechsler Abbreviated Scale of Intelligence, 1999), Stanford Binet Intelligence Scales (SB:IV) (Thorndike, Hagen, & Sattler, 1986), and the Test of Nonverbal Intelligence (TONI-3) (Brown, Sherbenou, & Johnsen, 1997). The Kinetic Family Drawing (KFD) (Burns & Kaufman, 1972; Knoff & Prout, 1987) protocols were rescored during this study to differentiate among attachment representations. Psychological diagnoses determined by or under the supervision of a Registered Psychologist or Psychiatrist, using mostly the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-IV) (American Psychiatric Association, 2000), were obtained from psychological reports for most of the adolescents in the sample. Organizational intake files and information consolidation reports about the adolescents were reviewed to gather demographic data and to identify possible etiological pathways (i.e., early potentially traumatizing life events experienced by the adolescent, adolescent risk factors at the time of intake into the organization, familial risk factors at the time of intake of the adolescent into the organization).

The Kinetic Family Drawing (KFD) (Burns & Kaufman, 1972; Knoff & Prout, 1987) is a projective test that requires the respondent to draw a picture of his or her family. The KFD data accessed in this study was gathered on an 8 1/2" x 11" sheet of white paper using an HB pencil, coloured pencils, and felt pens. The directions were, "Draw a picture of everyone in your family, including you, DOING something. Try to draw whole people, not cartoons or stick people. Remember, make everyone DOING something - some kind of action" (Knoff & Prout, 1987, p. 4). Because of the unique and challenging familial backgrounds experienced by many of the adolescents in this organization, the following instructions were added to the standard instructions, "Your picture can include your biological family or any of the people or animals (cats or dogs) you consider to be part of your family". Stick figures were indicated as acceptable if inquired about due to the developmental delay and cognitive limitations experienced by many of the adolescents. The adolescent took as much time as she or he wanted to complete the drawing. Each person in the drawing was identified along with what each person was doing, if it was not obvious, by the respondent, and the examiner recorded on the protocol the relationship (e.g., mother, father, step-brother, sister, friend) of the figures and what they were doing.

Research (Fury et al., 1997; Grossmann & Grossmann, 1991; Madigan et al., 2003; Pianta & Longmaid, 1999) suggests the KFD shows promise for accessing representational models of attachment. Support for the reliability and validity of Kaplan and Main's (1986) attachment theory-based approach for classifying family

drawings, created by children between the ages of 5 to 9 years of age, using a checklist of specific signs (Kaplan & Main, 1986) has been preliminarily established (Fury et al., 1997; Pianta & Longmaid, 1999). Chi-square analyses has determined 20 drawing features that are significantly associated in terms of their ability to differentiate among the four attachment classifications (Pianta & Longmaid, 1999). Validity testing has found attachment classifications to be related to measures of concurrent socioemotional and behaviour functioning independent of age, gender, socioeconomic status (SES), Full Scale IQ score, and fine-motor co-ordination (Pianta & Longmaid, 1999). Discriminant function analysis, using 14 of 20 drawing features found to be significantly associated with attachment classifications based on chi-square analysis, correctly classified 82.5% of the drawings in one research study; 93% with a secure attachment classification, and 75% with the three insecure attachment classifications (Pianta & Longmaid, 1999). Research has found the Family Drawing Global Rating Scales to be more robust than the Family Drawing Checklist of Signs for differentiating the KFD drawings into attachment classifications, although, the use of specific drawing features to differentiate among attachment classifications becomes more robust when aggregated (Fury et al., 1997; Madigan et al., 2003; Pianta & Longmaid, 1999). Significant interrater agreement (kappa range of .72 to .93) was obtained for distinguishing among the four attachment classifications at a global level (Fury et al., 1997).

Based on findings from previous research studies (Fury et al., 1997;

Grossmann & Grossmann, 1991; Kaplan & Main, 1986; Madigan et al., 2003; Pianta & Longmaid, 1999), the Family Drawing Attachment Rating Form (FDARF) (see Appendix A) was developed for this study to differentiate among the four attachment classifications based on rescoring of family drawings. The Modified and Expanded Family Drawing Checklist of Signs (see Table 1) was integrated into the FDARF based on research findings (Fury et al., 1997; Kaplan & Main, 1986; Madigan et al., 2003; Pianta & Longmaid, 1999). Drawing features for secure attachment were not included in Fury, Carlson, and Sroufe's (1997) research study. Pianta and Longmaid's (1999) research study identified drawing features that were more prevalent in differentiating a secure attachment classification. These drawing features were included in the Modified and Expanded Family Drawing Checklist of Signs which was incorporated into the FDARF. Madigan et al.'s (2003) research study found the drawing feature "neutral/negative affect" emerged as significantly associated with the avoidant attachment classification. In the FDARF, "neutral/negative affect" was included in the list of Dismissing (Avoidant) Attachment Signs of the Modified and Expanded Family Drawing Checklist of Signs. Madigan et al.'s (2003) research study found "figures not grounded (family floating in air)" to be significantly associated with the resistant attachment classification. In the FDARF, this drawing feature was removed from Insecure (Preoccupied, Dismissing, or Unresolved) Attachment Signs, as determined by Fury et al. (1997), and was utilized to differentiate a preoccupied/resistant attachment classification (Madigan et al., 2003). Pianta and Longmaid's (1999)

Table 1

Modified and Expanded Family Drawing Checklist of Signs

Autonomous (Secure) Attachment Signs
overall impression: family (or adolescent) portrayed as happy, comfortable with others, realistic, solid, centred on paper
firm, open-armed embracing stance
grounded figures
complete figures
individual figures
General Insecure (Preoccupied, Dismissing, or Unresolved) Attachment Signs
lack of background detail
incomplete figures
mother not feminized
males and females undifferentiated by gender
Preoccupied (Resistant) Attachment Signs
overall impression: emphasis on vulnerability; isolated, worried, fearful
figures not grounded (floating on page)*
figures crowded or overlapping*
encapsulation of one or more figures*
figures separated by barriers*
lack of individuation*
exaggeration of soft body parts (e.g., bellies)*
unusually small figures*
unusually large figures

extreme proximity of figures

figures on corner of page

exaggeration of hands/arms

Dismissing (Avoidant) Attachment Signs

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overall impression: happiness or invulnerability; impression of isolation

arms downward and close to body (less than 45 degrees from body)*

exaggeration of heads*

exaggeration of facial features*

neutral or negative facial features*

adolescent and mother positioned far apart on the page

omission of mother or adolescent

arms absent

automatic smiles

lack of color

disguised family members

Unresolved (Disorganized) Attachment Signs

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overall impression: ominous, foreboding elements, irrational, or disorganized

overbright, bright, excessive sweetness*

false starts, scratched out figures, or both

unfinished objects or figures

scrunched figures

unusual signs, symbols, or scenes

---

* found to be significantly associated ($p < .05$) with the attachment classification designation by one or more research studies (Fury, Carlson, & Sroufe, 1997; Madigan, Ladd, & Goldberg, 2003; Pianta & Longmaid, 1999)

research study found "automatic smiles" and "arms absent" to be features more prevalent in differentiating an avoidant attachment classification. In the FDARF, these two drawing features were added to differentiate a dismissing/avoidant attachment classification. Fury et al.'s (1997) research study found the drawing feature of "exaggeration of soft body parts" to be significantly associated with a resistant attachment classification. Pianta and Longmaid's (1999) research also supported this feature as differentiating a resistant attachment classification, and identified this feature as specifically including "bellies". This aspect was added to the FDARF drawing features to differentiate a preoccupied/resistant attachment classification. Pianta and Longmaid's (1999) findings found "overbright, bright, excessive sweetness" and "unfinished objects" to be more prevalent in differentiating a disorganized attachment classification. In addition, Pianta and Longmaid's (1999) findings expanded the original drawing features that distinguished a disorganized attachment classification to include "false starts", "unusual signs, symbols, or scenes", and "ominous, foreboding, irrational features". All of these findings were included in the FDARF to differentiate an unresolved/disorganized attachment classification. The "Overall Impression" drawing features determined to be significantly associated in differentiating an avoidant attachment classification and a resistant attachment classification by Pianta and Longmaid's (1999) research study, as well as ones determined by Kaplan and Main (1986), were also incorporated into the FDARF.

All eight of the Family Drawing Global Rating Scales (see Table 2), originally

Table 2

Family Drawing Global Rating Scales

Scale	Attachment Pattern	Description
Vitality/Creativity	autonomous (secure)	emotional investment in drawing reflected in embellishment, detail, and creativity
Family Pride/Happiness	autonomous (secure*)	sense of belonging to and happy in the family group
Vulnerability	preoccupied (resistant*)	vulnerability and uncertainty reflected in size distortions, placement of figures on the page, and exaggeration of body parts
Role Reversal	preoccupied (resistant*)	suggestions of role reversal inferred from relations of size or roles of drawn figures
Emotional Distance/Isolation	dismissing (avoidant*)	loneliness reflected in disguised expressions of anger, neutral or negative affect, distance between mother and child
Tension/Anger	dismissing (avoidant*)	inferred from figures that appear constricted, closed, without colour or detail, careless in appearance, or scribbled/crossed out
Bizarreness/Dissociation	unresolved (disorganized)	underlying disorganization expressed by unusual signs, symbols, fantasy themes
Global Pathology	insecure*	degree of negativity reflected in global organization, completeness of figures, use of color, detail, affect, and background scene

* research (Fury et al., 1997; Madigan et al., 2003) has found these global rating scales to be significantly associated ($p < .05$) with specific attachment patterns

developed (Fury et al., 1997), were incorporated into the FDARF. Attachment classification designations were added, based on research findings (Fury et al., 1997; Madigan et al., 2003), and renamed to maintain consistency with attachment classification designations prevalent in the literature focused on the life stage of adolescence (i.e., autonomous, preoccupied, dismissing, unresolved).

In this study, the FDARF was developed to reanalyse the KFD so as to differentiate among autonomous, preoccupied, dismissing, and unresolved attachment classifications (the attachment classification names commonly used in adolescence) based on the family drawings of some at-risk adolescents. The FDARF includes four levels of analysis (a) Modified and Expanded Family Drawing Checklist of Signs (Fury et al., 1997; Kaplan & Main, 1986; Madigan et al., 2003; Pianta & Longmaid, 1999), (b) Family Drawing Global Rating Scales (Fury et al., 1997; Madigan et al., 2003), (c) Global Clinical Impression based on the highest ratings on the previous scales and a review of overall impression guidelines (Kaplan & Main, 1986, as cited by Pianta & Longmaid, 1999), and (d) Final Clinical Rating for the family drawing based on all of the scores. To rescore the KFD protocols, the Modified and Expanded Family Drawing Checklist of Signs (Fury et al., 1997; Kaplan & Main, 1986; Madigan et al., 2003; Pianta & Longmaid, 1999) was used to determine the presence or absence of discrete drawing features. The Family Drawing Global Rating Scales (Fury et al., 1997; Madigan et al., 2003) was used to assign an attachment classification based on a global or overall impression of the drawing using a 7-point Likert-style rating scale ranging

from 0 (none) to 7 (prominent). The Global Clinical Impression was determined based on the highest scores previously obtained and a review of the overall impression guidelines (Kaplan & Main, 1986, as cited by Pianta & Longmaid, 1999), and the Final Clinical Rating for the family drawing was determined based on all of the scores.

The Emotional Quotient Inventory: Youth Version (EQ-i: YV) (Bar-On & Parker, 2000) had been administered to ascertain an emotional intelligence score. The EQ-i: YV is a self-report instrument that assesses emotional intelligence of children and adolescents between the ages of 7 and 18 years. Research has found the Emotional Quotient Inventory (EQ-i) domain and component scales to have good item homogeneity and internal consistency, and consistent reliability and consistency for both genders (Dawda & Hart, 2000). The EQ-i: YV is composed of 60 items distributed across 7 scales and uses a 4-point Likert-style format. The Total Emotional Quotient score is composed of scores from 4 scales (1) Intrapersonal, (2) Interpersonal, (3) Stress Management, and (4) Adaptability. In addition, there are General Mood and Positive Impression scales. A corrective factor has been incorporated into the instrument that adjusts for positive response bias, and an Inconsistency Index detects inconsistent responding styles.

The EQ-i was developed using a normative sample of approximately 4,000 adolescents and adults aged 16 years and older. The EQ-i: YV evolved from the EQ-i. During a seven stage developmental process a total sample of 1,451 children and adolescents from Canada and the United States, ranging in ages from 6 to 18 years,

were accessed (Bar-On & Parker, 2000). Internal reliability (Cronbach's alpha) for EQ-i: YV scales, for both genders and ages 13 to 18 years, ranged from .81 to .90 (Bar-On & Parker, 2000). Mean inter-item correlation for EQ-i: YV scales, for both genders and ages 13 to 18 years, ranged from .17 to .55 (Bar-On & Parker, 2000). Test-retest reliability was obtained using a sample of 60 children and adolescents with a mean age of 13 years and a 3 week interval. The reliability coefficients for the EQ-i: YV scales ranged from .77 to .89 (Bar-On & Parker, 2000). The standard error of measurement for the EQ-i: YV scales, for both genders and ages 13 to 18 years, ranged from 1.50 to 1.72 (Bar-On & Parker, 2000). The standard error of prediction based on 3-month test-retest reliability, for both genders and for ages 13 to 18 years, ranged from 1.52 to 3.22 (Bar-On & Parker, 2000). In terms of construct validity, factor analysis (four rotated factors) of the EQ-i: YV items was conducted with a total normative sample of 9,172 of children and youth. The percentage of variance of 40 items from the Intrapersonal, Interpersonal, Stress Management, and Adaptability scales ranged from 5.70 to 19.48 (Bar-On & Parker, 2000). Correlation between different scales on the EQ-i: YV and the congruent scales from the EQ-i, using a sample of 49 participants that ranged in ages from 17 to 18 years and who completed both instruments on two occasions one week apart, produced moderate to very high correlations between the two instruments. Correlations ranged from .56 (Intrapersonal scale) to .88 (General Mood scale) (Bar-On & Parker, 2000). Correlations between the EQ-i: YV and the NEO-Five Factor Inventory with a sample of 102 adolescents, ages 12 to 17 years,

ranged from .00 to .57 ($p < .05$) (Bar-On & Parker, 2000). The reliability and validity of the EQ-i has been supported through other research findings (Dawda & Hart, 2000).

3.4 *Other Measures*

The psychological diagnoses that were accessed in this study were determined by or under the supervision of a Registered Psychologist or Psychiatrist using mostly the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-IV) (American Psychiatric Association, 2000). In this study, psychological diagnoses were grouped initially into five categories (a) externalizing disorders; (b) internalizing disorders; (c) static encephalopathy; (d) personality disorders; and (e) substance abuse. Table 3 identifies the specific diagnoses included in each of the five categories. Most of the adolescents had more than one diagnosis. For analysis purposes, the comorbid diagnoses were placed into nine diagnostic groupings (see Table 4).

To determine possible attachment related etiological pathways (i.e., early potentially traumatizing life events experienced by the adolescent, adolescent risk factors at the time of intake into the organization, familial risk factors at the time of intake of the adolescent into the organization) intake files and information consolidation reports were reviewed. Early potentially traumatizing life events (Main & Hess, 1990; Waters et al., 2000) included in this study are identified in Table 5.

The adolescent risk factors identified at the time of intake into the organization that were included in this study are identified in Table 6, and the familial risk factors at the time of intake of the adolescent into the organization included in this study are

Table 3

Five Categories of Psychological Diagnoses, Including DSM-IV Diagnoses

Categories	Psychological Diagnoses
Externalizing Disorders	Attention Deficit Hyperactivity Disorder Oppositional Defiant Disorder Conduct Disorder Disruptive Behaviour Intermittent Explosive Disorder Impulse-Control Disorder
Internalizing Disorders	Major Depressive Disorder Dysthymic Disorder Bi-polar Disorder Emotional Instability Generalized Anxiety Disorder Obsessive-Compulsive Disorder Post Traumatic Stress Disorder Adjustment Disorder Reactive Attachment Disorder
Static Encephalopathy	Static Encephalopathy Borderline Intellectual Functioning Mental Retardation Downs Syndrome Fetal Alcohol Spectrum Disorder - Fetal Alcohol Syndrome - Alcohol Related Neurodevelopmental Disorder - Fetal Alcohol Effects
Personality Disorders	Personality Development Disorder Borderline Personality Disorder Histrionic Personality Disorder Dissociative Disorder Psychiatric Disorder
Substance Abuse	Alcohol Abuse Cannabis Abuse Cocaine Abuse Hallucinogen Abuse Opioid Abuse Phencyclidine Abuse Inhalant Abuse Nicotine Dependence

Table 4

Groupings of Psychological Diagnoses

	Diagnostic Groupings
1)	No Diagnosis
2)	Externalizing Disorder/s
3)	Internalizing Disorder/s or Internalizing Disorder/s & < 85 IQ &/or FASD
4)	< 85 IQ &/or FASD
5)	Externalizing Disorder/s & Internalizing Disorder/s
6)	Externalizing Disorder/s & < 85 IQ &/or FASD
7)	Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD
8)	Substance Abuse Substance Abuse & Externalizing Disorder/s Substance Abuse & Internalizing Disorder/s Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s Substance Abuse & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD
9)	Personality Disorder Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s Personality Disorder & Externalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD & Substance Abuse

Table 5

Early Potentially Traumatizing Life Events

Early Potentially Traumatizing Life Events Experienced by Adolescent	
1)	death of both biological parents
2)	death of one biological parent
3)	death of one or more step-parent, adoptive, or foster parent
4)	death of a sibling or close family member (e.g., grandparent, uncle, cousin)
5)	sexual abuse by a parent, caregiver, or family member
6)	neglect or abandonment by a parent, caregiver, or family member
7)	emotional abuse by a parent, caregiver, or family member
8)	physical abuse by a parent, caregiver, or family member
9)	sexual, emotional, or physical abuse by a nonfamily member
10)	life-threatening illness or life-altering accident experienced by parent, caregiver, or adolescent (e.g., cancer, AIDS, head injury)
11)	immediate family substance abuse
12)	biological parent who has a psychological disorder
13)	biological parent separation or divorce
14)	witnessing familial sexual, physical, or emotional abuse
15)	more than two foster care or treatment centre placements
16)	one or more absent parent or caregiver

Table 6

Adolescent Risk Factors Identified at Time of Intake Into the Organization

	Adolescent Risk Factors
1)	suicide ideation or attempts
2)	substance use or abuse
3)	physical and/or verbal aggression
4)	attention deficit and/or hyperactivity
5)	depression
6)	anxiety
7)	mental retardation
8)	Fetal Alcohol Spectrum Disorder (suspected or diagnosed)
9)	learning disorder
10)	physical concerns (e.g., seizures, head injury, diabetes, enuresis)
11)	eating disorder
12)	other psychological diagnosis
13)	delinquency or criminal behaviour (e.g., theft, prostitution, sexual assault)
14)	sexual risk taking behaviour
15)	truancy
16)	going AWOL
17)	blended family

identified in Table 7. The familial risk factors at the time of intake of the adolescent into the organization included in this study were identified separately for the adolescent's biological (1) mother, (2) father, and (3) siblings and extended family. Information about the adolescent's date of birth, gender, birth order, ethnicity, and ability to attach to caregivers, as subjectively identified by the guardian at the time of intake of the adolescent into the organization, were accessed from intake files and consolidation reports.

3.5 *Ethics*

Ethics approval was obtained from the University of Alberta Faculties of Education and Extension Research Ethics Board using an application proposal written in accordance with the University of Alberta Ethical Guidelines for Research Involving Human Participants. Specifics about the study, as previously stated, were included in the application. A letter of permission was obtained from the Executive Director of the not-for-profit organization in Western Canada, that provides specialized schooling for at-risk urban and rural children and adolescents, to access the secondary data utilized in this study. Identification numbers rather than names were used in data collection and analysis to ensure anonymity. Signatures on an Agreement to Maintain Confidentiality was obtained from the two psychology assistants (see Appendix B) who rescored the KFD. The rescored secondary data (i.e., KFD) documentation generated during this study, will be kept by the researcher in a secure metal filing cabinet for 5 years.

Table 7

Biological Familial Risk Factors Identified at Time of Intake of Adolescent Into the Organization

	Biological Familial Risk Factors
1)	suicide ideation, attempts, or committed suicide
2)	substance abuse
3)	physical and/or verbal aggression
4)	attention deficit and/or hyperactivity
5)	depression
6)	anxiety
7)	mental retardation
8)	Fetal Alcohol Spectrum Disorder (suspected or diagnosed)
9)	learning disorder
10)	physical concerns (e.g., seizures, poor eye sight, head injury, AIDS, diabetes)
11)	eating disorder
12)	other psychological diagnosis
13)	delinquency or criminal behaviour (e.g., theft, prostitution, sexual assault)
14)	history of physical abuse
15)	history of sexual abuse

3.6 *Procedure*

Once ethics approval was obtained, participants' files were reviewed to obtain a measurement of cognitive ability (i.e., Full Scale IQ score), a measurement of emotional ability (i.e., Total EQ score), and psychological diagnoses. This data was gathered from the most current psychological assessment reports, written by or under the supervision of a Registered Psychologist or Psychiatrist, available. Of the psychological reports that were accessed, 85% had been completed from 2006 to 2003, 14% had been completed from 2002 to 1999, and 1% had been completed from 1998 to 1996. Participants' intake files and consolidation reports were also reviewed to obtain demographic information (e.g., gender, date of birth, birth order, ethnicity) and familial information (e.g., early potentially traumatizing life events experienced by the adolescent, adolescent risk factors at the time of intake into the organization, familial risk factors at the time of intake of the adolescent into the organization). The KFD drawings were independently rated by three different raters; two psychology assistants, who were employed at an accredited hospital, and the researcher. To maintain confidentiality, the drawings were identified by number and the psychology assistants signed an agreement of confidentiality. Before the initial rating process, the researcher provided the two psychology assistants with a training session that included verbal and written information (see Appendix C) about attachment theory and specific steps to take when rating the family drawings; a description of attachment classification related characteristic responses observed in previous research studies;

and an explanation of the FDARF, developed by the researcher and used to rate the family drawings in this study. No previous attachment related information about the participants was used by any of the three raters during the initial rating process. The researcher had access to the identified adolescent risk factors at the time of intake into the organization and familial risk factors at the time of intake of the adolescent into the organization, and this information was made available to the psychology assistants during the second rating process for the five drawings which were the most difficult to rate. For the drawings where there was not unanimity in the final clinical rating, each rater reviewed these drawings and their scoring forms for the second time to determine if they wanted to make any changes. Some rating changes were made at that time.

3.7 *Data Analysis*

An SPSS database was developed for this study that included demographic (e.g., gender, date of birth, birth order, ethnicity), familial (e.g., early potentially traumatizing life events experienced by the adolescent, adolescent risk factors at the time of intake into the organization, familial risk factors at the time of intake of the adolescent into the organization), and diagnostic information (i.e., DSM-IV diagnoses); and test scores (i.e., Full Scale IQ score, Total EQ score), attachment classifications (i.e., rescored KFD), and a subjective determination by the adolescent's guardian at the time of intake into the organization about the adolescent's ability to attach to caregivers.

The attachment classifications, arrived at by rescoring the KFD, were analysed

to determine the degree of inter-rater agreement by utilizing crosstabs with a Cohen's kappa value (e.g., 1 indicating perfect agreement; adequate levels of interrater agreement set at > or = .60). Descriptive statistics were generated from the data to determine frequencies, central tendency (e.g., mean, median, mode), percentiles, distribution (e.g., skewedness), and variability (e.g., standard deviation, range). The attachment classifications, specific adolescent risk factors at the time of intake into the organization, specific familial (i.e., mother's, father's, siblings and extended family's) risk factors at the time of intake of the adolescent into the organization, gender, birth order, and ethnicity variables yielded categorical scores. Likelihood ratio chi-square analyses were conducted with these variables to determine if significant associations existed. The psychological diagnoses variable also yielded categorical scores, specific ones and ones that included multiple-responses due to comorbid diagnoses. As a result this variable was analyzed looking at both specific diagnosis and diagnostic groupings, that were composed of comorbid diagnoses. To determine if significant associations existed among specific and comorbid psychological diagnoses and attachment classifications, gender, birth order, ethnicity, specific potentially traumatizing life events experienced by the adolescent, specific adolescent risk factors at the time of intake into the organization, and specific familial (i.e., mother's, father's, siblings and extended family's) risk factors at the time of intake of the adolescent into the organization, likelihood ratio chi-square analyses were conducted. To determine if statistically significant relationships existed among specific and comorbid

psychological diagnoses and Full Scale IQ scores, Total EQ scores, age, total number of potentially traumatizing life events experienced by the adolescent, total number of adolescent risk factors at the time of intake into the organization, and total number of familial risk factors at the time of intake of the adolescent into the organization, a series of ANOVAs were conducted with Tukey procedure used for post hoc analysis. A series of one-way ANOVAs were conducted to determine if Full Scale IQ scores, Total EQ scores, age, total number of potentially traumatizing life events experienced by adolescent, total number of adolescent risk factors at the time of intake into the organization, and total number of familial risk factors at the time of intake of the adolescent into the organization were related to attachment classifications, gender, birth order, and ethnicity, and if these relationships were statistically significant. The Full Scale IQ scores, Total EQ scores, total number of potentially traumatizing life events experienced by the adolescent, total number of adolescent risk factors at the time of intake into the organization, and total number of familial risk factors at the time of intake of the adolescent into the organization variables yielded continuous scores. To determine if relationships existed among these variables bivariate correlation was used for analysis.

Chapter Four

Results

4.1 *Participants*

Secondary data was accessed for a purposive sample of at-risk adolescents (N = 134) between the ages of 12 and 17 years (M = 14.25 years; SD = 1.44), which included all of the females (n = 59) and males (n = 75) who were enrolled in a not-for-profit organization in Western Canada that provides residential intensive treatment and specialized schooling to at-risk urban and rural children and adolescents, during the data accessing time of this study. The adolescents represented four ethnicities, 46% First Nation (n = 61), 33% Caucasian (n = 44), 16% Metis (n = 21), and 6% Inuit (n = 8). Of the adolescents whose birth order had been identified (n = 100), 67% were identified as the oldest child within their gender, 12% were identified as a middle child within their gender, 16% were identified as the youngest within their gender, and 5% were identified as only children. All of the adolescents attended specialized schools operated by the forementioned organization. Of the participants, approximately 60% resided in two rural intensive treatment centres, 19% resided in homes in the larger community, 14% resided in group homes operated by the organization, and 8% resided in a rural intensive treatment centre specifically for addictions treatment.

4.2 *Attachment Classifications*

4.2.1 *Final classification differentiation.*

Of the family drawings created by the at-risk adolescents (n = 133), based on

the final ratings determined by the three independent raters using the Family Drawing Attachment Rating Form (FDARF) (see Appendix A), 12% were rated autonomous/secure and 88% were rated insecure. Of the family drawings, 12% (n = 16) were rated autonomous/secure (see Figure 6 for example), 42% (n = 56) were rated preoccupied/resistant (see Figure 7 for example), 37% (n = 49) were rated dismissing/avoidant (see Figure 8 for example), and 9% (n = 12) were rated unresolved/disorganized (see Figure 9 for example).

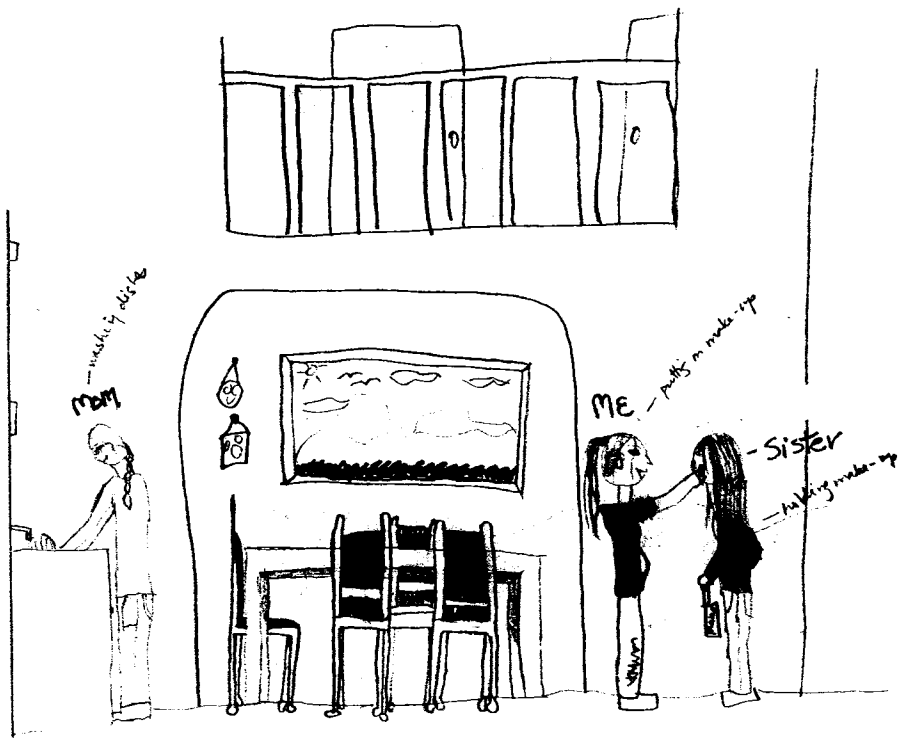

Figure 6. Example of a family drawing rated autonomous/secure.

4.2.2 *Rating procedure and reliability.*

Upon completion of the initial rating process, two of the three raters of each drawing (n = 133) rated 11.3% (n = 15) of the family drawings as autonomous/secure

and 85% (n = 113) as insecure. Of the remaining drawings, 3.8% (n = 5) were rated as secure by one rater, insecure by the second rater, and *unclassified* by the third rater; one (n = 1) drawing was rated insecure by one rater and *unclassified* by two of the raters. Independently all three raters arrived at the same rating for 29% (n = 39) of the drawings, two of the three raters arrived at the same rating for 47% (n = 63), resulting in 77% (n = 102) of the drawings being rated the same by all three raters or two of the three raters at the end of the initial rating process. Of the remaining drawings, 14% (n = 19) were rated differently by two raters and one rater rated the drawings as *unclassified*; 1.5% (n = 2) of the drawings were rated as *unclassified* by two raters and given a rating by one rater; and 6% (n = 8) were classified differently by all three raters.

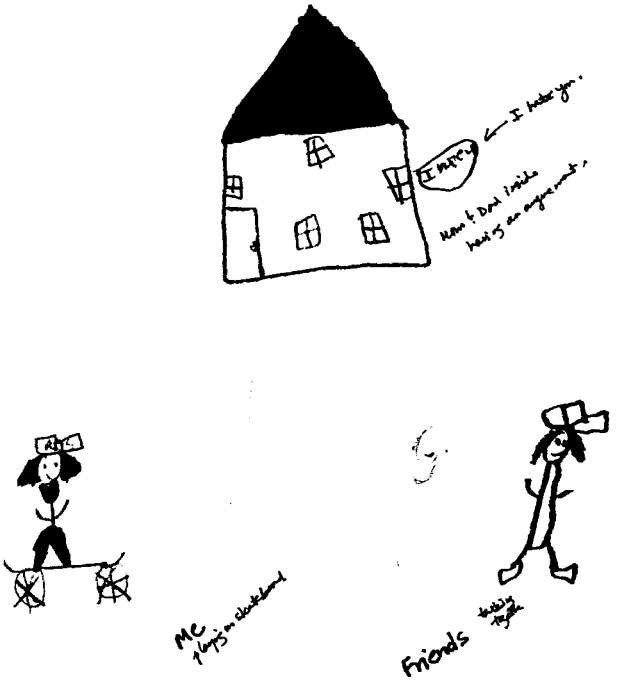

Figure 7. Example of a family drawing rated preoccupied/resistant.

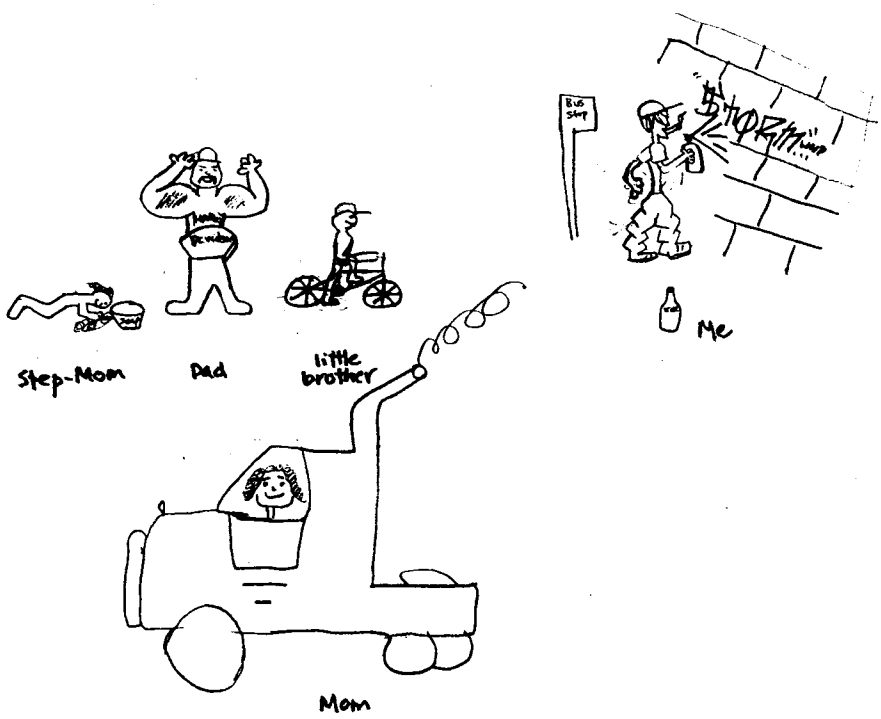

Figure 8. Example of a family drawing rated dismissing/avoidant.

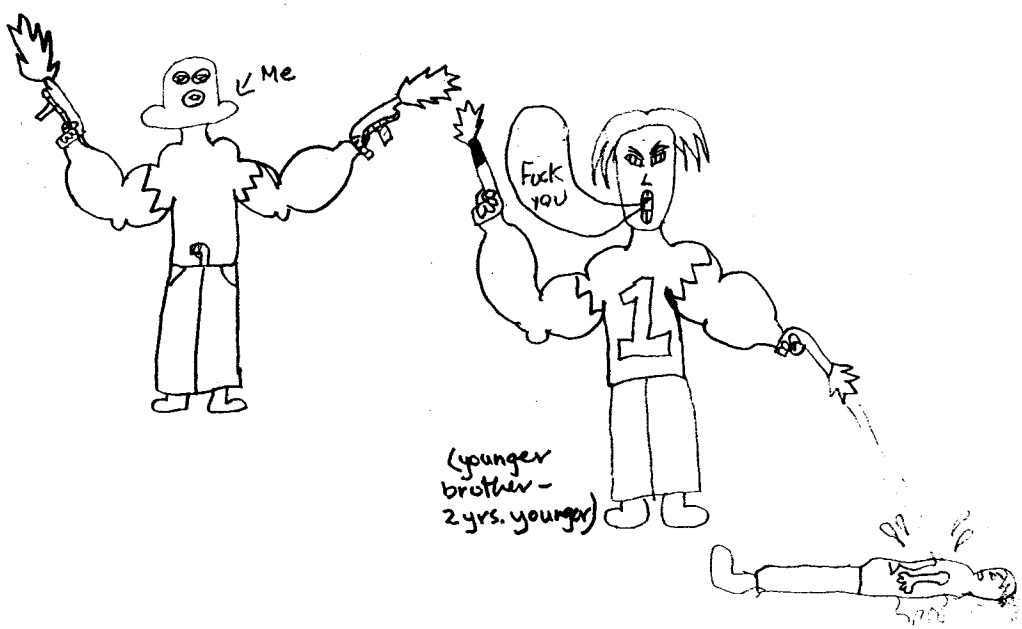

Figure 9. Example of a family drawing rated unresolved/disorganized.

The total percentage of drawings rated the same by all three raters or two of the three raters at the end of the initial rating process would likely have been higher if the raters had been more experienced at using the FDARF. This became evident after the final rating process.

Upon completion of the second, and final, rating process all three raters rated 12% (n = 16) of the drawings as autonomous/secure, and 75% (n = 100) as insecure; two of the three raters rated 13% (n = 17) as insecure, resulting in 88% (n = 117) of the drawings rated as insecure by all three raters or two of the three raters. Of the drawings, 87% (n = 116) were rated the same by all three raters, and 13% (n = 17) of the drawings were rated the same by two of the three raters. Only one drawing (n = 1) rating was changed by all three raters to a classification that none of the three raters had given it in the initial rating process. The final attachment classification for each drawing was determined by the final rating that was arrived at by all three raters or by two of the three raters. Significant inter-rater agreement was obtained for the final attachment classification for each drawing using Cohen's kappa (.84 to .90).

4.2.3 *Validity of classification differentiation.*

After the drawings had been rated, analysis of the psychological diagnosis for the adolescents of whom a family drawing was available (n = 119) found 0% (n = 0) of the adolescents whose drawing had been rated autonomous were diagnosed with Reactive Attachment Disorder by or under the supervision of a Registered Psychologist or Psychiatrist, 8% (n = 4) of the adolescents whose drawing had been

rated preoccupied were diagnosed with Reactive Attachment Disorder, 16% (n = 7) of the adolescents whose drawing had been rated dismissing were diagnosed with Reactive Attachment Disorder, and 18% (n = 2) of the adolescents whose drawing had been rated unresolved were diagnosed with Reactive Attachment Disorder. This supported, in particular the drawings that had been rated autonomous, the attachment classification designations determined by rescoring the adolescents' KFD using the FDARF. Analysis, after the drawings had been rated, was conducted of the adolescent's guardian's (i.e., social worker, parent) subjective rating (n = 127), at the time of intake of the adolescent into the organization, of the adolescent's ability to attach to caregivers. Of the adolescents whose drawing had been rated autonomous, 62.6% were rated "no concern" (n = 5) to "mild concern" (n = 5) in their ability to attach to caregivers by their guardian; 48.1% of the adolescents whose drawing had been rated preoccupied were rated "moderate concern" (n = 11) to "high concern" (n = 14) in their ability to attach to caregivers; 57.5% of the adolescents whose drawing had been rated dismissing were rated "moderate concern" (n = 10) to "high concern" (n = 17) in their ability to attach to caregivers; and 67% of the adolescents whose drawing had been rated unresolved were rated "moderate concern" (n = 3) to "high concern" (n = 5) in their ability to attach to caregivers (see Table 8). Using ANOVA, a statistically significant relationship was found between the adolescent's guardian's subjective rating of the adolescent's ability to attach to caregivers and the total number of potentially traumatizing life events experienced by the adolescent, F (3, 124) = 5.03, p

Table 8

Guardian's Subjective Rating of Adolescent's Ability to Attach to Caregivers in Percentage

Attachment Classifications	No Concern to Mild Concern (n = 61)	Moderate to High Concern (n = 66)
Autonomous	62.6 (31.3, 31.3)	37.5 (12.5, 25.0)
Preoccupied	51.9 (26.9, 25.0)	48.1 (21.2, 26.9)
Dismissing	42.5 (23.4, 19.1)	57.5 (21.3, 36.2)
Unresolved	33.3 (25.0, 8.3)	66.7 (25.0, 41.7)

* Note: percentage of two combined categories (percentage of each category respectively)

< .01, and the total number of mother's risk factors at the time of intake of the adolescent into the organization, F (3, 115) = 3.62, p < .05. Tukey procedure used for post hoc analysis found the at-risk adolescents whose guardian subjectively rated their ability to attach to caregivers as "no concern" had experienced fewer potentially traumatizing life events (M = 5.55) than at-risk adolescents whose guardian subjectively rated their ability to attach to caregivers as being a "mild concern" (M = 7.31) or "high concern" (M = 7.30), ps < .05. Tukey procedure used for post hoc analysis found the at-risk adolescents whose guardian subjectively rated their ability to attach to caregivers as "no concern" had biological mothers who had fewer risk factors at the time of intake of the adolescent into the organization (M = 2.40) than at-risk adolescents whose guardian subjectively rated their ability to attach to caregivers as

being a "mild concern" ($M = 4.07$), $ps < .05$. This provided further support for the attachment classification differentiation determined by rescoring the adolescents' family drawings using the FDARF.

After the drawings had been rated, relationships among identified attachment classifications and possible etiological pathways (e.g., adolescent risk factors) were reviewed to further explore the validity of the attachment classifications determined through the use of the FDARF. Data analysis found only 25% ($n = 4$) of adolescents whose drawing had been rated autonomous had been in more than two foster care or treatment centre placements, whereas 32% ($n = 18$) of adolescents whose drawing had been rated preoccupied had been in more than two foster care or treatment centre placements, 43% ($n = 21$) of adolescents whose drawing had been rated dismissing had been in more than two foster care or treatment centre placements, and 50% ($n = 6$) of adolescents whose drawing had been rated unresolved had been in more than two foster care or treatment centre placements. Based on attachment theory, it is expected that adolescents who are autonomously attached will be generally less anxious than adolescents who are insecurely attached due to their early experience of having a secure base that provided them with a means to regain homeostasis when they felt frightened, tired, or ill. Data analysis, after the drawings had been rated, found 25% ($n = 4$) of the adolescents whose drawing was rated autonomous were identified, subjectively by their guardian at the time of intake into the organization, as experiencing "anxiety"; 32% ($n = 13$) of the adolescents whose drawing was rated preoccupied were identified,

subjectively by their guardian at the time of intake into the organization, as experiencing "anxiety"; 27% (n = 13) of the adolescents whose drawing was rated dismissing were identified, subjectively by their guardian at the time of intake into the organization, as experiencing "anxiety"; and 42% (n = 5) of the adolescents whose drawing was rated unresolved were identified, subjectively by their guardian at the time of intake into the organization, as experiencing "anxiety". Based on attachment theory, it is expected that adolescents who are autonomously attached will be more socioemotionally developed than adolescents who are insecurely attached. Data analysis, after the drawings had been rated, of the adolescents' Total EQ scores found 63% of adolescents whose drawing had been rated autonomous obtained a Total EQ score within the average range or above average ranges, 61% of adolescents whose drawing had been rated preoccupied obtained a Total EQ score within the below average ranges, 52% of adolescents whose drawing had been rated dismissing obtained a Total EQ score within the below average ranges, and 55% of adolescents whose drawing had been rated unresolved obtained a Total EQ score within the below average ranges. This further supported the attachment classification designations determined by rescoring the adolescents' KFD using the FDARF. In addition, the attachment distribution found in this study was similar to attachment classification distributions found in other research studies with similar populations (Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001), which will be discussed in more detail in the Discussion chapter of this document.

These findings along with previous research findings (Fury et al., 1997; Grossmann & Grossmann, 1991; Madigan, et al., 2003; Pianta & Longmaid, 1999), which supported the ability of the criteria used in the FDARF to differentiate among attachment classifications, and the strong inter-rater agreement found in this study provided enough support for the attachment classification designations determined by rescoring the adolescents' family drawings using the FDARF to be viewed as valid and reliable. It is acknowledged that future research, which includes another instrument (i.e., AAI) in addition to the FDARF, is required to provide further support for the FDARF's ability to validly and reliably differentiate among attachment representations.

4.2.4 *Other findings.*

Using likelihood ratio chi-square analysis, a significant association was found between attachment classifications and gender, $\chi 2(3, n = 133) = 8.41, p < .05$. Females (19%, $n = 11$) were almost three times as likely as males (7%, $n = 5$) to create drawings that were rated autonomous. Males (14%, $n = 10$) were almost five times more likely than females (3%, $n = 2$) to create drawings that were rated unresolved (see Table 9). Using likelihood ratio chi-square, a significant association was found between attachment classifications and ethnicity, $\chi 2(9, n = 133) = 21.53, p < .05$. Fifty percent of at-risk adolescents of Inuit ethnicity ($n = 4$) created a drawing that was rated autonomous ($n = 16$), 50% of at-risk adolescents of Caucasian ethnicity ($n = 22$)

Table 9

Percentage of Females and Males in Each Attachment Classification

Attachment Classifications	Females (n = 59)	Males (n = 74)
Autonomous	19 (11)	7 (5)
Preoccupied	39 (23)	45 (33)
Dismissing	39 (23)	35 (26)
Unresolved	3 (2)	14 (10)

* Note: percentage of each gender (frequencies)

and 52% of at-risk adolescents of Metis ethnicity (n = 11) created a drawing that was rated preoccupied; and 43% of at-risk adolescents of First Nation ethnicity (n = 26) created a drawing that was rated dismissing (see Table 10). Only drawings created by adolescents of Caucasian (14%, n = 6) and First Nation (10%, n = 6) ethnicities were rated unresolved. No significant association or significance was found between attachment classifications and birth order, $\chi 2(9, n = 99) = 6.05$, *ns*; Full Scale IQ scores, $F(3, 117) = 4.36$, *ns*; Total EQ scores, $F(3, 125) = < 1$; total number of early potentially traumatizing life events experienced by the adolescent, $F(3, 128) = < 1$; total number of mother's risk factors at the time of intake of the adolescent into the organization, $F(3, 117) = < 1$; total number of father's risk factors at the time of intake of the adolescent into the organization, $F(3, 92) = < 1$; total number of sibling

Table 10

Percentage of At-Risk Adolescents in Each Attachment Classification by Ethnicity

Attachment Classifications	Ethnicity			
	Caucasian (n = 44)	Metis (n = 21)	First Nation (n = 60)	Inuit (n = 8)
Autonomous	2 (1)	19 (4)	12 (7)	50 (4)
Preoccupied	50 (22)	52 (11)	35 (21)	25 (2)
Dismissing	34 (15)	29 (6)	43 (26)	25 (2)
Unresolved	14 (6)	0	10 (6)	0

* Note: percentage of each ethnicity (frequencies)

and extended family's risk factors at the time of intake of the adolescent into the organization, F (3, 70) = 1.03, *ns*; or age, F (3, 129) = < 1. A statistically significant relationship was found between attachment classifications and total number of adolescent risk factors at the time of intake into the organization using one-way ANOVA, F (3, 129) = 3.37, $p < .05$. Tukey procedure used for post hoc analysis found at-risk adolescents whose drawing was rated autonomous had more risk factors (M = 10.13) at the time of intake into the organization than at-risk adolescents whose drawing was rated preoccupied (M = 7.91), $ps < .05$.

4.3 *Early Potentially Traumatizing Life Events*

The total number of early potentially traumatizing life events (see Table 5)

identified in secondary data as having been experienced by the adolescents (n = 134) ranged from 1 to 12 (M = 6.59, SD = 2.37) (see Table 11). Of the adolescents for whom the early potentially traumatizing life events they had experienced were known and whose attachment classification had been determined (n = 133), the adolescents who created a family drawing that was rated autonomous (n = 16) were identified as having experienced 3 to 9 early potentially traumatizing life events, the adolescents who created a family drawing that was rated preoccupied (n = 56) were identified as having experienced 2 to 12 early potentially traumatizing life events, the adolescents who created a family drawing that was rated dismissing (n = 49) were identified as having experienced 1 to 12 early potentially traumatizing life events, and the adolescents who created a family drawing that was rated unresolved (n = 12) were identified as having experienced 2 to 9 early potentially traumatizing life events.

One-way ANOVA found a statistically significant relationship between gender and the total number of potentially traumatizing life events experienced by the adolescent, F (1,131) = 4.35, $p < .05$. On average, female at-risk adolescents experienced a total of 7.07 early potentially traumatizing life events and male at-risk adolescents experienced a total of 6.22 early potentially traumatizing life events. One-way ANOVA found a statistically significant relationship between ethnicity and the total number of potentially traumatizing life events experienced by the adolescent, F (3,129) = 10.31, $p < .001$. Tukey procedure used for post hoc analysis found the at-risk adolescents of First Nation ethnicity experienced more early potentially

Table 11

Total Number of Early Potentially Traumatizing Life Events by Attachment Classifications

Total Number of Potentially Traumatizing Life Events	Attachment Classifications			
	Autonomous (n = 16)	Preoccupied (n = 56)	Dismissing (n = 49)	Unresolved (n = 12)
1			6 (3)	
2		7 (4)	4 (2)	8 (1)
3	13 (2)	4 (2)	4 (2)	
4	6 (1)	9 (5)		8 (1)
5	6 (1)	18 (10)	12 (6)	
6	19 (3)	16 (9)	16 (8)	8 (1)
7	13 (2)	7 (4)	10 (5)	25 (3)
8	25 (4)	20 (11)	24 (12)	25 (3)
9	19 (3)	13 (7)	10 (5)	25 (3)
10		2 (1)	10 (5)	
11				
12		4 (2)	2 (1)	

* Note: percentage of each attachment classification (frequencies)

traumatizing life events ($M = 7.15$) than the at-risk adolescents of Caucasian ($M = 5.37$) or Inuit ($M = 4.88$) ethnicities, $ps < .05$. No statistical significance was found between total number of early potentially traumatizing life events experienced by the adolescent and birth order, age, attachment classification, diagnosis, Total EQ score, or Full Scale IQ score. Bivariate correlation found a statistically significant relationship between total number of early potentially traumatizing life events experienced by the adolescent and total number of adolescent risk factors at the time of intake into the organization ($r = .34, p < .01$, 1-tailed). At-risk adolescents who experienced more early potentially traumatizing life events tended to have more risk factors at the time of intake into the organization. Bivariate correlation found a statistically significant relationship between total number of early potentially traumatizing life events experienced by the adolescent and total number of mother's risk factors at the time of intake of the adolescent into the organization ($r = .41, p < .01$, 1-tailed), father's risk factors at the time of intake of the adolescent into the organization ($r = .36, p < .01$, 1-tailed), and siblings and extended family risk factors at the time of intake of the adolescent into the organization ($r = .20, p < .05$, 1-tailed). At-risk adolescents who experienced more early potentially traumatizing life events tended to have a biological mother, father, siblings and extended family who had more risk factors at the time of intake of the adolescent into the organization.

Of the adolescents whose early potentially traumatizing life events had been identified ($n = 134$), approximately 2% ($n = 3$) had experienced the "death of both

biological parents"; 14% (n = 19) had experienced the "death of one biological parent"; 5% (n = 7) had experienced the "death of one or more step-parent, adoptive, or foster parent"; 13% (n = 17) had experienced the "death of a sibling or close family member (e.g., grandparent, uncle, cousin)"; 40% (n = 53) had experienced "sexual abuse by a parent, caregiver, or family member"; 81% (n = 108) had experienced "neglect or abandonment by a parent, caregiver, or family member"; 84% (n = 112) had experienced "emotional abuse by a parent, caregiver, or family member"; 67% (n = 90) had experienced "physical abuse by a parent, caregiver, or family member"; 18% (n = 24) had experienced "sexual, emotional, or physical abuse by a nonfamily member"; 7% (n = 9) had been exposed to a "life-threatening illness or life-altering accident experienced by the parent, caregiver, or adolescent (e.g., cancer, AIDS, head injury)"; 82% (n = 109) had experienced "immediate family substance abuse"; 37% (n = 50) had a "biological parent who has a psychological disorder"; 55% (n = 73) had experienced "biological parent separation or divorce"; 51% (n = 68) had "witnessed familial sexual, physical, or emotional abuse"; 37% (n = 50) had experienced "more than two foster care or treatment centre placements"; and 61% (n = 82) had experienced "one or more absent parent or caregiver".

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "sexual abused by a parent, caregiver, or family member" and gender, $\chi 2(1, n = 134) = 5.56, p < .05$. Female (51%, n = 30) at-risk adolescents were more likely to have experienced this potentially

traumatizing life event than male (31%, $n = 23$) at-risk adolescents. There was also a significant association found between the potentially traumatizing life event of "sexual, emotional, or physical abuse by a nonfamily member" and gender, $\chi 2(1, n = 134) = 6.08, p < .05$. Again, female (27%, $n = 16$) at-risk adolescents were more likely to have experienced this potentially traumatizing life event than male (11%, $n = 8$) at-risk adolescents.

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "witnessing familial sexual, physical, or emotional abuse" and birth order, $\chi 2(3, n = 100) = 11.38, p < .05$, 43% ($n = 29$) of the oldest of their gender, 92% ($n = 11$) of adolescents whose birth order was within the middle of their gender, 56% ($n = 9$) of the youngest of their gender, and 40% ($n = 2$) of only children experienced this potentially traumatizing life event. A significant association was found between the potentially traumatizing life event of "one or more absent parent or caregiver" and birth order, $\chi 2(3, n = 100) = 10.35, p < .05$, 58% ($n = 39$) of the oldest of their gender, 33% ($n = 4$) of adolescents whose birth order was within the middle of their gender, 88% ($n = 14$) of the youngest of their gender, and 80% ($n = 4$) of only children experienced this potentially traumatizing life event.

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "sexual, emotional, or physical abuse by a nonfamily member" and age, $\chi 2(5, n = 134) = 16.44, p < .01$. The

likelihood of experiencing this potentially traumatizing life event increased with age. None of the 12 year old at-risk adolescents, 12% (n = 3) of the 13 year old at-risk adolescents, 16% (n = 6) of the 14 year old at-risk adolescents, 20% (n = 5) of the 15 year old at-risk adolescents, 21% (n = 4) of the 16 year old at-risk adolescents, and 60% (n = 6) of the 17 year old at-risk adolescents experienced this potentially traumatizing life event. Although a significant association was found between the potentially traumatizing life event of "biological parent who has a psychological disorder" and age, $\chi 2(5, n = 134) = 12.54, p < .05$, there did not seem to be a simple linear relationship. Sixty-five percent (n = 11) of the 12 year old at-risk adolescents, 48% (n = 12) of the 13 year old at-risk adolescents, 24% (n = 9) of the 14 year old at-risk adolescents, 44% (n = 11) of the 15 year old adolescents, 26% (n = 5) of the 16 year old at-risk adolescents, and 20% (n = 2) of the 17 year old at-risk adolescents experienced this potentially traumatizing life event.

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "death of one biological parent" and ethnicity, $\chi 2(3, n = 134) = 11.01, p < .05$, 5% ($n$ = 2) of the Caucasian adolescents, 5% (n = 1) of the Metis adolescents, 25% (n = 15) of the First Nation adolescents, and 13% (n = 1) of the Inuit adolescents experienced this potentially traumatizing life event. A significant association was found between the potentially traumatizing life event of "neglect or abandonment by a parent, caregiver, or family member" and

ethnicity, $\chi 2(3, n = 134) = 29.31, p < .001$, 61% ($n = 27$) of the Caucasian adolescents, 76% ($n = 16$) of the Metis adolescents, 98% (n = 60) of the First Nation adolescents, and 63% ($n = 5$) of the Inuit adolescents experienced this potentially traumatizing life event. A significant association was found between the potentially traumatizing life event of "emotional abuse by a parent, caregiver, or family member" and ethnicity, $\chi 2(3, n = 134) = 20.40, p < .001$, 73% ($n = 32$) of the Caucasian adolescents, 91% ($n = 19$) of the Metis adolescents, 95% ($n = 58$) of the First Nation adolescents, and 38% ($n = 3$) of the Inuit adolescents experienced this potentially traumatizing life event. A significant association was found between the potentially traumatizing life event of "physical abuse by a parent, caregiver, or family member" and ethnicity, $\chi 2(3, n = 134) = 14.40, p < .01$, 55% ($n = 24$) of the Caucasian adolescents, 71% ($n = 15$) of the Metis adolescents, 80% ($n = 49$) of the First Nation adolescents, and 25% ($n = 2$) of the Inuit adolescents experienced this potentially traumatizing life event. A significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and ethnicity, $\chi 2(3, n = 134) = 41.85, p < .001$, 55% ($n = 24$) of the Caucasian adolescents, 81% ($n = 17$) of the Metis adolescents, 100% ($n = 61$) of the First Nation adolescents, and 88% ($n = 7$) of the Inuit adolescents experienced this potentially traumatizing life event. A significant association was found between the potentially traumatizing life event of "witnessing familial sexual, physical, or emotional abuse" and ethnicity, $\chi 2(3, n =$

134) = 13.40, $p < .01$, 39% ($n = 17$) of the Caucasian adolescents, 48% ($n = 10$) of the Metis adolescents, 66% ($n = 40$) of the First Nation adolescents, and 13% ($n = 1$) of the Inuit adolescents experienced this potentially traumatizing life event.

No significant association was found between specific early potentially traumatizing life events experienced by the adolescent and attachment classifications (see Table 12), although, a trend towards an association was found between the potentially traumatizing life event of "experiencing physical abuse by a parent, caregiver, or family member" and attachment classifications, $\chi 2(3, n = 133) = 6.62, p < .09$. Sixty-nine percent ($n = 11$) of adolescents whose family drawing was rated autonomous, 55% ($n = 31$) of adolescents whose family drawing was rated preoccupied, 76% ($n = 37$) of adolescents whose family drawing was rated dismissing, and 83% ($n = 10$) of adolescents whose family drawing was rated unresolved experienced this potentially traumatizing life event.

4.4 *Risk Factors*

4.4.1 *Adolescent risk factors.*

The total number of adolescent risk factors (see Table 6) at the time of intake of the adolescents ($n = 134$) into the organization, as identified in secondary data, ranged from 1 to 14 ($M = 8.59$, $SD = 2.60$) (see Table 13). The adolescents who created a family drawing that was rated autonomous ($n = 16$) were identified as having 7 to 13 adolescent risk factors at the time of intake into the organization. The adolescents who created a family drawing that was rated preoccupied ($n = 56$) were

Table 12

Percentage of At-Risk Adolescents in Each Attachment Classification By Potentially Traumatizing Life Events

Potentially Traumatizing Life Events	Attachment Classifications			
	Autonomous (n = 16)	Preoccupied (n = 56)	Dismissing (n = 49)	Unresolved (n = 12)
death of both biological parents	0 (0)	4 (2)	2 (1)	0 (0)
death of one biological parent	6 (1)	13 (7)	18 (9)	17 (2)
death of one or more step-parent, adoptive, or foster parent	19 (3)	2 (1)	4 (2)	8 (1)
death of a sibling or close family member (e.g., grandparent, uncle, cousin)	6 (1)	13 (7)	12 (6)	25 (3)
sexual abuse by a parent, caregiver, or family member	44 (7)	32 (18)	43 (21)	58 (7)
neglect or abandonment by a parent, caregiver, or family member	94 (15)	80 (45)	76 (37)	83 (10)
emotional abuse by a parent, caregiver, or family member	88 (14)	82 (46)	84 (41)	83 (10)
physical abuse by a parent, caregiver, or family member	69 (11)	55 (31)	76 (37)	83 (10)
sexual, emotional, or physical abuse by a nonfamily member	19 (3)	20 (11)	16 (8)	17 (2)
life-threatening illness or life-altering accident experienced by parent, caregiver or adolescent (e.g., cancer, AIDS, head injury)	0 (0)	5 (3)	12 (6)	0 (0)
immediate family substance abuse	88 (14)	75 (42)	84 (41)	92 (11)
biological parent who has a psychological disorder	38 (6)	38 (21)	39 (19)	33 (4)
biological parent separation or	50 (8)	57 (32)	55 (27)	42 (5)

divorce				
witnessing familial sexual, physical, or emotional abuse	50 (8)	52 (29)	53 (26)	33 (4)
more than two foster care or treatment centre placements	25 (4)	32 (18)	43 (21)	50 (6)
one or more absent parent or caregiver	69 (11)	63 (35)	55 (27)	75 (9)

Note: percentage of each attachment classification (frequencies)

Table 13

Total Number of Adolescent Risk Factors at the Time of Intake Into the Organization by Attachment Classifications

Total Number Adolescent Risk Factors at Intake	Attachment Classifications			
	Autonomous (n = 16)	Preoccupied (n = 56)	Dismissing (n = 49)	Unresolved (n = 12)
1		2 (1)		
2		2 (1)	2 (1)	
3		2 (1)	4 (2)	
4		2 (1)		
5		9 (5)	6 (3)	
6		13 (7)	10 (5)	8 (1)
7	6 (1)	11 (6)	10 (5)	8 (1)
8	19 (3)	20 (11)	16 (8)	33 (4)
9	6 (1)	16 (9)	8 (4)	8 (1)
10	31 (5)	11 (6)	8 (4)	17 (2)
11	19 (3)	5 (3)	18 (9)	
12		5 (3)	12 (6)	25 (3)
13	19 (3)	4 (2)	2 (1)	
14			2 (1)	

* Note: percentage of each attachment classification (frequencies)

identified as having 1 to 13 adolescent risk factors at the time of intake into the organization. The adolescents who created a family drawing that was rated dismissing ($n = 49$) were identified as having 2 to 14 adolescent risk factors at the time of intake into the organization. The adolescents who created a family drawing that was rated unresolved ($n = 12$) were identified as having 6 to 12 early adolescent risk factors at the time of intake into the organization

One-way ANOVA found a statistically significant relationship between gender and total number of adolescent risk factors at the time of intake into the organization, $F(1, 132) = 13.29, p < .001$. On average, female at-risk adolescents ($n = 59$) were identified with a total of 9.5 risk factors at the time of intake into the organization, and male at-risk adolescents ($n = 75$) were identified with a total of 7.9 adolescent risk factors at the time of intake into the organization. One-way ANOVA found a statistically significant relationship between ethnicity and the total number of adolescent risk factors at the time of intake into the organization, $F(3, 130) = 3.83, p < .05$. Tukey procedure used for post hoc analysis found the total number of adolescent risk factors at the time of intake into the organization for at-risk adolescents of Inuit ethnicity to be higher ($M = 10.75$) than the total number of adolescent risk factors at the time of intake into the organization for at-risk adolescents of Caucasian ethnicity ($M = 7.75$), $ps < .05$. No statistically significant relationship was found between total number of adolescent risk factors at the time of intake into the organization and birth order, $F(3, 96) = < 1$. Bivariate correlation found a statistically

significant relationship between total number of adolescent risk factors at the time of intake into the organization and age ($r = .29, p < .01$, 1-tailed). The older the at-risk adolescent the more risk factors at the time of intake into the organization she or he tended to have. No statistical significance was found between total number of adolescent risk factors at the time of intake into the organization and total number of mother's risk factors at the time of intake of the adolescent into the organization or total number of father's risk factors at the time of intake of the adolescent into the organization. A statistically significant relationship was found between total number of adolescent risk factors at the time of intake into the organization and the total number of sibling and extended family risk factors at the time of intake of the adolescent into the organization ($r = .37, p < .01$, 1-tailed). At-risk adolescents who had more risk factors at the time of intake into the organization tended to have siblings and extended family who had more risk factors at the time of intake of the adolescent into the organization.

Using likelihood ratio chi-square analysis, a significant association was found between the adolescent risk factor "substance use or abuse" and gender, $\chi 2(1, n = 134) = 29.96, p < .001$. Female (83%, $n = 49$) at-risk adolescents were more likely to have been identified with this risk factor at the time of intake into the organization, than male (37%, $n = 28$) at-risk adolescents. A significant association was found between the adolescent risk factor "ADHD" and gender, $\chi 2(1, n = 134) = 8.17, p < .01$. Male

(75%, $n = 56$) at-risk adolescents were more likely to have been identified with this risk factor at the time of intake into the organization, than female (51%, $n = 30$) at-risk adolescents. A significant association was found between the adolescent risk factor of having "other psychological disorders" than depression, anxiety, or an eating disorder, and gender, $\chi 2(1, n = 134) = 5.88, p < .05$. Female (31%, $n = 18$) at-risk adolescents were more likely to have been identified with this risk factor at the time of intake into the organization, than male (13%, $n = 10$) at-risk adolescents. A significant association was found between the adolescent risk factor "sexual risk taking behaviour" and gender, $\chi 2(1, n = 134) = 18.67, p < .001$. Female (68%, $n = 4$) at-risk adolescents were more likely to have been identified with this risk factor at the time of intake into the organization, than male (31%, $n = 23$) at-risk adolescents. A significant association was found between the adolescent risk factor "truancy" and gender, $\chi 2(1, n = 134) = 12.42, p < .001$. Female (80%, $n = 47$) at-risk adolescents were more likely to have been identified with this risk factor at the time of intake into the organization, than male (51%, $n = 38$) at-risk adolescents. A significant association was found between the adolescent risk factor "going Absent Without Leave (AWOL)" and gender, $\chi 2(1, n = 134) = 26.89, p < .001$. Female (90%, $n = 53$) at-risk adolescents were more likely to have been identified with this risk factor at the time of intake into the organization, than male (49%, $n = 37$) at-risk adolescents.

Using likelihood ratio chi-square analysis, a significant association was found

between the adolescent risk factor "suicide ideation or attempts" and ethnicity, $\chi 2(3, n = 134) = 14.71, p < .01$, 36% ($n = 16$) of at-risk adolescents of Caucasian ethnicity, 57% ($n = 12$) of at-risk adolescents of Metis ethnicity, 72% ($n = 44$) of at-risk adolescents of First Nation ethnicity, and 38% ($n = 3$) of at-risk adolescents of Inuit ethnicity were identified with this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor "substance use or abuse" and ethnicity, $\chi 2(3, n = 134) = 22.43, p < .001$, 32% ($n = 14$) of at-risk adolescents of Caucasian ethnicity, 52% ($n = 11$) of at-risk adolescents of Metis ethnicity, 74% ($n = 45$) of at-risk adolescents of First Nation ethnicity, and 88% ($n = 7$) of at-risk adolescents of Inuit ethnicity were identified with this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor "ADHD" and ethnicity, $\chi 2(3, n = 134) = 8.60, p < .05$, 80% ($n = 35$) of at-risk adolescents of Caucasian ethnicity, 67% ($n = 14$) of at-risk adolescents of Metis ethnicity, 53% ($n = 32$) of at-risk adolescents of First Nation ethnicity, and 63% ($n = 5$) of at-risk adolescents of Inuit ethnicity were identified with this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor "Mental Retardation" and ethnicity, $\chi 2(3, n = 134) = 14.16, p < .01$, 16% ($n = 7$) of at-risk adolescents of Caucasian ethnicity, 10% ($n = 2$) of at-risk adolescents of Metis ethnicity, 15% ($n = 9$) of at-risk adolescents of First Nation ethnicity, and 75% ($n = 6$) of at-risk adolescents of Inuit

ethnicity were identified with this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor "FASD" and ethnicity, $\chi 2(3, n = 134) = 9.74, p < .05$, 25% ($n = 11$) of at-risk adolescents of Caucasian ethnicity, 62% ($n = 13$) of at-risk adolescents of Metis ethnicity, 48% ($n = 29$) of at-risk adolescents of First Nation ethnicity, and 38% ($n = 3$) of at-risk adolescents of Inuit ethnicity were identified with this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor "truancy" and ethnicity, $\chi 2(3, n = 134) = 9.40, p < .05$, 46% ($n = 20$) of at-risk adolescents of Caucasian ethnicity, 67% ($n = 14$) of at-risk adolescents of Metis ethnicity, 74% ($n = 45$) of at-risk adolescents of First Nation ethnicity, and 75% ($n = 6$) of at-risk adolescents of Inuit ethnicity were identified with this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor "going AWOL" and ethnicity, $\chi 2(3, n = 134) = 23.94, p < .001$, 41% ($n = 18$) of at-risk adolescents of Caucasian ethnicity, 81% ($n = 17$) of at-risk adolescents of Metis ethnicity, 77% ($n = 47$) of at-risk adolescents of First Nation ethnicity, and 100% ($n = 8$) of at-risk adolescents of Inuit ethnicity were identified with this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor being in a "blended family" and ethnicity, $\chi 2(3, n = 134) = 8.85, p < .05$, 57% ($n = 25$) of at-risk adolescents of Caucasian ethnicity, 67% ($n = 14$) of at-risk adolescents of Metis ethnicity, 43% ($n =$

26) of at-risk adolescents of First Nation ethnicity, and 88% (n = 7) of at-risk adolescents of Inuit ethnicity were identified with this risk factor at the time of intake into the organization.

Using likelihood ratio chi-square analysis, a significant association was found between the adolescent risk factor "substance use or abuse" and attachment classifications, $\chi 2(3, n = 133) = 13.80, p < .01$, 88% ($n$ = 14) of at-risk adolescents whose family drawing was rated autonomous, 45% (n = 25) of at-risk adolescents whose family drawing was rated preoccupied, 67% (n = 33) of at-risk adolescents whose family drawing was rated dismissing, and 42% (n = 5) of at-risk adolescents whose family drawing was rated unresolved were identified as having this risk factor at the time of intake into the organization. A significant association was found between the adolescent risk factor "going AWOL" and attachment classifications, $\chi 2(3, n = 133) = 18.08, p < .001$, 100% ($n$ = 16) of at-risk adolescents whose family drawing was rated autonomous, 59% (n = 33) of at-risk adolescents whose family drawing was rated preoccupied, 71% (n = 35) of at-risk adolescents whose family drawing was rated dismissing, and 42% (n = 5) of at-risk adolescents whose family drawing was rated unresolved were identified as having this risk factor at the time of intake into the organization. Table 14 identifies specific adolescent risk factors identified at the time of intake into the organization based on attachment classifications.

Using likelihood ratio chi-square analysis, a significant association was found

Table 14

Percentage of At-Risk Adolescents in Each Attachment Classification By Risk Factors Identified at Time of Intake Into the Organization

	Attachment Classifications			
Adolescent Risk Factors	Autonomous (n = 16)	Preoccupied (n = 56)	Dismissing (n = 49)	Unresolved (n = 12)
suicide ideation or attempts	56 (9)	54 (30)	59 (29)	58 (7)
substance use or abuse	88 (14)	45 (25)	67 (33)	42 (5)
physical and/or verbal aggression	100 (16)	98 (55)	98 (48)	92 (11)
attention deficit and/or hyperactivity	63 (10)	70 (39)	55 (27)	75 (9)
depression	81 (13)	73 (41)	65 (32)	75 (9)
anxiety	25 (4)	32 (18)	27 (13)	42 (5)
mental retardation	25 (4)	18 (10)	14 (7)	17 (2)
Fetal Alcohol Spectrum Disorder (suspected or diagnosed)	31 (5)	41 (23)	43 (21)	50 (6)
learning disorder	88 (14)	61 (34)	59 (29)	75 (9)
physical concerns (e.g., seizures, head injury, diabetes, enuresis)	50 (8)	43 (24)	43 (21)	83 (10)
eating disorder	13 (2)	2 (1)	10 (5)	17 (2)
other psychological diagnosis	13 (2)	16 (9)	29 (14)	25 (3)
delinquency or criminal behaviour (e.g., theft, prostitution, sexual assault)	69 (11)	43 (24)	51 (25)	67 (8)
sexual risk taking behaviour	63 (10)	36 (20)	55 (27)	50 (6)

truancy	81 (13)	54 (30)	69 (34)	58 (7)
going AWOL	100 (16)	59 (33)	71 (35)	42 (5)
blended family	75 (12)	46 (26)	55 (27)	50 (6)

Note: percentage of each attachment classification (frequencies)

between the potentially traumatizing life event of "death of one biological parent" and the adolescent risk factor "suicide ideation or attempts", $\chi 2(1, n = 134) = 5.09, p < .05$, 79% ($n = 15$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 19$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 75$). A significant association was found between the potentially traumatizing life event of "sexual abuse by parent or family member" and the adolescent risk factor "suicide ideation or attempts", $\chi 2(1, n = 134) = 14.01, p < .001$, 76% ($n = 40$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 53$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 75$). A significant association was found between the potentially traumatizing life event of "physical abuse by a parent or family member" and the adolescent risk factor "suicide ideation or attempts", $\chi 2(1, n = 134) = 22.33, p < .001$, 70% ($n = 63$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 90$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 75$). A significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and the adolescent risk factor "suicide ideation or attempts", $\chi 2(1, n = 134) = 4.96, p < .05$, 61% ($n = 66$) of adolescents who were identified as having experienced this potentially

traumatizing life event (n = 109) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 75). A significant association was found between the potentially traumatizing life event of "biological parent who has a psychological disorder" and the adolescent risk factor "suicide ideation or attempts", $\chi 2(1, n = 134) = 8.53, p < .01$, 72% ($n$ = 36) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 50) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 75). A significant association was found between the potentially traumatizing life event of "witnessing familial sexual, physical, emotional abuse" and the adolescent risk factor "suicide ideation or attempts", $\chi 2(1, n = 134) = 4.30, p < .05$, 65% ($n$ = 44) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 68) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 75). A significant association was found between the potentially traumatizing life event of "more than two foster care or treatment centre placements" and the adolescent risk factor "suicide ideation or attempts", $\chi 2(1, n = 134) = 4.76, p < .05$, 68% ($n$ = 34) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 50) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 75).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "sexual, emotional, physical abuse by nonfamily member" and the adolescent risk factor "substance use or abuse", $\chi 2(1, n = 134) = 8.79, p < .01$, 83% ($n = 20$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 24$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 77$). A significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and the adolescent risk factor "substance use or abuse", $\chi 2(1, n = 134) = 5.75, p < .05$, 62% ($n = 68$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 109$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 77$). A significant association was found between the potentially traumatizing life event of "witnessing familial sexual, physical, emotional abuse" and the adolescent risk factor "substance use or abuse", $\chi 2(1, n = 134) = 4.31, p < .05$, 66% ($n = 45$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 68$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 77$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "death of both biological parents"

and the adolescent risk factor "physical and/or verbal aggression", $\chi 2(1, n = 134) = 4.21, p < .05$, 67% ($n = 2$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 3$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 131$). A significant association was found between the potentially traumatizing life event of "witnessing familial sexual, physical, emotional abuse" and the adolescent risk factor "physical and/or verbal aggression", $\chi 2(1, n = 134) = 4.32, p < .05$, 100% ($n = 68$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 68$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 131$). A significant association was found between the potentially traumatizing life event of "more than two foster care or treatment centre placements" and the adolescent risk factor "physical and/or verbal aggression", $\chi 2(1, n = 134) = 6.03, p < .05$, 94% ($n = 47$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 50$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 131$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "neglect or abandonment by parent or family member" and the adolescent risk factor "Fetal Alcohol Spectrum Disorder", $\chi 2(1, n = 134) = 13.86, p < .001$, 49% ($n = 53$) of adolescents who were identified as

having experienced this potentially traumatizing life event (n = 108) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 56). A significant association was found between the potentially traumatizing life event of "emotional abuse by parent or family member" and the adolescent risk factor "Fetal Alcohol Spectrum Disorder", $\chi 2(1, n = 134) = 6.58, p < .05$, 46% ($n$ = 52) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 112) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 56). A significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and the adolescent risk factor "Fetal Alcohol Spectrum Disorder", $\chi 2(1, n = 134) = 22.64, p < .001$, 51% ($n$ = 55) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 109) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 56). A significant association was found between the potentially traumatizing life event of "biological parent separation or divorce" and the adolescent risk factor "Fetal Alcohol Spectrum Disorder", $\chi 2(1, n = 134) = 5.26, p < .05$, 33% ($n$ = 24) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 73) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 56). A significant association was found between the

potentially traumatizing life event of "witnessing familial sexual, physical, emotional abuse" and the adolescent risk factor "Fetal Alcohol Spectrum Disorder", $\chi 2(1, n = 134) = 5.36, p < .05$, 52% ($n = 35$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 68$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 56$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "death of one or more step-parent, adoptive, or foster parent" and the adolescent risk factor "learning disorder", $\chi 2(1, n = 134) = 6.25, p < .05$, 100% ($n = 7$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 7$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 87$). A significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and the adolescent risk factor "learning disorder", $\chi 2(1, n = 134) = 5.67, p < .05$, 70% ($n = 76$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 109$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 87$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "death of a sibling or close family

member" and the adolescent risk factor "physical concerns", $\chi 2(1, n = 134) = 4.15, p < .05$, 71% ($n = 12$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 17$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 64$). A significant association was found between the potentially traumatizing life event of exposure to "life-threatening illness or life-altering accident experienced by parent, caregiver, or adolescent" and the adolescent risk factor "physical concerns", $\chi 2(1, n = 134) = 7.28, p < .01$, 89% ($n = 8$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 9$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 64$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "sexual abuse by parent or family member" and the adolescent risk factor "eating disorder", $\chi 2(1, n = 134) = 4.10, p < .05$, 13% ($n = 7$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 53$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 10$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "sexual, emotional, physical abuse

by nonfamily member" and the adolescent risk factor of having "other psychological disorders", $\chi 2(1, n = 134) = 4.37, p < .05$, 38% ($n = 9$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 24$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 28$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "death of one or more step-parent, adoptive, or foster parent" and the adolescent risk factor of "delinquency or criminal behaviour", $\chi 2(1, n = 134) = 4.01, p < .05$, 86% ($n = 6$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 7$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 68$). A significant association was found between the potentially traumatizing life event of "sexual, emotional, physical abuse by nonfamily member" and the adolescent risk factor of "delinquency or criminal behaviour", $\chi 2(1, n = 134) = 7.16, p < .01$, 75% ($n = 18$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 24$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 68$). A significant association was found between the potentially traumatizing life event of "biological parent who has a psychological disorder" and the adolescent risk factor of "delinquency or criminal behaviour", $\chi 2(1,$

$n = 134) = 5.22, p < .05$, 39% ($n = 19$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 50$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 68$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "sexual abuse by parent or family member" and the adolescent risk factor of "sexual risk taking behaviour", $\chi 2(1, n = 134) = 18.69, p < .001$, 70% ($n = 37$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 53$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 63$). A significant association was found between the potentially traumatizing life event of "emotional abuse by parent, caregiver, or family member" and the adolescent risk factor of "sexual risk taking behaviour", $\chi 2(1, n = 134) = 4.27, p < .05$, 51% ($n = 57$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 112$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 63$). A significant association was found between the potentially traumatizing life event of "physical abuse by parent, caregiver, or family member" and the adolescent risk factor of "sexual risk taking behaviour", $\chi 2(1, n = 134) = 6.19, p < .05$, 54% ($n = 49$) of adolescents who were identified as having

experienced this potentially traumatizing life event (n = 90) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 63). A significant association was found between the potentially traumatizing life event of "sexual, emotional, or physical abuse by nonfamily member" and the adolescent risk factor of "sexual risk taking behaviour", $\chi 2(1, n = 134) = 12.66, p < .001$, 79% ($n$ = 19) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 24) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 63). A significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and the adolescent risk factor of "sexual risk taking behaviour", $\chi 2(1, n = 134) = 4.61, p <$ .05, 51% (n = 56) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 109) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 63). A significant association was found between the potentially traumatizing life event of "witnessing familial sexual, physical, emotional abuse" and the adolescent risk factor of "sexual risk taking behaviour", $\chi 2(1, n = 134) = 4.38, p < .05$, 56% ($n$ = 38) of adolescents who were identified as having experienced this potentially traumatizing life event (n = 68) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization (n = 63).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "sexual, emotional, physical abuse by nonfamily member" and the adolescent risk factor of "truancy", $\chi 2(1, n = 134) = 5.51, p < .05$, 83% ($n = 20$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 24$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 85$).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "neglect or abandonment by parent, caregiver, or family member" and the adolescent risk factor of "going AWOL", $\chi 2(1, n = 134) = 4.12, p < .05$, 71% ($n = 77$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 108$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 90$). A significant association was found between the potentially traumatizing life event of "emotional abuse by parent, caregiver, or family member" and the adolescent risk factor of "going AWOL", $\chi 2(1, n = 134) = 5.32, p < .05$, 71% ($n = 80$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 112$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 90$). A significant association was found between the potentially traumatizing life

event of "life-threatening illness or life-altering accident experienced by parent, caregiver, or adolescent" and the adolescent risk factor of "going AWOL", $\chi 2(1, n = 134) = 4.39, p < .05$, 44% ($n = 4$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 9$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 90$). A significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and the adolescent risk factor of "going AWOL", $\chi 2(1, n = 134) = 20.23, p < .001$, 76% ($n = 83$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 109$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 90$). A significant association was found between the potentially traumatizing life event of having "more than two foster care or treatment centre placements" and the adolescent risk factor of "going AWOL", $\chi 2(1, n = 134) = 6.22, p < .05$, 80% ($n = 40$) of adolescents who were identified as having experienced this potentially traumatizing life event ($n = 50$) were among the adolescents who were identified as having this risk factor at the time of their intake into the organization ($n = 90$) (see Table 15).

4.4.2 *Familial risk factors.*

Familial risk factors, at the time of intake of the adolescent into the organization, were identified for the adolescent's biological (a) mother, (b) father, and

Table 15

Adolescent Risk Factors at Time of Intake Into the Organization and Early Potentially Traumatizing Life Events With Significant Association

Adolescent Risk Factors	Early Potentially Traumatizing Life Events	Significant Association
suicide ideation or attempts	death of one biological parent	$\chi2(1, n = 134) = 5.09, p < .05$
	sexual abuse by parent, caregiver or family member	$\chi2(1, n = 134) = 14.01, p < .001$
	physical abuse by a parent, caregiver or family member	$\chi2(1, n = 134) = 22.33, p < .001$
	immediate family substance abuse	$\chi2(1, n = 134) = 4.96, p < .05$
	biological parent who has a psychological disorder	$\chi2(1, n = 134) = 8.53, p < .01$
	witnessing familial sexual, physical, or emotional abuse	$\chi2(1, n = 134) = 4.30, p < .05$
	more than two foster care or treatment centre placements	$\chi2(1, n = 134) = 4.76, p < .05$
substance use or abuse	sexual, emotional, physical abuse by nonfamily member	$\chi2(1, n = 134) = 8.79, p < .01$
	immediate family substance abuse	$\chi2(1, n = 134) = 5.75, p < .05$
	witnessing familial sexual, physical, or emotional abuse	$\chi2(1, n = 134) = 4.31, p < .05$
physical and/or verbal aggression	death of both biological parents	$\chi2(1, n = 134) = 4.21, p < .05$
	witnessing familial sexual, physical, or emotional abuse	$\chi2(1, n = 134) = 4.32, p < .05$
	more than two foster care or treatment centre placements	$\chi2(1, n = 134) = 6.03, p < .05$
Fetal Alcohol Spectrum Disorder (suspected or diagnosed)	neglect or abandonment by parent or family member	$\chi2(1, n = 134) = 13.86, p < .001$
	emotional abuse by parent, caregiver, or family member	$\chi2(1, n = 134) = 6.58, p < .05$
	immediate family substance abuse	$\chi2(1, n = 134) = 22.64, p < .001$
	biological parent separation or divorce	$\chi2(1, n = 134) = 5.26, p < .05$
	witnessing familial sexual, physical, or emotional abuse	$\chi2(1, n = 134) = 5.36, p < .05$
learning disorder	death of one or more step-parent,	$\chi2(1, n = 134) = 6.25, p < .05$

	adoptive, or foster parent	
	immediate family substance abuse	$\chi 2(1, n = 134) = 5.67, p < .05$
physical concerns (e.g., seizures, head injury, diabetes, enuresis)	death of sibling or close family member	$\chi 2(1, n = 134) = 4.15, p < .05$
	life-threatening illness or life-altering accident experienced by parent, caregiver, or adolescent	$\chi 2(1, n = 134) = 7.28, p < .01$
eating disorder	sexual abuse by parent or family member	$\chi 2(1, n = 134) = 4.10, p < .05$
other psychological diagnosis	sexual, emotional, or physical abuse by nonfamily member	$\chi 2(1, n = 134) = 4.37, p < .05$
delinquency or criminal behaviour (e.g., theft, prostitution, sexual assault)	death of one or more step-parent, adoptive, or foster parent	$\chi 2(1, n = 134) = 4.01, p < .05$
	sexual, emotional, or physical abuse by nonfamily member	$\chi 2(1, n = 134) = 7.16, p < .01$
	biological parent who has a psychological disorder	$\chi 2(1, n = 134) = 5.22, p < .05$
sexual risk taking behaviour	sexual abuse by parent or family member	$\chi 2(1, n = 134) = 18.69, p < .001$
	emotional abuse by parent, caregiver, or family member	$\chi 2(1, n = 134) = 4.27, p < .05$
	physical abuse by parent, caregiver, or family member	$\chi 2(1, n = 134) = 6.19, p < .05$
	sexual, emotional, or physical abuse by nonfamily member	$\chi 2(1, n = 134) = 12.66, p < .001$
	immediate family substance abuse	$\chi 2(1, n = 134) = 4.61, p < .05$
	witnessing familial sexual, physical, or emotional abuse	$\chi 2(1, n = 134) = 4.38, p < .05$
truancy	sexual, emotional, or physical abuse by nonfamily member	$\chi 2(1, n = 134) = 5.51, p < .05$
going AWOL	neglect or abandonment by parent, caregiver, or family member	$\chi 2(1, n = 134) = 4.12, p < .05$
	emotional abuse by parent, caregiver, or family member	$\chi 2(1, n = 134) = 5.32, p < .05$
	life-threatening illness or life-altering accident experienced by parent, caregiver, or adolescent	$\chi 2(1, n = 134) = 4.39, p < .05$
	immediate family substance abuse	$\chi 2(1, n = 134) = 20.23, p < .001$
	more than two foster care or treatment centre placements	$\chi 2(1, n = 134) = 6.22, p < .05$

(c) siblings and extended family (see Table 16). Of the biological mothers whose risk factors at the time of intake of the adolescent into the organization were known (n = 122), 21% (n = 26) were identified as having experienced suicide ideation, attempts, or committed suicide; 84% (n = 102) were identified as having experienced substance abuse; 37% (n = 45) were identified as being physically and/or verbally aggressive; 4% (n = 5) were identified as experiencing attention deficit and/or hyperactivity; 39% (n = 47) were identified as having experienced depression; 7% (n = 8) were identified as having experienced anxiety; 3% (n = 4) were identified as having a diagnosis of Mental Retardation; 8% (n = 10) were identified as diagnosed with or suspected of Fetal Alcohol Spectrum Disorder; 7% (n = 9) were identified as having a learning disorder; 17% (n = 21) were identified as having physical concerns; 2% (n = 3) were identified as having an eating disorder; 10% (n = 12) were identified as having other psychological disorders than ADHD, depression, or an eating disorder; 22% (n = 27) were identified as demonstrating delinquency or criminal behaviours; 44% (n = 54) were identified as having a history of physical abuse; and 20% (n = 24) were identified as having a history of sexual abuse. Risk factors at the time of intake of the adolescent into the organization for 10% (n = 12) of the biological mothers were unknown.

Of the biological fathers whose risk factors at the time of intake of the adolescent into the organization were known (n = 97), 11% (n = 11) were identified as having experienced suicide ideation, attempts, or committed suicide; 74% (n = 72) were identified as having experienced substance abuse; 62% (n = 60) were identified as

Table 16

Percentage of Mothers, Fathers, and Siblings and Extended Families With Risk Factors at Time of Intake of the Adolescent Into the Organization

	Biological Family		
Familial Risk Factors	Mother (n = 122)	Father (n = 97)	Siblings & Extended Family (n = 75)
suicide ideation, attempts, or committed suicide	21 (26)	11 (11)	15 (11)
substance use or abuse	84 (102)	74 (72)	53 (40)
physical and/or verbal aggression	37 (45)	62 (60)	27 (20)
attention deficit and/or hyperactivity	4 (5)	4 (4)	11 (8)
depression	39 (47)	11 (11)	13 (10)
anxiety	7 (8)	0 (0)	0 (0)
mental retardation	3 (4)	0 (0)	1 (1)
Fetal Alcohol Spectrum Disorder (suspected or diagnosed)	8 (10)	2 (2)	11 (8)
learning disorder	7 (9)	9 (9)	4 (3)
physical concerns (e.g., seizures, head injury, AIDS, diabetes, poor eyesight)	17 (21)	11 (11)	28 (21)
eating disorder	2 (3)	0 (0)	0 (0)
other psychological diagnosis	10 (12)	1 (1)	8 (6)
delinquency or criminal behaviour (e.g., theft, prostitution, sexual assault)	22 (27)	34 (33)	25 (19)
history of physical abuse	44 (54)	11 (11)	12 (9)
history of sexual abuse	20 (24)	1 (1)	15 (11)
no information	10 (12)	38 (37)	79 (59)

Note: percentage of each family member or grouping (frequencies)

being physically and/or verbally aggressive; 4% (n = 4) were identified as experiencing attention deficit and/or hyperactivity; 11% (n = 11) were identified as having experienced depression; 0% (n = 0) were identified as having experienced anxiety; 0% (n = 0) were identified as having a diagnosis of Mental Retardation; 2% (n = 2) were identified as diagnosed with or suspected of Fetal Alcohol Spectrum Disorder; 9% (n = 9) were identified as having a learning disorder; 11% (n = 11) were identified as having physical concerns; 0% (n = 0) were identified as having an eating disorder; 1% (n = 1) were identified as having other psychological disorders than ADHD, depression, or an eating disorder; 34% (n = 33) were identified as demonstrating delinquency or criminal behaviours; 11% (n = 11) were identified as having a history of physical abuse; and 1% (n = 1) was identified as having a history of sexual abuse. Risk factors at the time of intake of the adolescent into the organization for 38% (n = 37) of the biological fathers were unknown.

Of the biological siblings and extended family (e.g., grandparents, uncle, cousin) whose risk factors at the time of intake of the adolescent into the organization were known (n = 75), 15% (n = 11) were identified as having experienced suicide ideation, attempts, or committed suicide; 53% (n = 40) were identified as having experienced substance abuse; 27% (n = 20) were identified as being physically and/or verbally aggressive; 11% (n = 8) were identified as experiencing attention deficit and/or hyperactivity; 13% (n = 10) were identified as having experienced depression; 0% (n = 0) were identified as having experienced anxiety; 1% (n = 1) were identified as having a

diagnosis of Mental Retardation; 11% (n = 8) were identified as diagnosed with or suspected of Fetal Alcohol Spectrum Disorder; 4% (n = 3) were identified as having a learning disorder; 28% (n = 21) were identified as having physical concerns; 0% (n = 0) were identified as having an eating disorder; 8% (n = 6) were identified as having other psychological disorders than ADHD, depression, or an eating disorder; 25% (n = 19) were identified as demonstrating delinquency or criminal behaviours; 12% (n = 9) were identified as having a history of physical abuse; and 15% (n = 11) were identified as having a history of sexual abuse. Risk factors at the time of intake of the adolescent into the organization for 79% (n = 59) of the sibling and extended family were unknown.

Using a series of one-way ANOVAs, no statistical significance was found between total number of mother's risk factors at the time of intake of the adolescent into the organization, total number of father's risk factors risk factors at the time of intake of the adolescent into the organization, or total number of sibling or extended family's risk factors at the time of intake of the adolescent into the organization, and the adolescent's gender, birth order, attachment classification, or diagnostic grouping. No statistical significance was found between ethnicity and the total number of mother's risk factors at the time of intake of the adolescent into the organization, F (3, 118) = 2.41, *ns;* or the total number of sibling and extended family risk factors at the time of intake of the adolescent into the organization, F (3, 70) = < 1. A statistically significant relationship was found between ethnicity and the total number of father's

risk factors at the time of intake of the adolescent into the organization, $F(3, 93) = 4.38$, $p < .01$. Tukey procedure used for post hoc analysis found the total number of father's risk factors at the time of intake of the adolescent into the organization were higher for the at-risk adolescents of First Nation ethnicity ($M = 2.87$) than the at-risk adolescents of Metis ethnicity ($M = 1.75$), $ps < .05$. Bivariate correlation found no statistical significance between total number of mother's risk factors at the time of intake of the adolescent into the organization or total number of father's risk factors at-risk factors at the time of intake of the adolescent into the organization, and total number of adolescent risk factors at the time of intake into the organization. A statistically significant relationship was found between the total number of sibling and extended family risk factors at the time of intake of the adolescent into the organization and the total number of adolescent risk factors at the time of intake into the organization ($r = .36$, $p < .01$, 1-tailed). At-risk adolescents who had more risk factors at the time of intake into the organization tended to have siblings and extended family who had more risk factors at the time of intake of the adolescent into the organization. A statistically significant relationship was found between total number of mother's risk factors at the time of intake of the adolescent into the organization and total number of father's risk factors at the time of intake of the adolescent into the organization ($r = .50$, $p < .01$, 1-tailed). Mothers who had more risk factors at the time of intake of the adolescent into the organization tended to have male partners, who were identified as the adolescent's biological father, who had more risk factors at the

time of intake of the adolescent into the organization. No statistical significance was found between total number of mother's risk factors at the time of intake of the adolescent into the organization and total number of the adolescent's sibling and extended family risk factors at the time of intake of the adolescent into the organization. A statistically significant relationship was found between total number of father's risk factors at the time of intake of the adolescent into the organization and total number of the adolescent's sibling and extended family risk factors at the time of intake of the adolescent into the organization ($r = .24, p < .05$, 1-tailed). Fathers who had more risk factors at the time of intake into the organization tended to have other children and extended family who had more risk factors at the time of intake of the adolescent into the organization. A statistically significant relationship was found between the adolescent's age and total number of mother's risk factors at the time of intake of the adolescent into the organization ($r = -.21, p < .05$, 1-tailed) and total number of father's risk factors at the time of intake of the adolescent into the organization ($r = -.19, p < .05$, 1-tailed). Younger at-risk adolescents tended to have a biological mother and father who had more risk factors at the time of intake of the adolescent into the organization than older at-risk adolescents. No statistical significance was found between total number of sibling and extended family risk factors at the time of intake of the adolescent into the organization and the adolescent's age.

4.5 *Psychopathology*

Of the at-risk adolescents for whom a psychological diagnosis (see Table 3), determined by or under the supervision of a Registered Psychologist or Psychiatrist, was available (n = 120) approximately 12% (n = 15) were diagnosed with an externalizing disorder/s; 36% (n = 43) were diagnosed with an externalizing disorder/s and an additional diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group (e.g., FASD); 3% (n = 3) were diagnosed with an externalizing disorder/s, a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group, and a personality disorder; 1% (n = 1) was diagnosed with an externalizing disorder/s and substance abuse; 2% (n = 2) were diagnosed with an externalizing disorder/s, a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group, and substance abuse; 9% (n = 11) were diagnosed with an externalizing disorder/s and an internalizing disorder/s; 13% (n = 16) were diagnosed with an externalizing disorder/s, an internalizing disorder/s, and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 2% (n = 2) were diagnosed with an externalizing disorder/s, an internalizing disorder/s, and a personality disorder; 2% (n = 2) were diagnosed with an externalizing disorder/s, an internalizing disorder/s, a personality disorder, and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 3% (n = 3) were diagnosed with an

externalizing disorder/s, an internalizing disorder/s, and substance abuse; 4% (n = 5) were diagnosed with an externalizing disorder/s, an internalizing disorder/s, substance abuse, and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 2% (n = 2) were diagnosed with an externalizing disorder/s, an internalizing disorder/s, substance abuse, a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group, and a personality disorder; 3% (n = 3) were diagnosed with an internalizing disorder/s; 1% (n = 1) was diagnosed with an internalizing disorder/s, and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 1% (n = 1) was diagnosed with an internalizing disorder/s and substance abuse; 1% (n = 1) was diagnosed with a personality disorder; 2% (n = 2) received a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 2% (n = 2) were diagnosed with substance abuse; 2% (n = 2) received a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group and substance abuse; and 3% (n = 4) received no diagnosis. For data analysis purposes, the 19 diagnostic groups were reduced to 9 diagnostic groupings (see Table 4).

Using likelihood ratio chi-square analysis, a significant association was found between diagnostic groupings and gender, $\chi 2(8, n = 120) = 35.56$, $p < .001$ (see Table 17). Of the adolescents for whom a diagnosis was available (n = 120), male (61%, n =

Table 17

Percentage of Females and Males in Each Diagnostic Grouping

Diagnostic Groupings	Females (n = 49)	Males (n = 71)
No Diagnosis	2 (1)	3 (2)
Externalizing Disorder/s	2 (1)	20 (14)
Internalizing Disorder/s or Internalizing Disorder/s & < 85 IQ &/or FASD	6 (3)	1 (1)
< 85 IQ &/or FASD	2 (1)	1 (1)
Externalizing Disorder/s & Internalizing Disorder/s	6 (3)	11 (8)
Externalizing Disorder/s & < 85 IQ &/or FASD	29 (14)	41 (29)
Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD	10 (5)	15 (11)
Substance Abuse Substance Abuse & Externalizing Disorder/s Substance Abuse & Internalizing Disorder/s Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s Substance Abuse & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD	27 (13)	7 (5)
Personality Disorder Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s Personality Disorder & Externalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD & Substance Abuse	16 (8)	

* Note: percentage of each gender (frequencies)

43) at-risk adolescents were more likely to be diagnosed with an externalizing disorder/s, or an externalizing disorder/s and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group than female (31%, $n = 15$) at-risk adolescents. Female (27%, $n = 13$) adolescents were more likely to receive a diagnosis that included substance abuse than male (7%, $n = 5$) at-risk adolescents. All of the at-risk adolescents who received a diagnosis which included personality disorder ($n = 8$) were female. A significant association was found between the diagnosis Attention Deficit Hyperactivity Disorder (ADHD) and gender, $\chi 2(1, n = 120) = 7.88, p < .01$. Male (70%, $n = 50$) at-risk adolescents were more likely to receive this diagnosis than female (45%, $n = 22$) at-risk adolescents. A significant association was found between the diagnosis Major Depressive Disorder and gender, $\chi 2(1, n = 120) = 5.75, p < .05$. Female (31%, $n = 15$) at-risk adolescents were more likely to receive this diagnosis than male (13%, $n = 9$) at-risk adolescents. A significant association was found between the diagnosis Borderline Personality Disorder and gender, $\chi 2(1, n = 120) = 7.37, p < .01$. All of the at-risk adolescents who received this diagnosis ($n = 4$) were female. A significant association was found between the diagnosis Substance Related Disorder and gender, $\chi 2(1, n = 120) = 7.03, p < .01$. Female (27%, $n = 13$) at-risk adolescents were more likely to receive this diagnosis than male (9%, $n = 6$) at-risk adolescents.

Using likelihood ratio chi-square analysis, a significant association was found

between diagnostic groupings and birth order, $\chi 2(24, n = 90) = 38.74, p < .05$ (see Table 18). Of the at-risk adolescents of whom a diagnosis was available and their birth order was identified ($n = 90$), a diagnosis of an externalizing disorder/s, or an externalizing disorder/s and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group was given to 48% ($n = 29$) of the oldest of their gender, 22% ($n = 2$) of adolescents whose birth order was within the middle of their gender, 44% ($n = 7$) of the youngest of their gender, and 80% ($n = 4$) of only children. Fifteen percent ($n = 9$) of adolescents who were the oldest of their gender, 33% ($n = 3$) of adolescents who within the middle of their gender, 6% ($n = 1$) of adolescents who were the youngest of their gender, and 0% ($n = 0$) of adolescents who were only children received a diagnosis that included substance abuse. Seven percent ($n = 4$) of adolescents who were the oldest of their gender, 0% ($n = 0$) of adolescents who were within the middle of their gender, 19% ($n = 3$) of adolescents who were the youngest of their gender, and 0% ($n = 0$) of adolescents who were only children received a diagnosis that included personality disorder. A significant association was found between the diagnosis ADHD and birth order, $\chi 2(31, n = 90) = 7.87, p < .05$, 58% ($n = 35$) of the oldest of their gender, 22% ($n = 2$) of adolescents whose birth order was within the middle of their gender, 75% ($n = 12$) of the youngest of their gender, and 80% ($n = 4$) of only children received this diagnosis.

Table 18

Percentage of At-Risk Adolescents in Each Birth Order by Diagnostic Grouping

Diagnostic Groupings	Birth Order			
	Oldest ($n = 60$)	Middle ($n = 9$)	Youngest ($n = 16$)	Only Child ($n = 5$)
No Diagnosis		22 (2)		
Externalizing Disorder/s	15 (9)	11 (1)		40 (2)
Internalizing Disorder/s or Internalizing Disorder/s & < 85 IQ &/or FASD	3 (2)	11 (1)	6 (1)	
< 85 IQ &/or FASD		11 (1)		
Externalizing Disorder/s & Internalizing Disorder/s	8 (5)		13 (2)	20 (1)
Externalizing Disorder/s & < 85 IQ &/or FASD	33 (20)	11 (1)	44 (7)	40 (2)
Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD	18 (11)		13 (2)	
Substance Abuse Substance Abuse & Externalizing Disorder/s Substance Abuse & Internalizing Disorder/s Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s Substance Abuse & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD	15 (9)	33 (3)	6 (1)	
Personality Disorder Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s Personality Disorder & Externalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ	7 (4)		19 (3)	

&/or FASD & Substance Abuse

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* Note: percentage of each birth order (frequencies)

Using likelihood ratio chi-square analysis, a significant association was found between diagnostic groupings and ethnicity, $\chi 2(24, n = 120) = 44.21, p < .01$ (see Table 19). Of the at-risk adolescents of whom a diagnosis was available ($n = 120$), 59% ($n = 26$) of adolescents of Caucasian ethnicity, 50% ($n = 9$) of adolescents of Metis ethnicity, 40% ($n = 20$) of adolescents of First Nation ethnicity, and 38% ($n = 3$) of adolescents of Inuit ethnicity were diagnosed with an externalizing disorder/s, or an externalizing disorder/s and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group. Seven percent ($n = 3$) of adolescents of Caucasian ethnicity, 11% ($n = 2$) of adolescents of Metis ethnicity, 22% ($n = 11$) of adolescents of First Nation ethnicity, and 25% ($n = 2$) of adolescents of Inuit ethnicity received a diagnosis that included substance abuse. Two percent ($n = 1$) of adolescents of Caucasian ethnicity, 17% ($n = 3$) of adolescents of Metis ethnicity, 6% ($n = 3$) of adolescents of First Nation ethnicity, and 13% ($n = 1$) of adolescents of Inuit ethnicity received a diagnosis that included personality disorder. A significant association was found between the diagnosis ADHD and ethnicity, $\chi 2(3, n = 120) = 11.76, p < .01$, 77% ($n = 34$) of adolescents of Caucasian ethnicity, 67% ($n = 12$) of adolescents of Metis ethnicity, 44% ($n = 22$) of adolescents of First Nation ethnicity, and 50% ($n = 4$) of adolescents of Inuit ethnicity received this diagnosis. A significant association was found between the diagnosis Oppositional Defiant Disorder (ODD) and ethnicity, $\chi 2(3, n = 120) = 12.56, p < .01$, 39% ($n = 17$)

Table 19

Percentage of At-Risk Adolescents in Each Ethnicity by Diagnostic Grouping

Diagnostic Groupings	Ethnicity			
	Caucasian (n = 44)	Metis (n = 18)	First Nation (n = 50)	Inuit (n = 8)
No Diagnosis			6 (3)	
Externalizing Disorder/s	27 (12)	6 (1)	4 (2)	
Internalizing Disorder/s or Internalizing Disorder/s & < 85 IQ &/or FASD	2 (1)	6 (1)	2 (1)	13 (1)
< 85 IQ &/or FASD			2 (1)	13 (1)
Externalizing Disorder/s & Internalizing Disorder/s	11 (5)	17 (3)	6 (3)	
Externalizing Disorder/s & < 85 IQ &/or FASD	32 (14)	44 (8)	36 (18)	38 (3)
Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD	18 (8)		16 (8)	
Substance Abuse Substance Abuse & Externalizing Disorder/s Substance Abuse & Internalizing Disorder/s Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s Substance Abuse & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD	7 (3)	11 (2)	22 (11)	25 (2)
Personality Disorder Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s Personality Disorder & Externalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ	2 (1)	17 (3)	6 (3)	13 (1)

&/or FASD & Substance Abuse

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* Note: percentage of each ethnicity (frequencies)

of adolescents of Caucasian ethnicity, 33% (n = 6) of adolescents of Metis ethnicity, 10% (n = 5) of adolescents of First Nation ethnicity, and 13% (n = 1) of adolescents of Inuit ethnicity received this diagnosis. A significant association was found between the diagnosis Dysthymic Disorder and ethnicity, $\chi 2(3, n = 120) = 12.59, p < .01$, 14% ($n$ = 6) of adolescents of Caucasian ethnicity, 0% (n = 0) of adolescents of Metis ethnicity, 0% (n = 0) of adolescents of First Nation ethnicity, and 0% (n = 0) of adolescents of Inuit ethnicity received this diagnosis. A significant association was found between the diagnosis Mental Retardation and ethnicity, $\chi 2(3, n = 120) = 11.56, p < .01$, 16% ($n$ = 7) of adolescents of Caucasian ethnicity, 11% (n = 2) of adolescents of Metis ethnicity, 18% (n = 9) of adolescents of First Nation ethnicity, and 75% (n = 6) of adolescents of Inuit ethnicity received this diagnosis.

Using likelihood ratio chi-square analysis, a significant association was found between diagnostic groupings and attachment classifications, $\chi 2(24, n = 119) = 37.84$, $p < .05$ (see Table 20). Of the at-risk adolescents of whom a diagnosis was available and an attachment classification had been obtained (n = 119), 44% (n = 7) of adolescents whose drawing was rated autonomous, 55% (n = 27) of adolescents whose drawing was rated preoccupied, 42% (n = 18) of adolescents whose drawing was rated dismissing, and 55% (n = 6) of adolescents whose drawing was rated unresolved were diagnosed with an externalizing disorder/s, or an externalizing disorder/s and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static

Table 20

Percentage of At-Risk Adolescents in Each Attachment Classification by Diagnostic Grouping

	Attachment Classifications			
Diagnostic Groupings	Autonomous (n = 16)	Preoccupied (n = 49)	Dismissing (n = 43)	Unresolved (n = 11)
No Diagnosis	6 (1)		5 (2)	
Externalizing Disorder/s		16 (8)	16 (7)	
Internalizing Disorder/s or Internalizing Disorder/s & < 85 IQ &/or FASD	6 (1)	2 (1)	5 (2)	
< 85 IQ &/or FASD		2 (1)		
Externalizing Disorder/s & Internalizing Disorder/s		14 (7)	9 (4)	
Externalizing Disorder/s & < 85 IQ &/or FASD	44 (7)	39 (19)	26 (11)	55 (6)
Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD		12 (6)	14 (6)	36 (4)
Substance Abuse Substance Abuse & Externalizing Disorder/s Substance Abuse & Internalizing Disorder/s Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s Substance Abuse & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & < 85 IQ &/or FASD Substance Abuse & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD	31 (5)	10 (5)	16 (7)	9 (1)
Personality Disorder Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s Personality Disorder & Externalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s & Internalizing Disorder/s & < 85 IQ &/or FASD Personality Disorder & Externalizing Disorder/s	13 (2)	4 (2)	9 (4)	

& Internalizing Disorder/s & < 85 IQ
&/or FASD & Substance Abuse

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* Note: percentage of each attachment classification (frequencies)

encephalopathy group. Thirty-one percent (n = 5) of adolescents who created a drawing that was rated autonomous, 10% (n = 5) of adolescents who created a drawing that was rated preoccupied, 16% (n = 7) of adolescents who created a drawing that was rated dismissing, and 9% (n = 1) of adolescents who created a drawing that was rated unresolved received a diagnosis that included substance abuse. Thirteen percent (n = 2) of adolescents who created a drawing that was rated autonomous, 4% (n = 2) of adolescents who created a drawing that was rated preoccupied, 9% (n = 4) of adolescents who created a drawing that was rated dismissing, and 0% (n = 0) of adolescents who created a drawing that was rated unresolved received a diagnosis that included personality disorder.

A series of one-way ANOVAs found no statistically significant relationship between diagnostic groupings and Total EQ scores, F (8, 108) = 1.40, *ns;* total number of early potentially traumatizing life events experienced by the adolescent, F (8, 110) = 1.08, *ns;* total number of mother's risk factors at the time of intake of adolescent into the organization, F (8, 100) = 1.09, *ns;* total number of father's risk factors at the time of intake of adolescent into the organization, F (8, 77) = < 1; or age, F (8, 111) = 1.61, *ns*. One-way ANOVA found a statistically significant relationship between diagnostic groupings and total number of adolescent risk factors at the time of intake into the organization, F (8, 111) = 3.95, $p < .001$. Tukey procedure used for post hoc analysis found at-risk adolescents with a diagnosis of substance abuse had more risk factors at the time of intake into the organization (M = 10.00) than at-risk adolescents

who received a diagnosis of externalizing disorder/s ($M = 6.80$), or externalizing disorder/s and internalizing disorder/s ($M = 6.45$), $ps < .05$.

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "neglect or abandonment by a parent, caregiver, or family member" and the diagnosis of ADHD, $\chi 2(1, n = 120) = 4.92, p < .05$, 55% ($n = 53$) of the adolescents, of whom a diagnosis was obtained ($n = 120$), who were identified as having experienced this early potentially traumatizing life event ($n = 96$) were among adolescents who had been diagnosed with ADHD ($n = 72$). A significant association was found between the early potentially traumatizing life event of "witnessing familial sexual, physical, or emotional abuse" and the diagnosis of ADHD, $\chi 2(1, n = 120) = 4.08, p < .05$, 51% ($n = 30$) of the adolescents, of whom a diagnosis was obtained ($n = 120$), who were identified as having experienced this early potentially traumatizing life event ($n = 59$) were among adolescents who had been diagnosed with ADHD ($n = 72$).

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "death of one or more step-parent, adoptive or foster parent" and the diagnosis of Major Depressive Disorder, $\chi 2(1, n = 120) = 5.04, p < .05$, 57% ($n = 4$) of the adolescents, of whom a diagnosis was obtained ($n = 120$), who were identified as having experienced this early potentially traumatizing life event ($n = 7$) were among adolescents diagnosed with

Major Depressive Disorder (n = 24). A significant association was found between the early potentially traumatizing life event of "sexual, emotional, physical abuse by a nonfamily member" and the diagnosis of Major Depressive Disorder, $\chi 2(1, n = 120) = 4.03, p < .05$, 36% ($n$ = 8) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 22) were among adolescents diagnosed with Major Depressive Disorder (n = 24).

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "death of one or more step-parent, adoptive or foster parent" and the diagnosis of Generalized Anxiety Disorder, $\chi 2(1, n = 120) = 4.68, p < .05$, 29% ($n$ = 2) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 7) were among the adolescents diagnosed with Generalized Anxiety Disorder (n = 6). A significant association was found between the early potentially traumatizing life event of "sexual abuse by a parent, caregiver, or family member" and the diagnosis of Generalized Anxiety Disorder, $\chi 2(1, n = 120) = 5.63, p < .05$, 9% ($n$ = 5) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 45) were among adolescents diagnosed with Generalized Anxiety Disorder (n = 6).

Using likelihood ratio chi-square analysis, a significant association was found between the potentially traumatizing life event of "immediate family substance abuse" and the diagnosis of Dysthymic Disorder, $\chi 2(1, n = 120) = 6.57, p < .05$, 2% ($n = 2$) of the adolescents, of whom a diagnosis was obtained ($n = 120$), who were identified as having experienced this early potentially traumatizing life event ($n = 96$) were among the adolescents diagnosed with a Dysthymic Disorder ($n = 6$).

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "witnessing familial sexual, physical, or emotional abuse" and the diagnosis of Post Traumatic Stress Disorder (PTSD), $\chi 2(1, n = 120) = 4.36, p < .05$, 10% ($n = 6$) of the adolescents, of whom a diagnosis was obtained ($n = 120$), who were identified as having experienced this early potentially traumatizing life event ($n = 59$) were among the adolescents diagnosed with PTSD ($n = 7$).

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "sexual, emotional, physical abuse by a nonfamily member" and the diagnosis of Adjustment Disorder, $\chi 2(1, n = 120) = 9.55, p < .01$, 18% ($n = 4$) of the adolescents, of whom a diagnosis was obtained ($n = 120$), who were identified as having experienced this early potentially traumatizing life event ($n = 22$) were among the adolescents diagnosed with Adjustment Disorder ($n = 5$).

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "neglect or abandonment by parent, caregiver, or family member" and the diagnosis of Fetal Alcohol Spectrum Disorder (FASD), $\chi 2(1, n = 120) = 7.21, p < .01$, 16% ($n$ =15) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 96) were among the adolescents diagnosed with FASD (n = 15). A significant association was found between the early potentially traumatizing life event of "immediate family substance abuse" and the diagnosis of FASD, $\chi 2(1, n = 120) = 7.21, p < .01$, 16% ($n$ =15) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 96) were among the adolescents diagnosed with FASD (n = 15). A significant association was found between the early potentially traumatizing life event of "witnessing familial sexual, physical, or emotional abuse" and the diagnosis of Fetal Alcohol Effect (FAE), $\chi 2(1, n = 120) = 4.34, p < .05$, 5% ($n$ = 3) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 59) were among the adolescents diagnosed with FAE (n = 3).

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "death of one biological parent" and the diagnosis of Dissociative Disorder, $\chi 2(1, n = 120) = 3.96, p < .05$, 6%

(n = 1) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 17) were among the adolescents diagnosed with Dissociative Disorder (n = 1)

Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "sexual, emotional, physical abuse by a nonfamily member" and the diagnosis of Substance Related Disorder, $\chi 2(1, n = 120) = 4.47, p < .05$, 32% ($n$ = 7) of the adolescents, of whom a diagnosis was obtained (n = 120), who were identified as having experienced this early potentially traumatizing life event (n = 22) were among the adolescents diagnosed with a Substance Related Disorder (n = 19) (see Table 21).

Using likelihood ratio chi-square analysis, no significant association was found between specific diagnosis and attachment classifications. Analysis of data for at-risk adolescents of whom a diagnosis and family drawing were available (n = 119), found 50% (n = 8) of at-risk adolescents whose family drawing was rated autonomous, 67% (n = 33) of at-risk adolescents whose family drawing was rated preoccupied, 54% (n = 23) of at-risk adolescents whose family drawing was rated dismissing, and 73% (n = 8) of at-risk adolescents whose family drawing was rated unresolved received a diagnosis of ADHD. Thirteen percent (n =2) of at-risk adolescents whose family drawing was rated autonomous, 31% (n = 15) of at-risk adolescents whose family drawing was rated preoccupied, 26% (n = 11) of at-risk adolescents whose family drawing was rated dismissing, and 9% (n = 1) of at-risk adolescents whose family drawing was

Table 21

Adolescents' Diagnosis and Early Potentially Traumatizing Life Events With Significant Association

Psychological Diagnosis	Early Potentially Traumatizing Life Events	Significant Association
Attention Deficit Hyperactivity Disorder	neglect or abandonment by a parent, caregiver, or family member	$\chi 2(1, n = 120) = 4.92, p < .05$
	witnessing familial sexual, physical, or emotional abuse	$\chi 2(1, n = 120) = 4.08, p < .05$
Major Depressive Disorder	death of one or more step-parent, adoptive or foster parent	$\chi 2(1, n = 120) = 5.04, p < .05$
	sexual, emotional, physical abuse by a nonfamily member	$\chi 2(1, n = 120) = 4.03, p < .05$
Generalized Anxiety Disorder	death of one or more step-parent, adoptive or foster parent	$\chi 2(1, n = 120) = 4.68, p < .05$
	sexual abuse by a parent, caregiver, or family member	$\chi 2(1, n = 120) = 5.63, p < .05$
Dysthymic Disorder	immediate family substance abuse	$\chi 2(1, n = 120) = 6.57, p < .05$
Post Traumatic Stress Disorder	witnessing familial sexual, physical, or emotional abuse	$\chi 2(1, n = 120) = 4.36, p < .05$
Adjustment Disorder	sexual, emotional, physical abuse by a nonfamily member	$\chi 2(1, n = 120) = 9.55, p < .01$
Fetal Alcohol Spectrum Disorder	neglect or abandonment by parent, caregiver, or family member	$\chi 2(1, n = 120) = 7.21, p < .01$
	immediate family substance abuse	$\chi 2(1, n = 120) = 7.21, p < .01$
Fetal Alcohol Effect	witnessing familial sexual, physical, or emotional abuse	$\chi 2(1, n = 120) = 4.34, p < .05$
Dissociative Disorder	death of one biological parent	$\chi 2(1, n = 120) = 3.96, p < .05$
Substance Related Disorder	sexual, emotional, physical abuse by a nonfamily member	$\chi 2(1, n = 120) = 4.47, p < .05$

rated unresolved received a diagnosis of ODD. Forty-four percent (n = 7) of at-risk adolescents whose family drawing was rated autonomous, 43% (n = 21) of at-risk adolescents whose family drawing was rated preoccupied, 56% (n = 24) of at-risk adolescents whose family drawing was rated dismissing, and 64% (n = 7) of at-risk adolescents whose family drawing was rated unresolved received a diagnosis of Conduct Disorder (CD). Twenty-five percent (n = 4) of at-risk adolescents whose family drawing was rated autonomous, 18% (n = 9) of at-risk adolescents whose family drawing was rated preoccupied, 21% (n = 9) of at-risk adolescents whose family drawing was rated dismissing, and 8% (n =2) of at-risk adolescents whose family drawing was rated unresolved received a diagnosis of Major Depressive Disorder. Thirty-eight percent (n = 6) of at-risk adolescents whose family drawing was rated autonomous, 10% (n = 5) of at-risk adolescents whose family drawing was rated preoccupied, 16% (n = 7) of at-risk adolescents whose family drawing was rated dismissing, and 9% (n = 1) of at-risk adolescents whose family drawing was rated unresolved received a diagnosis of Substance Related Disorder.

4.6 *Affect Regulation Ability*

Of the at-risk adolescents for whom a Total EQ score was available (n = 130), 55% (n = 71) obtained a Total EQ score within the below average ranges (low average = 23%, very low = 16%, markedly low = 16%), 31% (n = 40) obtained a Total EQ score within the average range, and 15% (n = 19) obtained a Total EQ score within the above average ranges (high average = 8%, very high = 5%, markedly high = 2%). Based

on data for adolescents for whom a Total EQ score was available and an attachment classification had been determined (n = 129), of the adolescents who created a drawing that was rated autonomous (n = 16), 38% (n = 6) obtained a Total EQ score within the below average ranges (low average = 6%, very low = 19%, markedly low = 13%), 44% (n = 7) obtained a Total EQ score within the average range, and 19% (n = 3) obtained a Total EQ score within the high average ranges (high = 13%, very high = 6%, markedly high = 0%). Of the adolescents who created a drawing that was rated preoccupied (n = 56), 61% (n = 34) obtained a Total EQ score within the below average ranges (low average = 27%, very low = 18%, markedly low = 16%), 32% (n = 18) obtained a Total EQ score within the average range, and 7% (n = 4) obtained a Total EQ score within the high average ranges (high = 3%, very high = 2%, markedly high = 2%). Of the adolescents who created a drawing that was rated dismissing (n = 46), 52% (n = 24) obtained a Total EQ score within the below average ranges (low average = 24%, very low = 11%, markedly low = 17%), 26% (n = 12) obtained a Total EQ score in the average range, and 22% (n = 10) obtained a Total EQ score within the high average ranges (high = 9%, very high = 9%, markedly high = 4%). Of the adolescents who created a drawing that was rated unresolved (n = 11), 55% (n = 6) obtained a Total EQ score within the below average ranges (low average = 18.2%, very low =18.2%, markedly low = 18.2%), 27% (n = 3) obtained a Total EQ score in the average range, and 18% (n = 2) obtained a Total EQ score within the high average ranges (high = 18% very high = 0%, markedly high = 0%) (see Table 22). Using bivariate correlation

Table 22

Percentage of At-Risk Adolescents in Each Attachment Classification by Total Emotional Quotient Score Ranges

	Attachment Classifications			
Total Emotional Quotient Score Ranges	Autonomous (n = 16)	Preoccupied (n = 56)	Dismissing (n = 46)	Unresolved (n = 11)
Above Average Ranges	19 (3)	7 (4)	22 (10)	18 (2)
Average	44 (7)	32 (18)	26 (12)	27 (3)
Below Average Ranges	38 (6)	61 (34)	52 (24)	55 (6)

* Note: percentage of each attachment classification (frequencies)

analysis, based on data for the adolescents for whom a Total EQ score and Full Scale IQ score were available (n = 119), a statistically significant relationship (r = .16, p < .05, 1-tailed) was found between Full Scale IQ scores and Total EQ scores (see Table 23). At-risk adolescents with higher Full Scale IQ scores tended to have higher Total EQ scores. No statistical significance was found between Total EQ scores and gender, F (1, 128) = < 1; birth order, F (3, 92) = < 1; ethnicity, F (3, 126) = < 1; attachment classifications, F (3, 125) = < 1; total number of early potentially traumatizing life events experienced by the adolescent, total number of adolescent risk factors at the time of intake into the organization, total number of familial risk factors at the time of intake of the adolescent into the organization, or diagnosis, F (8, 108) = 1.40, *ns*. A

Table 23

Percentage of At-Risk Adolescents in Total Emotional Quotient Score Ranges by Full Scale Intelligence Quotient Score Range

	Total Emotional Quotient Score Ranges		
Full Scale Intelligence Quotient Score Range	Below Average Ranges ($n = 64$)	Average ($n = 37$)	Above Average Ranges ($n = 18$)
Superior	3 (2)		
High Average		8 (3)	11 (2)
Average	22 (14)	14 (5)	39 (7)
Low Average	25 (16)	16 (6)	17 (3)
Borderline	33 (21)	32 (12)	22 (4)
Extremely Low	17 (11)	30 (11)	11 (2)

* Note: percentage of total emotional quotient score ranges (frequencies)

statistically significant relationship ($r = .18$, $p = < .05$, 1-tailed) was found between Total EQ scores and age. Older at-risk adolescents tended to have higher Total EQ scores.

4.7 *Cognitive Ability*

Of the at-risk adolescents for whom a Full Scale IQ score was available ($n = 122$), 72% ($n = 88$) obtained a Full Scale IQ score within the below average ranges (low average = 21%, borderline = 30%, extremely low = 21%), 22% ($n = 27$) obtained a Full Scale IQ score within the average range, and 6% ($n = 7$) obtained a Full Scale IQ score

within the above average ranges (high average = 4%, superior = 2%). No statistical significance was found between Full Scale IQ scores and gender, birth order, age, ethnicity, attachment classifications, total number of early potentially traumatizing life events experienced by the adolescent, or total number of familial risk factors at the time of intake of the adolescent into the organization. Using bivariate correlation, a statistically significant relationship was found between Full Scale IQ scores and total number of adolescent risk factors at time of intake into the organization (r = -.27, p < .01, 1-tailed). At-risk adolescents with higher Full Scale IQ scores tended to have fewer risk factors at the time of intake into the organization (see Table 24).

One-way ANOVA found a statistically significant relationship between diagnostic groupings and Full Scale IQ scores, F (8, 107) = 10.71, p < .001. Tukey procedure used for post hoc analysis found at-risk adolescents with a diagnosis of an externalizing disorder/s had a higher Full Scale IQ score (M = 98.36) than at-risk adolescents with a diagnosis of externalizing disorder/s and a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encaphalopathy group (M = 68.53); a diagnosis of externalizing disorder/s, internalizing disorder/s, and a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encaphalopathy group (M = 73.06); a diagnosis reflecting a Full Scale IQ of < 85 only (M = 55.50); and a diagnosis which included substance abuse (M = 82.81), ps < .05.

Table 24

Percentage of At-Risk Adolescents in Each Full Scale Intelligence Quotient Score Range by Adolescent Risk Factors at Time of Intake Into the Organization

	Full Scale IQ Score Range					
Adolescent Risk Factors	Superior (n = 2)	High Average (n = 5)	Average (n = 27)	Low Average (n = 26)	Borderline (n = 37)	Extremely Low (n = 25)
suicide ideation or attempts		80 (4)	63 (17)	58 (15)	62 (23)	32 (8)
substance use or abuse	50 (1)	40 (2)	52 (14)	42 (11)	68 (25)	48 (12)
physical and/or verbal aggression	100 (2)	100 (5)	96 (26)	100 (26)	97 (36)	96 (24)
attention deficit and/or hyperactivity		80 (4)	48 (13)	65 (17)	76 (28)	80 (20)
depression	50 (1)	60 (3)	81 (22)	65 (17)	68 (25)	72 (18)
anxiety		20 (1)	19 (5)	31 (8)	38 (14)	36 (9)
mental retardation						96 (24)
Fetal Alcohol Spectrum Disorder (suspected or diagnosed)		20 (1)	30 (8)	42 (11)	46 (17)	64 (16)
learning disorder		20 (1)	41 (11)	62 (16)	86 (32)	92 (23)
physical concerns (e.g., seizures, head injury, diabetes, enuresis)		80 (4)	41 (11)	35 (9)	51 (19)	56 (14)
eating disorder			4 (1)	8 (2)	5 (2)	12 (3)
other psychological diagnosis			30 (8)	27 (7)	19 (7)	16 (4)
delinquency or criminal behaviour (e.g., theft, prostitution, sexual assault)	50 (1)	60 (3)	48 (13)	42 (11)	51 (19)	48 (12)
sexual risk taking behaviour		100 (5)	52 (14)	50 (13)	43 (16)	28 (7)

truancy	50 (1)	60 (3)	59 (16)	42 (11)	78 (29)	52 (13)
going AWOL		20 (1)	78 (21)	65 (17)	65 (24)	68 (17)
blended family	50 (1)	40 (2)	67 (18)	62 (16)	49 (18)	56 (14)

* Note: percentage of each Full Scale IQ Score Range (frequencies)

Chapter Five

Summary of Results and Discussion

This exploratory research study was focused on some at-risk adolescents to (a) identify the prevalence rate of secure and insecure attachment classifications; (b) distinguish among secure and insecure attachment classifications; (c) identify possible attachment classification related etiological pathways (i.e., early potentially traumatizing life events experienced by the adolescent, adolescent risk factors, familial risk factors); (d) explore potential relationships among attachment classifications, comorbid psychological diagnoses, measured emotional intelligence, measured cognitive intelligence, gender, age, birth order, and ethnicity; and (e) explore the use of family drawings to differentiate among attachment representations. This study sought to support or disprove previous research findings (Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001), extend previous research findings (Allen et al., 1996; Fury et al., 1997; Madigan et al., 2003; Pianta & Longmaid, 1999; Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001), and engage in original research that explored the relationships among affect regulation abilities (i.e., emotional intelligence), attachment classifications, and psychological diagnoses.

In this study, the Family Drawing Attachment Rating Form (FDARF) (see Appendix A) was developed based on previous research findings (Fury et al., 1997; Grossmann & Grossmann, 1991; Madigan et al., 2003; Pianta & Longmaid, 1999) to

reanalyse the adolescents' family drawings so as to differentiate among attachment classifications (i.e., autonomous, preoccupied, dismissing, unresolved). The attachment classifications were determined after three raters independently rescored the adolescents' family drawings in two rating processes using four levels of analysis (a) Modified and Expanded Family Drawing Checklist of Signs (Fury et al., 1997; Kaplan & Main, 1986; Madigan et al., 2003; Pianta & Longmaid, 1999), (b) Family Drawing Global Rating Scales (Fury et al., 1997; Madigan et al., 2003), (c) Global Clinical Impression (Kaplan & Main, 1986, as cited by Pianta & Longmaid, 1999), and (d) Final Clinical Rating. Strong inter-rater agreement, using Cohen's kappa ranging from .84 to .90, was found. After the drawings were rated, further support for the attachment classification designations determined by rescoring the adolescents' family drawings using the FDARF was obtained from (a) the lack or presence of a Reactive Attachment Disorder diagnosis for each adolescent; (b) the adolescent's guardian's (i.e., social worker, parent) subjective rating, at the time of intake of the adolescent into the organization, of the adolescent's ability to attach to caregivers; (c) the number of foster care or treatment centres the adolescent had previously been placed in; (d) the adolescent's guardian's subjective rating, at the time of intake of the adolescent into the organization, of the adolescent's experience of "anxiety"; and (e) the adolescent's Total EQ score. In addition, the attachment distribution found in this study, which will be discussed further in this chapter, was similar to attachment classification distributions found in other research studies with similar populations (Rosenstein &

Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001). These indicators, along with previous research findings (Fury et al., 1997; Grossmann & Grossmann, 1991; Madigan et al., 2003; Pianta & Longmaid, 1999), which supported the ability of the criteria used in the FDARF to differentiate among attachment classifications, provided enough support for the attachment classification designations determined by rescoring the adolescents' family drawings using the FDARF to be viewed as valid and reliable.

5.1 *Research Questions Answered*

In this section, the research questions which guided this research study will be answered and discussed based on the findings.

What percentage of an at-risk adolescent sample obtained an autonomous/secure and insecure attachment classification?

Of the family drawings created by the at-risk adolescents, based on the final ratings determined by three independent raters using the FDARF (see Appendix A), 12% obtained an autonomous/secure classification, and 88% obtained an insecure attachment classification.

What percentage of an at-risk adolescent sample who obtained an insecure attachment classification were identified as (a) preoccupied, (b) dismissing, and (c) unresolved?

Of the family drawings created by the at-risk adolescents, based on the final ratings determined by three independent raters using the FDARF, 42% obtained a preoccupied attachment classification, 37% obtained a dismissing attachment

classification, and 9% obtained an unresolved attachment classification.

The attachment classification distribution in this study supported aspects of attachment classification distributions found in other research studies (Rosenstein & Horowitz, 1996; van IJzendoorn & Bakermans-Kranenburg, 1996; Wallis & Steele, 2001). A 1996 meta-analysis study (van IJzendoorn & Bakermans-Kranenburg, 1996) of 33 studies found a non-clinical adolescent and young adult attachment classification distribution of males and females to be 48% autonomous, 12% preoccupied, 21% dismissing, and 20% unresolved or unclassifiable; and the attachment classification distribution of adolescents with psychopathology to be 8% autonomous, 25% preoccupied, 26% dismissing, and 40% unresolved or unclassifiable. One research study (Rosenstein & Horowitz, 1996), which included a sample of 60 adolescents between the ages of 13 and 19 years who had been admitted to a private psychiatric hospital, found 2% of the adolescents obtained an autonomous attachment classification, 42% obtained a preoccupied attachment classification, 38% obtained a dismissing attachment classification, and 18% obtained an unresolved attachment classification. Another study (Wallis & Steele, 2001), which included 39 adolescents in psychiatric residential units between the ages of 13 and 20 years who had been admitted due to problems related to emotional and behavioural difficulties and none of whom were experiencing active psychosis or a developmental disability, found 10% of the participants obtained an autonomous attachment classification, 28% obtained a preoccupied attachment classification, 51% obtained a dismissing attachment

classification, and 10% were determined to be not classifiable. Similarities among the distribution rates found in these studies and this study provide further support for the ability of the FDARF to differentiate among attachment representations.

What were the etiological pathways identified in the history of some at-risk adolescents who obtained an autonomous/secure attachment classification?

A higher percentage of at-risk adolescents whose family drawing was rated autonomous/secure than at-risk adolescents whose family drawing was rated insecure experienced the following early potentially traumatizing life events (a) death of one or more step-parent, adoptive, or foster parent; (b) neglect or abandonment by a parent, caregiver, or family member; and (c) emotional abuse by a parent, caregiver, or family member; and a lower percentage of at-risk adolescents whose family drawing was rated autonomous/secure than at-risk adolescents whose family drawing was rated insecure had experienced the following early potentially traumatizing life events (a) death of both biological parents; (b) death of a sibling or close family member (e.g., grandparent, uncle, cousin); (c) life-threatening illness or life-altering accident experienced by the parent, caregiver, or adolescent (e.g., cancer, AIDS, head injury); and (d) more than two foster care or treatment centre placements.

A higher percentage of at-risk adolescents whose family drawing was rated autonomous/secure than at-risk adolescents whose family drawing was rated insecure were identified by their guardian (i.e., social worker, parent), at the time of intake into the organization, as having the following risk factors (a) substance use or abuse, (b)

physical and/or verbal aggression, (c) depression, (d) mental retardation, (e) learning disorder, (f) delinquency or criminal behaviour, (g) sexual risk taking behaviour, (h) truancy, (i) going AWOL, and (j) being in a blended family; and a lower percentage, than at-risk adolescents whose family drawing was rated insecure, of the following risk factors (a) anxiety, (b) FASD, and (c) other psychological disorders.

One question that emerged from the findings in this study was: Why were at-risk adolescents whose family drawing was rated autonomous identified by their guardian, at the time of intake into the organization, with a higher percentage of some risk factors (e.g., substance use or abuse, physical and/or verbal aggression, depression, delinquency or criminal behaviour, sexual risk taking behaviour, truancy, going AWOL) than at-risk adolescents whose family drawing was rated insecure? A higher percentage of these risk factors had been expected to have been found among at-risk adolescents whose family drawing was rated as insecure. There are a number of possible explanations for this finding.

In this study, almost three times as many females than males created family drawings that were rated autonomous. A previous research study (Wallis & Steele, 2001), which was the first study to demonstrate the impact that resolution of loss and trauma with attachment figures has among a residential adolescent clinical sample, found all of the participants in their study who were classified as autonomous were female. Of the females who were classified as autonomous, the researchers found there was a significant trend towards these individuals having resolved past loss or trauma.

In this study, early potentially traumatizing life events were identified but there was no opportunity to interview the adolescents whose family drawing was rated autonomous to determine if these adolescents had resolved past loss or trauma. It is possible that some of the at-risk adolescents whose family drawing was rated autonomous had developed an *earned secure* internal attachment representation after having resolved past losses or trauma. The high percentage of risk factors identified by the adolescent's guardian, at the time of intake into the organization, may have become evident when residual behaviours, learned while being insecurely attached, became reactivated when the adolescent's *earned secure* attachment system became overwhelmed by the challenges that occur during the life stage of adolescence.

Another possible explanation for this finding includes cognitive dissonance (Festinger, 1957, Sakai, 1999). Adolescents who have an autonomous/secure internal working model believe their caregiver will be available and responsive to their attachment needs. Of the at-risk adolescents whose family drawing was rated autonomous/secure, 81% of their mothers and 63% of their fathers experienced substance abuse. It is possible these adolescents developed an autonomous/secure internal working model during a time when their attachment figure was available and responsive to their attachment needs. Possibly, due to progression of their attachment figure's substance abuse and experience of additional potentially truamatizing life events, he or she may have no longer been able to provide a secure base for the at-risk adolescent. This could have resulted in the adolescent experiencing *cognitive*

dissonance, or an inconsistency between her or his autonomous internal working model beliefs regarding the attachment figure's availability and responsiveness and a change in his or her attachment figure's ability to provide a secure base. Cognitive dissonance may have spawned the high percentage of risk factors identified by the adolescent's guardian at the time of intake into the organization.

A third, and possibly related, explanation for this finding is that these at-risk adolescents may have been expressing their sadness and grief related to the permanent loss of or unexplained physical or emotional separation from their attachment figure (e.g., biological parent, step-parent, adoptive or foster parent, sibling, grandparent) due to death (31%), separation or divorce (50%), or immediate family substance abuse (88%). Three quarters of these adolescents were identified by their guardian, at the time of intake into the organization, as living in a blended family, which was the highest percentage of adolescents among the four attachment classifications with this risk factor. Previous research (Lewis, Feiring, & Rosenthal, 2000) has found adolescents at 18 years of age, who have experienced parental divorce, to have been more likely to have been insecurely attached than similar adolescents who have not experienced parental divorce, regardless of their early attachment pattern. In addition, it is possible that the loss of the adolescent's attachment figure increased his or her vulnerability to develop depression. One-quarter of these adolescents received a diagnosis of Major Depressive Disorder, which was the highest percentage of adolescents in the four attachment classifications to receive this diagnosis. Their

grieving process, which for some may have included depression, could have contributed to the development of some of the risk factors (e.g., substance use or abuse, delinquency or criminal behaviours, sexual risk taking behaviour) identified by their guardian at the time of intake of the adolescent into the organization.

A final possible explanation for this finding is that adolescents whose family drawing was rated autonomous were possibly more at-risk for experiencing adolescence related negative life events (e.g., peer rejection; exploitation; sexual, physical, emotional abuse by a nonfamily member) because of the limited cognitive abilities of some of these adolescents (i.e., 56% with a Mental Retardation or FASD risk factor, 88% with a learning disorder risk factor). Autonomous attachment prepares an adolescent for exploration of her or his environment. During the life stage of adolescence there is movement towards the development of identity and intimacy with peers. It is possible that these adolescents had difficulty distinguishing between healthy and unhealthy peers to interact with, due to limited cognitive abilities, limited parental guidance, and a lack of healthy role models related to the appropriate development of intimacy within relationships due to parental substance abuse. As a result, additional negative life events could have overwhelmed the adolescents' attachment system and resulted in the development of the risk factors identified by his or her guardian at the time of intake of the adolescent into the organization.

Due to the complexity of at-risk adolescents and their environments, it is unclear which of these possible explanations is likely to be accurate. Future research

may determine that aspects of all four explanations contributed to the emergence of these risk factors. This finding suggests a high percentage of at-risk adolescents whose family drawing was rated autonomous/secure were not immune to developing or demonstrating risk factors expected to be found among adolescents whose family drawing was rated insecure. This highlights the uniqueness of these adolescents and suggests that this group requires further research. To provide clarity when exploing the unique life experiences and vulnerabilities which may be inherent among these adolescents it may be useful to identify these adolescents as being in an *at-risk autonomous* attachment classification, for both research and praxis purposes. Previous research (Hamilton, 2000; Vondra, Hommerding, & Shaw, 1999; Waters et al., 2000; Weinfield, Sroufe, & Egeland, 2000) has found secure attachment can change to insecure attachment when a person's attachment system becomes overwhelmed due to cumulative potentially traumatizing life events, but it has been unclear as to when and how this happens. A number of models related to change in attachment classifications across the lifespan are currently being developed (Davila & Cobb, 2003; Davila & Cobb, 2004). It is possible the findings in this study have identified a time along the developmental trajectory of some at-risk adolescents when a change from secure to insecure attachment was at-risk for occurring, along with some of the risk factors that were evident at that time. These findings may be useful for future research.

What were the etiological pathways identified in the history of some at-risk adolescents who obtained an insecure attachment classification?

Overall, at-risk adolescents who created a family drawing that was rated insecure were approximately three times more likely to have lost one or both biological parents, and/or a sibling or close family member (e.g., grandparent, uncle, cousin) than at-risk adolescents who created a family drawing that was rated autonomous.

A higher percentage of at-risk adolescents whose family drawing was rated preoccupied than at-risk adolescents whose family drawing was rated autonomous, dismissing, or unresolved experienced the following early potentially traumatizing life events (a) death of both biological parents; (b) sexual, emotional, or physical abuse by a nonfamily member; and (c) biological parent separation or divorce; and a lower percentage of at-risk adolescents whose family drawing was rated preoccupied than at-risk adolescents whose family drawing was rated autonomous, dismissing, or unresolved had experienced the following early potentially traumatizing life events (a) death of one or more step-parent, adoptive, or foster parent; (b) sexual abuse by a parent, caregiver, or family member; (c) emotional abuse by a parent, caregiver, or family member; (d) physical abuse by a parent, caregiver, or family member; and (e) immediate family substance abuse.

The at-risk adolescents whose family drawing was rated preoccupied did not have a higher percentage of any of the risk factors identified by their guardian (i.e., social worker, parent), at the time of intake into the organization, than at-risk adolescents whose family drawing was rated autonomous, dismissing, or unresolved. The at-risk adolescents whose family drawing was rated preoccupied had a lower

percentage of the following risk factors identified by their guardian, at the time of intake into the organization, than at-risk adolescents whose family drawing was rated autonomous, dismissing, or unresolved (a) suicide ideation or attempts, (b) physical concerns (e.g., seizures, head injury, diabetes, enuresis), (c) eating disorder, (d) delinquency or criminal behaviour, (e) sexual risk taking behaviour, (f) truancy, and (g) being in a blended family.

It is interesting to note that although a higher percentage of at-risk adolescents whose family drawing was rated preoccupied, than at-risk adolescents in the other attachment classifications, experienced biological parent separation or divorce, they experienced the lowest percentage of being in a blended family. This suggested that many of these at-risk adolescents lived in a single-parent family. These adolescents were also identified as not having a higher percentage, than at-risk adolescents in the other attachment classifications, of any of the risk factors identified by their guardian at the time of intake into the organization. In contrast, a higher percentage of at-risk adolescents whose family drawing was rated autonomous, than at-risk adolescents in the other attachment classifications, experienced being in a blended family, which suggested many of these at-risk adolescents likely lived in a two-parent blended family; and were identified as having the highest percentage of some of the risk factors identified by their guardian at the time of intake into the organization.

A higher percentage of at-risk adolescents whose family drawing was rated dismissing than at-risk adolescents whose family drawing was rated autonomous,

preoccupied, or unresolved experienced the following early potentially traumatizing life events (a) death of one biological parent; (b) life-threatening illness or life-altering accident experienced by the parent, caregiver, or adolescent (e.g., cancer, AIDS, head injury); (c) biological parent who has a psychological disorder; and (d) witnessing familial sexual, physical, or emotional abuse; and a lower percentage of at-risk adolescents whose family drawing was rated dismissing than at-risk adolescents whose family drawing was rated autonomous, preoccupied, or unresolved had experienced the following early potentially traumatizing life events (a) neglect or abandonment by a parent, caregiver, or family member; (b) sexual, emotional, or physical abuse by a nonfamily member; and (c) one or more absent parent or caregiver.

A higher percentage of at-risk adolescents whose family drawing was rated dismissing than at-risk adolescents whose family drawing was rated autonomous, preoccupied, or unresolved were identified by their guardian, at the time of intake into the organization, as having the following risk factors (a) suicide ideation or attempts, and (b) other psychological disorders; and a lower percentage, than at-risk adolescents whose family drawing was rated autonomous, preoccupied, or unresolved, of the following risk factors (a) ADHD, (b) depression, (c) mental retardation, (d) learning disorder, and (e) physical concerns (e.g., seizures, head injury, diabetes, enuresis).

It is worth noting that these adolescents, though they were identified as having the highest percentage, compared to at-risk adolescents in the other attachment classifications, of experiencing suicide ideation or attempts, they represented the

lowest percentage of at-risk adolescents among the attachment classifications to have been identified with depression as a risk factor. This may reflect an ability of at-risk adolescents whose family drawing was rated dismissing to mask their depression by engaging in avoidance strategies that left them at-risk for depression not being detected at an early enough stage to prevent suicide ideation or attempts.

A higher percentage of at-risk adolescents whose family drawing was rated unresolved than at-risk adolescents whose family drawing was rated autonomous, preoccupied, or dismissing experienced the following early potentially traumatizing life events (a) death of a sibling or close family member (e.g., grandparent, uncle, cousin); (b) sexual abuse by a parent, caregiver, or family member; (c) physical abuse by a parent, caregiver, or family member; (d) immediate family substance abuse; (e) more than two foster care or treatment centre placements; and (f) one or more absent parent or caregiver; and a lower percentage of at-risk adolescents whose family drawing was rated unresolved than at-risk adolescents whose family drawing was rated autonomous, preoccupied, or dismissing had experienced the following early potentially traumatizing life events (a) death of both biological parents; (b) life-threatening illness or life-altering accident experienced by the parent, caregiver, or adolescent (e.g., cancer, AIDS, head injury); (c) biological parent who has a psychological disorder; (d) biological parent separation or divorce; and (e) witnessing familial sexual, physical, or emotional abuse.

A higher percentage of at-risk adolescents whose family drawing was rated

unresolved than at-risk adolescents whose family drawing was rated autonomous, preoccupied, or dismissing were identified by their guardian, at the time of intake into the organization, as having the following risk factors (a) ADHD, (b) anxiety, (c) FASD, (d) physical concerns (e.g., seizures, head injury, diabetes, enuresis), and (e) an eating disorder; and a lower percentage, than at-risk adolescents whose family drawing was rated autonomous, preoccupied, or dismissing, of the following risk factors (a) substance use or abuse, (b) physical and/or verbal aggression, and (c) going AWOL.

Data analysis found a trend towards an association between the potentially traumatizing life event of "physical abuse by a parent, caregiver, or family member" and attachment classifications. A higher percentage of at-risk adolescents whose family drawing was rated unresolved, than at-risk adolescents in the other attachment classifications, had experienced this potentially traumatizing life event. In addition, a higher percentage of these at-risk adolescents, than at-risk adolescents in the other attachment classifications, experienced both "physical abuse by a parent, caregiver, or family member" and "sexual abuse by a parent, caregiver, or family member"; and a higher percentage of these at-risk adolescents, than at-risk adolescents in the other attachment classifications, were identified with the risk factors of "anxiety" and "ADHD" along with the lowest percentage of the risk factor "physical and/or verbal aggression". These findings have spawned the following questions: Is there a relationship among the "anxiety" and "ADHD" risk factors identified in the at-risk adolescents whose family drawing was rated unresolved and the potentially

traumatizing life events of "physical abuse by a parent, caregiver, or family member" and "sexual abuse by a parent, caregiver, or family member" a high percentage of them experienced? Could these potentially traumatizing life events have resulted in the development of two conflicting internal working models? If so, could these two conflicting internal working models have contributed to the anxiety and inattentiveness evident as risk factors? Bowlby (1973) hypothesized that two conflicting internal working models could coexist but would likely result in an uneasy ocillation between the two perspectives. Another question that has emerged from these findings is related to the similarities found in this study between the percentages of at-risk adolescents whose family drawing was rated autonomous and the at-risk adolescents whose family drawing was rated unresolved related to some risk factors (i.e., depression, learning disorder, delinquency or criminal behaviour) and Total EQ scores: Is there a relationship between adolescents who obtain an *at-risk autonomous* attachment classification and adolescents who obtain an unresolved attachment classification? A longitudinal study (Allen et al., 1996), which included a group of at-risk upper-middle-class adolescents, examined the long-term sequelae of severe adolescent psychopathology using attachment theory. These participants had been diagnosed with a severe psychopathology that required hospitalization at age 14. A disproportionately high rate of unresolved previous loss or trauma (e.g., abusive or frightening behaviour by an attachment figure) was associated with insecure attachment classifications in the sequelae of severe pathology. In this study, early

potentially traumatizing life events were identified, but there was no opportunity to interview the adolescents whose family drawing was rated insecure to determine if these adolescents continued to be unresolved about their past loss or trauma. Further research is required to determine the role unresolved previous loss or trauma plays in attachment of at-risk adolescents so as to determine where, along the attachment continuum, at-risk adolescents who obtain an *at-risk autonomous* attachment classification are in relationship to at-risk adolescents who obtain an unresolved attachment classification.

Was there a relationship among the total number of early potentially traumatizing life events identified in the history of some at-risk adolescents and the attachment classification she or he obtained?

No statistically significant relationship was found between the total number of early potentially traumatizing life events experienced by the adolescent and the attachment classification of his or her family drawing. In addition, no significant association was found between any of the specific early potentially traumatizing life events experienced by the adolescent and attachment classifications, although, a trend towards an association was found between the potentially traumatizing life event of experiencing "physical abuse by a parent, caregiver, or family member" and attachment classifications. The highest percentage of adolescents whose family drawing was rated unresolved had experienced this early potentially traumatizing life event. Further research is warranted to determine if this association is statistically significant within

other populations.

Was there a relationship among the measured emotional and cognitive abilities of some at-risk adolescents and the attachment classification she or he obtained?

Using bivariate correlation analysis, based on the at-risk adolescents for whom a Total EQ score and Full Scale IQ score were available, a statistically significant relationship was found between Full Scale IQ scores and Total EQ scores. At-risk adolescents with a higher Full Scale IQ score tended to have a higher Total EQ score. No statistical significance was found between Total EQ scores and attachment classifications, or Full Scale IQ scores and attachment classifications. This supported previous research (Rosenstein & Horowitz, 1996) which found no statistical significance between Full Scale IQ scores and attachment classifications. A higher percentage of at-risk adolescents whose family drawing was rated autonomous than at-risk adolescents whose family drawing was rated insecure were found to have a Total EQ score in the average to above average range. This provided preliminary support for continuing to explore the possibility of a relationship between emotional intelligence and attachment classifications.

No statistical significance was found between Total EQ scores and gender, birth order, ethnicity, total number of early potentially traumatizing life events experienced by the adolescent, total number of adolescent risk factors at the time of intake into the organization, total number of familial risk factors at the time of intake of the adolescent into the organization, or diagnosis. A statistically significant

relationship was found between Total EQ scores and age. Older at-risk adolescents tended to have higher Total EQ scores. No statistical significance was found between Full Scale IQ scores and gender, birth order, age, ethnicity, total number of early potentially traumatizing life events experienced by the adolescent, or total number of familial risk factors at the time of intake of the adolescent into the organization. Using bivariate correlation, a statistically significant relationship was found between Full Scale IQ scores and total number of adolescent risk factors at time of intake into the organization. At-risk adolescents with higher Full Scale IQ scores tended to have fewer risk factors at the time of intake into the organization.

Was there a relationship among the measured emotional and cognitive abilities of some at-risk adolescents and psychological diagnoses?

No statistical significance was found between Total EQ scores and psychological diagnoses. A statistically significant relationship was found between diagnostic groupings and Full Scale IQ scores. Tukey procedure used for post hoc analysis found at-risk adolescents with a diagnosis of an externalizing disorder/s had a higher Full Scale IQ score than at-risk adolescents with a diagnosis of an externalizing disorder/s and a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encaphalopathy group; a diagnosis of an externalizing disorder/s, internalizing disorder/s, and a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encaphalopathy group; a diagnosis reflecting a Full Scale IQ of < 85 only; and a diagnosis which included substance abuse. Previous research (Rosenstein & Horowitz,

1996) found no statistical significance between Full Scale IQ scores and Axis I diagnosis.

Was there a pattern of psychological diagnoses prevalent among some at-risk adolescents who obtained (a) autonomous/secure, (b) preoccupied, (c) dismissing, and (d) unresolved attachment classifications?

Using likelihood ratio chi-square analysis, a significant association was found between diagnostic groupings and attachment classifications. Of the adolescents where a diagnosis was available and of whom an attachment classification had been obtained, 44% of adolescents whose family drawing was rated autonomous, 55% of adolescents whose family drawing was rated preoccupied, 42% of adolescents whose family drawing was rated dismissing, and 55% of adolescents whose family drawing was rated unresolved were diagnosed with an externalizing disorder/s, or an externalizing disorder/s and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group. Thirty-one percent of adolescents who created a family drawing that was rated autonomous, 10% of adolescents who created a family drawing that was rated preoccupied, 16% of adolescents who created a family drawing that was rated dismissing, and 9% of adolescents who created a family drawing that was rated unresolved received a diagnosis that included substance abuse. Thirteen percent of adolescents who created a family drawing that was rated autonomous, 4% of adolescents who created a family drawing that was rated preoccupied, 9% of adolescents who created a family drawing

that was rated dismissing, and 0% of adolescents who created a family drawing that was rated unresolved received a diagnosis that included personality disorder.

Meta-analysis (van IJzendoorn & Bakermans-Kranenburg, 1996) of 33 studies found no unequivocal correspondence between attachment classifications and specific disorders. Research conducted by Rosenstein and Horowitz (1996), which was the first study to find pervasive insecure attachment representations among psychiatrically ill adolescents, found significant associations between Axis I diagnosis and attachment classifications. Conduct disorder and concurrent conduct disorder and affective disorders were associated with a dismissing attachment classification, and affective disorders were associated with a preoccupied attachment classification. The participants in their study who were diagnosed with substance abuse were twice as likely to obtain a dismissing attachment classification than those without a substance abuse diagnosis.

The findings from this study did not find the associations between specific diagnosis and attachment classifications that Rosenstein and Horowitz (1996) found in their study. In this study, using likelihood ratio chi-square analysis, no significant association was found between specific diagnosis and attachment classifications. Data analysis found, of the attachment classifications, the highest percentage of adolescents whose family drawing was rated autonomous received a diagnosis of Major Depressive Disorder, with the second highest percentage with this diagnosis were adolescents whose family drawing was rated dismissing; and the highest

percentage of adolescents whose family drawing was rated autonomous received a diagnosis of Substance Related Disorder. Data analysis also found, of the attachment classifications, the highest percentage of adolescents whose family drawing was rated preoccupied received a diagnosis of ODD, and the highest percentage of adolescents whose family drawing was rated unresolved received a diagnosis of ADHD and Conduct Disorder (CD).

Allen, Hause, and Borman-Spurrell's (1996) longitudinal study of at-risk upper-middle-class adolescents, who had been diagnosed with severe psychopathology, found a relationship among previous hospitalization, an insecure attachment classification, criminal behaviour, and drug use. Criminal behaviour was associated with a dismissing attachment classification and unresolved previous trauma. In this study, delinquent or criminal behaviour (e.g., theft, prostitution, sexual assault), if present, was identified by the adolescent's guardian as a risk factor at the time of intake of the adolescent into the organization. Of the adolescents whose family drawing was rated autonomous, 69% were identified as having delinquent or criminal behaviour as a risk factor at the time of intake into the organization; of the adolescents whose family drawing was rated preoccupied, 43% were identified as having delinquent or criminal behaviour as a risk factor at the time of intake into the organization; of the adolescents whose drawing was rated dismissing, 51% were identified as having delinquent or criminal behaviour as a risk factor at the time of intake into the organization; and of the adolescents whose family drawing was rated

unresolved, 67% were identified as having delinquent or criminal behaviour as a risk factor at the time of intake into the organization. It is unclear as to why this risk factor was highest for the at-risk adolescents whose family drawing was rated autonomous, although, this finding may be related to previously stated possible reasons regarding why a high percentage of adolescents whose drawing was rated autonomous were identified with so many risk factors.

What percentage of at-risk adolescents who obtained an autonomous/secure attachment classification, and who were identified with an average or above average emotional intelligence ability, had a psychological diagnosis?

Of the at-risk adolescents who obtained an autonomous/secure attachment classification and of whom a Total EQ score was available, 63% were identified with average or more than average emotional intelligence ability. Of these adolescents, 90% received a psychological diagnosis, 44% received an externalizing disorder/s diagnosis and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group, 44% received a diagnosis that included substance abuse, and 11% received a diagnosis that included personality disorder. There were no studies to compare these findings to as, to the best of the author's knowledge, this was the first study to have explored the possible relationships among attachment classifications, emotional intelligence, and psychological diagnoses.

What percentage of at-risk adolescents who obtained an insecure attachment classification, and who were identified with an average or above average emotional

intelligence ability, had a psychological diagnosis?

Of the at-risk adolescents who obtained an insecure attachment classification and of whom a Total EQ score was available, 43% were identified with average or more than average emotional intelligence ability. Of these adolescents, 94% received a psychological diagnosis. Fifteen percent received an externalizing disorder/s diagnosis; 2% received a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 41% received an externalizing disorder/s diagnosis and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 2% received an internalizing disorder/s diagnosis and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 7% received an externalizing disorder/s diagnosis and an internalizing disorder/s diagnosis; 11% received an externalizing disorder/s diagnosis, internalizing disorder/s diagnosis, and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 17% received a diagnosis that included substance abuse; and 4% received a diagnosis that included personality disorder.

What percentage of at-risk adolescents who obtained an autonomous/secure attachment classification, and who were identified with below average emotional intelligence ability, had a psychological diagnosis?

Of the at-risk adolescents who obtained an autonomous/secure attachment classification and of whom a Total EQ score was available, 38% were identified with

below average emotional intelligence ability. Of these adolescents, 100% received a psychological diagnosis, 50% received an externalizing disorder/s diagnosis and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 17% received an internalizing disorder/s diagnosis; 17% received a diagnosis that included substance abuse; and 17% received a diagnosis that included personality disorder.

What percentage of at-risk adolescents who obtained an insecure attachment classification, and who were identified with below average emotional intelligence ability, had a psychological diagnosis?

Of the at-risk adolescents whose family drawing was rated insecure and an Total EQ Score was available, 57% were identified with below average emotional intelligence ability. Of these at-risk adolescents, 81% received a psychological diagnosis, 15% received an externalizing disorder or disorders diagnosis; 33% received an externalizing disorder/s diagnosis and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 4% received an internalizing disorder/s diagnosis and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group. Fifteen percent received an externalizing disorder/s diagnosis and an internalizing disorder/s diagnosis; 15% received an externalizing disorder/s diagnosis, an internalizing disorder/s diagnosis, and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group; 8% received

a diagnosis that included substance abuse, and 8% received a diagnosis that included personality disorder.

Was there a relationship among the total number of early potentially traumatizing life events identified in the history of some at-risk adolescents, measured emotional intelligence, and comorbid psychological diagnoses?

No statistically significant relationship was found between total number of early potentially traumatizing life events experienced by the adolescent and Total EQ scores or psychological diagnoses. Using likelihood ratio chi-square analysis, a significant association was found between the specific early potentially traumatizing life events of "neglect or abandonment by a parent, caregiver, or family member" and "witnessing familial sexual, physical, or emotional abuse", and a diagnosis of ADHD. Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life events of "death of one or more step-parent, adoptive or foster parent" and "sexual, emotional, physical abuse by a nonfamily member", and a diagnosis of Major Depressive Disorder. Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life events of "death of one or more step-parent, adoptive or foster parent" and "sexual abuse by a parent, caregiver, or family member", and a diagnosis of Generalized Anxiety Disorder. Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "immediate family substance abuse" and a diagnosis of Dysthymic Disorder. Using

likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "witnessing familial sexual, emotional, or physical abuse" and a diagnosis of Post Traumatic Stress Disorder. Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "sexual, emotional, physical abuse by a nonfamily member" and a diagnosis of Adjustment Disorder. Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life events of "neglect or abandonment by parent, caregiver, or family member", and "immediate family substance abuse", and a diagnosis of Fetal Alcohol Spectrum Disorder (FASD); and "witnessing familial sexual, physical, or emotional abuse" and a diagnosis of Fetal Alcohol Effect (FAE). Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "death of one biological parent" and a diagnosis of Dissociative Disorder. Using likelihood ratio chi-square analysis, a significant association was found between the early potentially traumatizing life event of "sexual, emotional, physical abuse by a nonfamily member" and a diagnosis of Substance Related Disorder.

5.2 *Additional Findings*

At-risk adolescents who experienced more early potentially traumatizing life events tended to have more risk factors at the time of intake into the organization. At-risk adolescents who experienced more early potentially traumatizing life events also

tended to have a biological mother, father, siblings and extended family who had more risk factors at the time of intake of the adolescent into the organization. Mothers who had more risk factors at the time of intake of the adolescent into the organization tended to have male partners, who were identified as the adolescent's biological father, who had more risk factors at the time of intake of the adolescent into the organization. Fathers who had more risk factors at the time of intake into the organization tended to have other children and extended family who had more risk factors at the time of intake of the adolescent into the organization. At-risk adolescents who had more risk factors at the time of intake into the organization tended to have siblings and extended family who had more risk factors at the time of intake of the adolescent into the organization. In addition, data analysis found at-risk adolescents who received a diagnosis of substance abuse had more risk factors at the time of intake into the organization than at-risk adolescents who received a diagnosis of externalizing disorder/s, or externalizing disorder/s and internalizing disorder/s.

In this study, female at-risk adolescents were almost three times more likely than male at-risk adolescents to have created a family drawing that was rated autonomous. On average, female at-risk adolescents experienced more early potentially traumatizing life events than male at-risk adolescents, and were identified with more risk factors by their guardian, at the time of intake into the organization, than male at-risk adolescents. Female at-risk adolescents were more likely than male at-risk adolescents to have experienced the potentially traumatizing life events "sexual abuse

by a parent, caregiver, or family member" and "sexual, emotional, or physical abuse by a nonfamily member". Female at-risk adolescents were more likely than male at-risk adolescents to have been identified, at the time of intake into the organization, with the risk factors "substance use or abuse", "sexual risk taking behaviour", "other psychological disorders", "truancy", and "going AWOL". Female at-risk adolescents were more likely than male at-risk adolescents to have received a diagnosis of Major Depression Disorder and Substance Related Disorder. All of the at-risk adolescents who received a diagnosis that included Personality Disorder were female. Male at-risk adolescents were almost five times more likely than female at-risk adolescents to have created a family drawing that was rated unresolved. Male at-risk adolescents were more likely than female at-risk adolescents to have received a diagnosis of an externalizing disorder/s, or an externalizing disorder/s and a diagnosis that reflected a Full Scale IQ of < 85 and/or an accompanying diagnosis from the static encephalopathy group. Male at-risk adolescents were more likely than female at-risk adolescents to have been identified with an "ADHD" risk factor by their guardian, at the time of intake into the organization, and to have received a diagnosis of ADHD.

Of the at-risk adolescents in this study, two-thirds were identifed as being the oldest child within their gender in their family. It was found that the older the at-risk adolescent the more risk factors, at the time of intake into the organization, she or he tended to have. Older at-risk adolescents also tended to have higher Total EQ scores. The middle child of their gender were found to be more likely to have "witnessed

familial sexual, physical, or emotional abuse" than at-risk adolescents who were identified in the other birth orders. The middle child of their gender represented the highest percentage of the birth orders to receive a diagnosis which included substance abuse. The youngest child in their gender, along with at-risk adolescents who were identified as being an only child, represented the highest percentages of the at-risk adolescents to have experienced the potentially traumatizing life event "one or more absent parent or caregiver". Of the at-risk adolescents who received a diagnosis which included personality disorder, the highest percentage were identified as the youngest in their gender. In addition, the youngest in their gender, along with at-risk adolescents who were identified as being an only child, represented the highest percentages of the at-risk adolescents to have received a diagnosis of ADHD.

Of the ethnicities represented in this study, at-risk adolescents of First Nation ethnicity were found to have experienced statistically significantly more early potentially traumatizing life events than the at-risk adolescents of Caucasian or Inuit ethnicities. The total number of the father's risk factors, at the time of intake of the adolescent into the organization, were statistically significantly higher for the at-risk adolescents of First Nation ethnicity than the at-risk adolescents of Metis ethnicity. The at-risk adolescents of First Nation ethnicity experienced the highest percentage, of the ethnicities, of the potentially traumatizing life events "death of one biological parent", "neglect or abandonment by a parent, caregiver, or family member", "physical abuse by a parent, caregiver, or family member", and "witnessing familial sexual,

physical, or emotional abuse". All of the at-risk adolescents of First Nation ethnicity had experienced "immediate family substance abuse". The at-risk adolescents of First Nation ethnicity represented the highest percentage of the at-risk adolescents to have created a family drawing that was rated dismissing. Both at-risk adolescents of First Nation and Metis ethnicities represented the highest percentages of at-risk adolescents to have experienced "emotional abuse by a parent, caregiver, or family member". At the time of intake into the organization, the at-risk adolescents of First Nation ethnicity represented the highest percentage of the at-risk adolescents to have been identified by their guardian as having a "suicide ideation or attempts" risk factor and the lowest percentage to have been identified with the risk factors "ADHD" and "being in a blended family". The at-risk adolescents of First Nation ethnicity represented the lowest percentage of the at-risk adolescents to have received a diagnosis of ADHD or ODD.

Of the ethnicities represented in this study, at-risk adolescents of Caucasian ethnicity represented the lowest percentage of the at-risk adolescents to have experienced the potentially traumatizing life event "immediate family substance abuse". A similar percentage of at-risk adolescents of Caucasian and First Nation ethnicities created a family drawing that was rated unresolved, whereas none of the at-risk adolescents of Metis or Inuit ethnicities created a drawing that was rated unresolved. At-risk adolescents of Caucasian ethnicity represented the highest percentage of the at-risk adolescents to have been identified by their guardian, at the

time of intake into the organization, with an "ADHD" risk factor, and the lowest percentage to have been identified with the risk factors "substance use or abuse", "truancy", and "going AWOL". Both at-risk adolescents of Caucasian and Inuit ethnicities were identified with the lowest percentage of "suicide ideation or attempts" risk factor by their guardian, at the time of intake into the organization. At-risk adolescents of Caucasian ethnicity represented the highest percentage of the at-risk adolescents to have received a diagnosis of ADHD, ODD, and Dysthymic Disorder, and the lowest percentage of the at-risk adolescents to have received a diagnosis that included personality disorder or substance abuse.

Of the ethnicities, at-risk adolescents of Metis ethnicity represented the highest percentage of the at-risk adolescents to have created a family drawing that was rated preoccupied. At-risk adolescents of Metis ethnicity represented the highest percentage of the at-risk adolescents to have been identified by their guardian, at the time of intake into the organization, with the risk factor "FASD". At-risk adolescents of Metis ethnicity represented the highest percentage of the at-risk adolescents to have received a diagnosis that included a personality disorder; a diagnosis of externalizing disorder/s and < 85 IQ and/or an accompanying diagnosis from the static encaphalopathy group; and a diagnosis of an externalizing disorder/s and internalizing disorder/s. At-risk adolescents of Metis ethnicity represented the second highest percentage of the at-risk adolescents to have received a diagnosis of ADHD and ODD.

Of the ethnicities, one-half of the at-risk adolescents of Inuit ethnicity created a

family drawing that was rated autonomous, which represented the highest percentage of the at-risk adolescents who created a family drawing that was rated autonomous. Of the ethnicities, the at-risk adolescents of Inuit ethnicity represented the lowest percentage of the at-risk adolescents to have experienced the potentially traumatizing life events "emotional abuse by a parent, caregiver, or family member" and "witnessing familial sexual, physical, or emotional abuse". The total number of adolescent risk factors, at the time of intake into the organization, for at-risk adolescents of Inuit ethnicity were statistically significantly higher than the total number of adolescent risk factors, at the time of intake into the organization, of at-risk adolescents of Caucasian ethnicity. The at-risk adolescents of Inuit ethnicity represented the highest percentage of the at-risk adolescents to have been identified by their guardian, at the time of intake into the organization, with the risk factors "being in a blended family", "substance use or abuse", "truancy", "going AWOL", and "mental retardation". Seventy-five percent of the at-risk adolescents of Inuit ethnicity received a diagnosis of Mental Retardation. At-risk adolescents of Inuit ethnicity, along with at-risk adolescents of First Nation ethnicity, represented the highest percentages of at-risk adolescents to have received a diagnosis that included substance abuse.

5.3 *General Discussion*

The findings in this study have enhanced understanding about the etiological pathways of some at-risk adolescents. Approximately two-thirds of the at-risk adolescents in this study were of Aboriginal ethnicity, and over one-third of the at-risk

adolescents in this study were identified with a developmental disability (e.g., Fetal Alcohol Spectrum Disorder, Mental Retardation). The findings in this study identified early potentially traumatizing life events experienced by these adolescents and the types of risk factors they had developed. All of the at-risk adolescents in this study had experienced at least one early potentially traumatizing life event and a few at-risk adolescents had experienced as many as twelve early potentially traumatizing life events by the time they were admitted into the organization. Previous research (Wallis & Steele, 2001) has suggested unresolved loss and trauma increases vulnerability for the development of psychopathology. In this study, it was not known if any of the at-risk adolescents had resolved the loss and trauma they had experienced, although, this seemed unlikely given that almost all of the at-risk adolescents in this study received either an Axis I or Axis II diagnosis, or a diagnosis from both Axis I and Axis II. In addition to being at-risk for the development of psychopathology due to unresolved loss or trauma, some of the at-risk adolescents had an increased vulnerability for the development of maladaptive behaviour due to a developmental disability (Sattler, 1988), which further emphasized the vulnerability of some of the adolescents in this population.

Attachment theory suggests the development of secure attachment in early childhood provides an enhanced ability to cope with stressors across the lifespan. The findings in this study suggest that secure attachment may not be enough to prevent the development of psychopathology during the life stage of adolescence when cumulative

loss and trauma have been experienced. In addition, cumulative loss and trauma that have provided alternative experiences to those expected, based on a secure internal working model, may put the adolescent at-risk for changing from secure to insecure attachment. Given the significance of maintaining secure attachment or developing *earned secure* attachment for normative psychosocioemotional development across the lifespan, these findings suggest the importance of ensuring attachment specific interventions are made available to at-risk adolescents. In particular, at-risk adolescents who have been identified with Fetal Alcohol Spectrum Disorder likely require, due to their increased vulnerability for the development of maladaptive behaviour, attachment specific interventions to assist them in resolving loss and trauma related to the early potentially traumatizing life events they likely have experienced.

To ensure the effectiveness of attachment specific interventions practitioners need to identify the attachment representation held by the at-risk adolescent. The findings in this study add to growing support for the use of family drawings as a method to differentiate among attachment representations. Based on the findings in this study it is suggested that an additional attachment classification, *at-risk autonomous,* be used when differentiating among attachment representations of at-risk adolescents. This attachment classification would be appropriately used when an at-risk adolescent's attachment representation is identified as autonomous and she or he has a high percentage of risk factors otherwise expected to be found among at-risk adolescents identified as insecurely attached.

For treatment planning purposes it would be useful to obtain an emotional intelligence score for the at-risk adolescent. This would provide information about the types of activities to include in attachment specific interventions so as to enhance affect regulation abilities already established and develop needed ones. In this study it was found that at-risk adolescents with a higher Full Scale IQ tended to have a higher Total EQ score. Given that almost three-quarters of the at-risk adolescents in this study obtained a Full Scale IQ score within the below average ranges, attachment specific interventions that included the development of affect regulation abilities would likely prove to be useful for most at-risk adolescents.

Previous research (Fonagy et al., 1996) has found adults who were identified with a dismissing attachment classification showed more clinical improvement, in terms of overall adaptation, after treatment than adults identified with any of the other attachment classifications. It was suggested that this may have been due to their receptivity to the possibility that past relationships could have affected their current functioning. Given that individuals identified with an autonomous attachment classification likely have an autonomous based internal working model, it may be found that *at-risk autonomous* adolescents, after attachment specific intervention, prove to be even more responsive (e.g., reduced risk factors) to treatment. Attachment specific intervention for at-risk adolescents identified as *at-risk autonomous* could seek to provide relational experiences that would support the expectations that accompany an autonomous internal working model, process the loss and trauma that

provided contrary relational experiences to those expected based on an autonomous internal working model, and repair and build upon the cognitive and affective aspects of the autonomous internal working model held by the at-risk adolescent.

Future researchers may find the life stage of adolescence to be an opportune time for attachment specific interventions to be effective. Recent research (Blakemore & Choudbury, 2006), using functional Magnetic Resonance Imaging (fMRI), has found specific changes to the neural architecture of the brain occur during the developmental stage of adolescence. It is speculated that adolescence is a time when synaptic reorganization occurs resulting in the brain being more sensitive to experiential input related to executive function and social cognitition. Blakemore & Choudbury (2006) suggested further investigation into the benefits of greater emphasis on social and emotional cognitive development during adolescence. Attachment specific interventions could prove to be effective in facilitating this type of development.

5.4 *Implications*

Although further research with other samples of at-risk adolescents is required to support or disprove the findings in this study, the data in this study suggests at-risk adolescents, overall, are in need of attachment specific intervention as part of treatment. When specific attachment representations are not identified, practitioners can maintain some confidence in including attachment specific interventions in their treatment plans for at-risk adolescents who have lost one or both biological parents, and/or a sibling or close family member (e.g., grandparent, uncle, cousin), given that the

findings in this study determined these at-risk adolescents were three times more likely to be identified with an insecure attachment representation than at-risk adolescents who had not lost these family members. At-risk adolescents who are identified with an *at-risk autonomous* attachment representation would also likely benefit from attachment specific interventions, albeit, with a somewhat different therapeutic focus, so as to prevent a change from an autonomous attachment representation to an insecure attachment representation. Given that client priorizing for treatment is often required in the workplace, it is worth noting that these at-risk adolescents may respond more quickly to treatment, given the expectation that their autonomous working model is still intact, than at-risk adolescents who have been identified with an insecure attachment representation. This may shorten treatment time and facilitate a preventative approach in treatment.

Based on the findings in this study, female at-risk adolescents would likely benefit from an educational component in school or in treatment, starting in early adolescence and continuing into early adulthood, that focused on what constitutes familial and nonfamilial sexual, physical, and emotional abuse; precautions to prevent this type of abuse; steps to take to report this type of abuse; and where to get professional assistance if victimized. Helping female at-risk adolescents understand the connection between having experienced this type of abuse and choices they may be making to engage in sexual risk taking behaviour, using substances, succumbing to criminal behaviour, being truant, or going AWOL could assist them making alternative

choices. Male at-risk adolescents would likely also benefit from a similar educational component, although, one focused more on physical abuse.

In some cases the forementioned educational components would likely also benefit the at-risk adolescent's family members. The data in this study found at-risk adolescents who were identified by their guardian, at the time of intake into the organization, with more risk factors had experienced more early potentially traumatizing life events, and had a mother, father, sibling, and/or extended family who also had more risk factors. Providing family counseling to enhance the at-risk adolescent's environment is a key component in supporting treatment for the at-risk adolescent and preventing a further departure from normative development. The findings in this study suggest this comprehensive approach would likely benefit Aboriginal at-risk adolescents, in particular at-risk adolescents of First Nation and Inuit ethnicities. At-risk adolescents of First Nation ethnicity were identified as having experienced significantly more early potentially traumatizing life events than at-risk adolescents of Caucasian or Inuit ethnicities. These at-risk adolescents also had fathers who had significantly higher risk factors than fathers of at-risk adolescents of Metis ethnicity. All of the at-risk adolescents of First Nation ethnicity, in this study, had experienced family substance abuse, and a large majority of them had experienced neglect, emotional abuse, and physical abuse. One-quarter of these at-risk adolescents had experienced the death of one biological parent. These findings suggest some at-risk adolescents of First Nation ethnicity might require treatment that includes

bereavement counseling in addition to attachment specific intervention and an educational component. In addition, First Nation at-risk adolescents represented the highest percentage of the ethnicities to have been identified with a dismissing attachment representation. The at-risk adolescents identified with a dismissing attachment representation were identified by their guardian, at the time of intake into the organization, with the lowest percentage of "depression" as a risk factor. At-risk adolescents of First Nation ethnicity represented the highest percentage of the ethnicities to have been identified by their guardian, at the time of intake into the organization, with a "suicide ideation or attempts" risk factor. These findings suggest some at-risk adolescents who are identified with a dismissing attachment representation may be able to mask their depression resulting in this risk factor not being detected before suicidal ideation becomes apparent. Practitioners working with First Nation at-risk adolescents may want to take additional measures for early detection of depression among these at-risk adolescents.

At-risk adolescents of Inuit ethnicity constituted one-half of the at-risk adolescents who were identified with an autonomous attachment representation. These at-risk adolescents were also found to have significantly more risk factors, at the time of intake into the organization, than at-risk adolescents of Caucasian ethnicity. Three-quarters of the at-risk adolescents of Inuit ethnicity in this study were identified with mental retardation. These at-risk adolescents were identified by their guardian, at the time of intake into the organization, with the highest percentage of the ethnicities with

a "substance use or abuse", "being in a blended family", "truancy", and "going AWOL" risk factors; and most of the at-risk adolescents of Inuit ethnicity had experienced "family substance abuse". Given these findings, some at-risk adolescents of Inuit ethnicity would likely benefit from *at-risk autonomous* attachment specific intervention, along with an educational component as previously described, and family treatment that included an educational component that increased awareness about mental retardation.

Being able to more easily identify attachment representations of at-risk adolescents would assist practitioners in diagnosis and treatment planning. The findings in this study provide support for the use of family drawings as a way to differentiate among attachment representations. It is recommended that future research that uses this instrument include three independent raters and a training session as utilized in this study.

5.5 *Limitations*

There were two limitations identified in this study (a) the inability to cross-validate attachment classification differentiation using the FDARF with another valid and reliable instrument (e.g., AAI); and (b) the inability to interview the at-risk adolescents to explore their degree of resolution related to previous losses and trauma. It is suggested that this two limitations be addressed in future research studies.

5.6 *Future Research*

It is suggested that future research, which includes an additional method (e.g.,

AAI) to differentiate among attachment classifications along with the FDARF, be engaged in to further explore the validity and reliability of the FDARF. In this study, preliminary support was found for continuing research to explore the possible relationship between emotional intelligence and attachment classifications. It is also suggested that future research be engaged in to explore the role resolution of previous loss or trauma has in the development of attachment representations held by at-risk adolescents, and to determine where, on the attachment continuum, *at-risk autonomous* adolescents might be situated in relationship to adolescents identified with unresolved attachment. And finally, it is suggested that future research be initiated to determine if the potentially traumatizing life event of experiencing "physical abuse by a parent, caregiver, or family member" has a statistically significant relationship with attachment classifications within other populations.

Chapter Six

Conclusion

Research suggests secure attachment plays a significant role in contributing to overall human emotional, psychological, and physiological well-being (Bowlby, 1969/1982, 1973, 1980; Egeland & Carlson, 2004; Goldberg, 2000; Schneider-Rosen et at., 1985; Waters et al., 1991) across the lifespan (Ainsworth, 1991; Armsden & Greenberg, 1987; Rosenstein & Horowitz, 1996; Schore, 2003; Weiss, 1982; Wilkinson & Walford, 2001). It has been suggested that more research is needed to enhance understanding of the role attachment plays in psychosocioemotional development during the life stage of adolescence (Cooper et al., 1998; del Carmen & Huffman, 1996; Main et al., 1985; Waters et al., 2002). This exploratory research study focused on some at-risk adolescents to (a) identify the prevalence rate of secure and insecure attachment classifications; (b) differentiate among secure and insecure attachment classifications; (c) identify possible attachment classification related etiological pathways; d) explore potential relationships among attachment classifications, comorbid psychological diagnoses, measured emotional intelligence, measured cognitive intelligence, gender, age, birth order, and ethnicity; and (e) explore the use of family drawings to differentiate among attachment representations.

Bowlby (1969/1982), the originator of attachment theory, suggested that there is a relationship between social development and a complex matrix of behaviour, affect, and cognition that determines how a person ensures that his or her attachment

needs are met. This complex matrix comprises a person's attachment related internal working model which initially develops in childhood based on the relationship between the child and his or her caregiver and, likely, genetically based predispositions (Goldberg, 2000). It has been proposed that attachment may be an ongoing process that organizes and reorganizes as a person moves through developmental stages (Greenspan & Lieberman, 1988). Adolescence is a challenging life stage in which successful psychosocioemotional development is required to remain on a normative developmental path into early adulthood. Progression through adolescence is characterized by the development of identity and increased intimacy with peers (Erikson, 1963), and the accompanying challenges.

Previous research (Allen & Land, 1999; Armsden & Greenberg, 1987; Bostik, 2003; Cooper et al., 1998; Vivona, 2000; Weiss, 1982) has provided growing evidence that attachment plays an important role in how successfully an adolescent meets the developmental milestones during the life stage of adolescence. Though the basis of an internal working model tends to persist across the lifespan, an internal working model can change noticeably due to environmental changes, traumatizing life events, or chaotic home environments. Previous research (Hamilton, 2000; Waters et al., 2000; Weinfield, Sroufe, & Egeland, 2000) has found secure attachment can change to insecure attachment when a person's attachment system becomes overwhelmed due to cumulative potentially traumatizing life events, but it has been unclear as to when and how this happens. It is possible the findings in this study have identified a time along

the developmental trajectory of some at-risk adolescents when a change from secure to insecure attachment was at-risk for occurring, and some of the risk factors that became evident during this time. For both research and praxis purposes, it has been suggested that at-risk adolescents who have been identified with an autonomous attachment representation and a high percentage of risk factors, that would otherwise be expected to be found among at-risk adolescents who had been identified as insecurely attached, be identified with an *at-risk autonomous* attachment classification.

All of the at-risk adolescents in this research study had experienced at least one early potentially traumatizing life event and some had experienced as many as twelve early potentially traumatizing life events by the time they were admitted into the organization. Over one-third of the at-risk adolescents in this study were identified with a developmental disability. Eighty-eight percent of the at-risk adolescents in this study created a family drawing that was rated insecure. All three factors placed the adolescent in a disadvantaged position to successfully meet the developmental milestones inherent in adolescence and increased the adolescents' vulnerability for developing psychopathology (see Figure 11). Almost all of the at-risk adolescents in this study received either an Axis I or Axis II diagnosis, or a diagnosis from both Axis I and Axis II. The findings in this study strongly suggest a need to provide at-risk adolescents with attachment specific interventions, and in some cases family therapy and bereavement counseling. The focus of some of the activities that could be included in attachment specific interventions and educational components have been discussed.

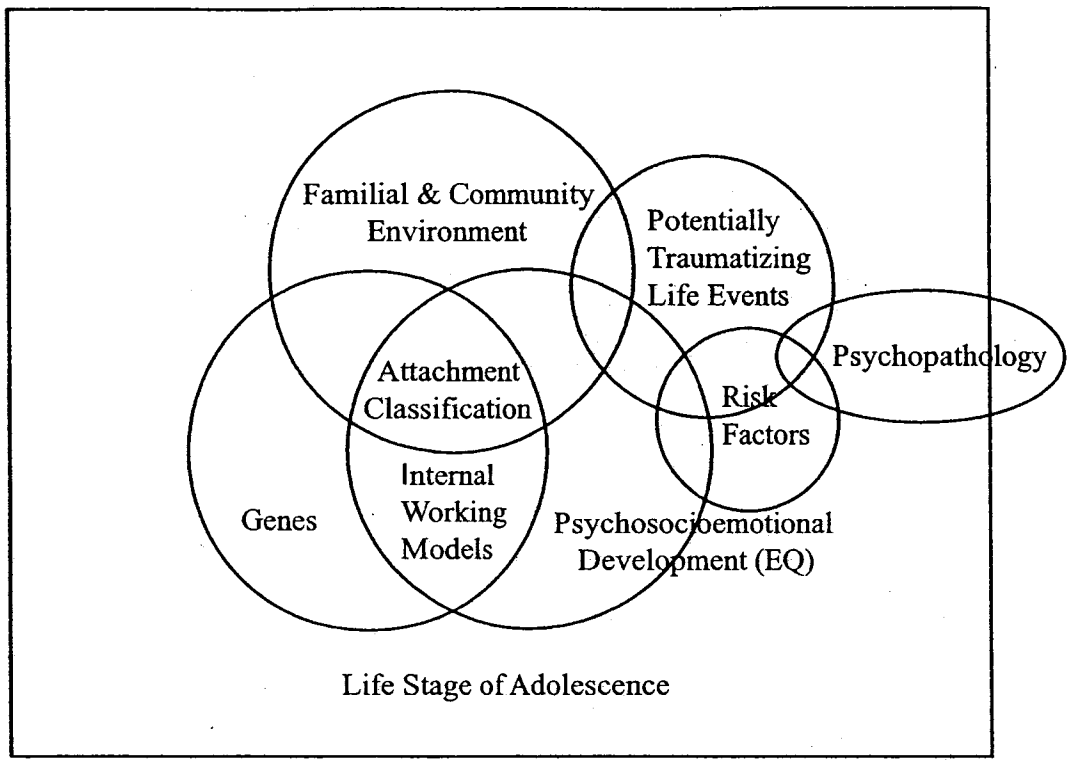

Figure 11. Synergistic interplay of genes, environment, development, life events, risk factors, and psychopathology in adolescence.

Bowlby (1969/1982) suggested that there are not individual differences in the motivational strength for attachment, rather there are individual differences, based on previous experiences with caregivers, in how affective, cognitive, and behavioural processes become organized to meet the biological need for attachment. Given that metacognition develops during adolescence and attachment internal working models become more prominent during this life stage due to the need to develop identity and intimacy with peers, adolescence is likely an opportune time to include attachment related interventions in treatment planning. This has recently been supported through

research (Blakemore & Choudbury, 2006), using functional Magnetic Resonance Imaging (fMRI), that has found evidence to suggest that specific changes to the neural architecture of the brain occur during the developmental stage of adolescence. The findings from this research study suggest that all at-risk adolescents would likely benefit from attachment specific interventions, although, it may be particularly important, from a prevention perspective, to ensure that those at-risk adolescents who are identified as *at-risk autonomous* be provided with attachment specific intervention so as to prevent the possibility of a change from autonomous/secure to insecure attachment as they move into early adulthood.

So as to ensure that attachment specific interventions are effective, it is advised that the practitioner determine the attachment representation held by the at-risk adolescent. In adolescence attachment patterns are not identified by observing behaviours, as is the case in childhood, but rather in adolescence attachment representations are differentiated by accessing internal working models. Accessing an internal working model is complex and instruments and methods are still being developed and refined for this purpose. In this study, the Family Drawing Attachment Rating Form (FDARF) was developed, based on previous research findings (Fury et al., 1997; Grossmann & Grossmann, 1991; Madigan et al., 2003; Pianta & Longmaid, 1999), to differentiate among attachment representations through reanalysis of the adolescents' family drawings. Corollary findings and strong inter-rater agreement provided enough support for the data gathered using this instrument to be viewed as

valid and reliable. Though additional research is needed to further explore the validity and reliability of the FDARF, the findings from this research study add to growing support for the use of family drawings to differentiate among attachment classifications, which has implications for praxis. The development of an instrument that will be relatively easy and cost effective to administer will provide practitioners with a more viable way, than is currently available, to identify attachment representations. This will then open up the possibility of developing attachment specific interventions based on the client's specific attachment needs.

This research study conducted original research that explored the possibility of relationships among emotional intelligence, and attachment classifications, cognitive abilities, and comorbid psychological diagnosis. Socioemotional development is difficult to measure in research as the constructs are difficult to capture and in flux as development progresses (Weinfield et al. 1999). The relatively new construct of emotional intelligence (Salovey & Mayer, 1990) includes aspects related to attachment. This findings in this study provided preliminary support for continued exploration of the potential relationship between emotional intelligence and attachment representations.

Given its complexity, attachment theory is challenging to study. This research study has gathered data about some at-risk adolescents which included attachment classifications, possible attachment classification related etiological pathways, measured affect regulation and cognitive abilities, and comorbid psychological

diagnoses. It is hoped that this new knowledge will, in some small way, assist practitioners within the field of school psychology by informing attachment related diagnosis and intervention during the life stage of adolescence.

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Appendix A

Family Drawing

Attachment Rating Form (FDARF)

Sonia A.C. Sobon, Ph.D.

Name or ID#: _____ **Assessment Date:** _____

Rater's Name: _____ **Date Rated:** _____

Modified and Expanded Family Checklist of Signs (Fury, Carlson, & Sroufe, 1997; Kaplan & Main, 1986; Madigan, Ladd, & Goldberg, 2003; Pianta & Longmaid, 1999)

Autonomous (Secure) **Attachment Signs:**

- ☐ overall impression: family (or adolescent) portrayed as happy, comfortable with others, realistic, solid, centred on paper
- ☐ firm, open armed embracing stance
- ☐ grounded figures
- ☐ complete figures
- ☐ individual figures

Sub-Total = _____

General Insecure (Preoccupied/Resistant, Dismissing/Avoidant) **Attachment Signs:**

- ☐ lack of background detail
- ☐ incomplete figures
- ☐ mother not feminized
- ☐ males and females undifferentiated by gender

Sub-Total = _____

Preoccupied (Resistant) **Attachment Signs:**

- ☐ overall impression: emphasis on vulnerability, worried, fearful
- ☐ figures not grounded (floating on page) *
- ☐ figures crowded or overlapping *
- ☐ encapsulation of one or more figures *
- ☐ figures separated by barriers *
- ☐ lack of individuation *
- ☐ exaggeration of soft body parts (e.g., bellies) *
- ☐ unusually small figures *
- ☐ unusually large figures
- ☐ extreme proximity of figures
- ☐ figures on corner of page
- ☐ exaggeration of hands/arms

Dismissing (Avoidant) **Attachment Signs:**

- ☐ overall impression: happiness or invulnerability; impression of isolation
- ☐ arms downward and close to body (less than 45 degrees from body) *
- ☐ exaggeration of heads *
- ☐ exaggerated facial features *
- ☐ neutral or negative facial affect *
- ☐ adolescent and mother positioned far apart on the page
- ☐ omission of mother or adolescent
- ☐ arms absent
- ☐ automatic smiles
- ☐ lack of colour
- ☐ disguised family members

Sub-Total = _____

Unresolved (Disorganized) **Attachment Signs:**

- ☐ overall impression: ominous, foreboding elements, irrational, or disorganized
- ☐ false starts, scratched out figures, or both
- ☐ unfinished objects or figures
- ☐ scrunched figures
- ☐ unusual signs, symbols, or scenes
- ☐ over bright, excessive sweetness

Sub-Total = _____

Total = _____

Family Drawing Global Rating Scales (Fury et al., 1997; Madigan et al., 2003)

Vitality/Creativity - (autonomous/secure) emotional investment in drawing reflected in embellishment, detail, and creativity

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

Family Pride/Happiness - (autonomous/secure) sense of belonging to and happy in the family group *

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

Global Pathology - (insecure) degree of negativity based on: organization, completeness of figures, colour, detail, affect, and background scene *

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

Vulnerability - (preoccupied/resistant) vulnerability and uncertainty based on size distortions, placement of figures on the page, and exaggeration of body parts *

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

Role Reversal (preoccupied/resistant) - suggestions of role reversal based on relations of size or roles of figures *

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

Emotional Distance/Isolation (dismissing/avoidant) - loneliness based on disguised expressions of anger, neutral or negative affect, distance between mother and adolescent *

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

Tension/Anger (dismissing/avoidant) - based on figures that appear constricted, closed, without colour or detail, careless in appearance, or scribbled/crossed out *

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

Bizarreness/Dissociation (unresolved/disorganized) - underlying disorganization expressed by unusual signs, symbols, fantasy themes

1	2	3	4	5	6	7
None	Almost None	Not Much	Some	A Lot	Almost Prominent	Prominent

* found to be significantly associated ($p < .05$) with the attachment classification designation by one or more research study (Fury, Carlson, & Sroufe, 1997; Madigan, Ladd, & Goldberg, 2003; Pianta & Longmaid, 1999)

Modified and Expanded Family Checklist of Signs

Autonomous (Secure) Attachment Signs:	Sub-Total = _____
General Insecure Attachment Signs (Preoccupied/Resistant, Dismissing/Avoidant):	Sub-Total = _____
Preoccupied (Resistant) Attachment Signs:	Sub-Total = _____
Dismissing (Avoidant) Attachment Signs:	Sub-Total = _____
Unresolved (Disorganized) Attachment Signs:	Sub-Total = _____
	Total = _____

Family Drawing Global Rating Scales

Vitality/Creativity (autonomous/secure)	Total = _____
Family Pride/Happiness (autonomous/secure)	Total = _____
Global Pathology (insecure)	Total = _____
Vulnerability (preoccupied/resistant)	Total = _____
Role Reversal (preoccupied/resistant)	Total = _____
Emotional Distance/Isolation (dismissing/avoidant)	Total = _____
Tension/Anger (dismissing/avoidant)	Total = _____
Bizarreness/Dissociation (unresolved/disorganized)	Total = _____

Use the following guidelines (Kaplan & Main, 1986, as cited in Pianta & Longmaid, 1999) to determine a Global Clinical Impression rating:

- The overall impression of the family drawing of children who have been identified with **autonomous/secure** attachment is that of a family or child who is essentially happy. These drawings tend to include human figures interacting with one another and contain realistic elements. The overall image portrayed is one of comfort with others, confidence and realism.
- The overall impression of the family drawing of children who demonstrate **preoccupied/resistant** attachment is one of vulnerability or compromised self-efficacy . The child appears vulnerable, alone and isolated from the others, or looks fearful or worried.
- The overall impression of the family drawing of children who demonstrate insecure **dismissing/avoidant** attachment is one of an emphasis on invulnerability. Often these drawings portray unrealistic happiness (e.g., all figures have the same large, brightly coloured smile), figures lack individuation (e.g., same size, same shape, same clothing), the child may appear distracted or dissociated. Family members tend to not be interacting with one other.
- The overall impression of the family drawing of children who demonstrate **unresolved/disorganized** attachment is one that depicts ominous or foreboding elements (e.g., blood, dark clouds) or the drawing tends to be uninterpretable, irrational, disorganized, or portrays a sense of confusion. The child may appear fearful.

Global Clinical Impression

Autonomous/Secure__ Preoccupied/Resistant __ Dismissing/Avoidant __
Unresolved/Disorganized__ Not Classified __

Final Clinical Rating

Autonomous/Secure__ Preoccupied/Resistant __ Dismissing/Avoidant __
Unresolved/Disorganized__ Not Classified __

Appendix B
Agreement to Maintain Confidentiality

(Assistants)

Title of Research Study: Attachment of at-risk adolescents: Etiological pathways, emotional intelligence, and comorbidity.

I, _____, an Assistant,
(Print Name)

hereby _____ to maintain confidentiality
(Print "agree" or "do not agree")

about rescored data gathered during the research study facilitated by researcher Ms. Sonia Sobon, a Doctoral Candidate in the Department of Educational Psychology at the University of Alberta. The exception being any necessary discussions with Ms. Sobon that may be required for the completion of this research project. Any secondary data protocols related to this research project that I need to access during the research process will be returned to Ms. Sobon once rescored. While I have the protocols I will store them in a locked metal filing cabinet.

_____
(Signature)

Date signed: _____

For further information contact: Ms. Sonia Sobon (Researcher) at 492-3746 (U of A) or sonia.sobon@ualberta.ca or Dr. Dick Sobsey (Supervisor) at 492-3755 or dick.sobsey@ualberta.ca. Return form to Ms. Sobon at U of A, EDN 6-103, Edmonton, T6G 2G5.

Appendix C

Attachment Theory Research: Instructions for Rating a Family Drawing

Sonia A.C. Sobon, Ph.D.

John Bowlby (1988), a psychoanalyst, developed the theory of attachment. Bowlby (1969/1982) suggested that there is a relationship between social development and a complex matrix of behaviours, cognitions, and feelings that determine how a person ensures that his or her attachment needs are met. Attachment theory suggests that when a threat to survival becomes imminent, a person's attachment system is activated, and if the threat exceeds the person's resources, attachment behaviours toward an important caregiver are exhibited. Attachment is like a type of motivation that guides and propels behaviours. Underpinning attachment are biological, emotional, and cognitive aspects that influence the strategies for fulfilling the attachment need (Barnett & Vondra, 1999). The function of attachment is to ensure homeostasis with regards to the environment, and it is experienced by the attached person as a psychological bond to the caregiver (Bretherton, 1985).

Attachment occurs when a person "is strongly disposed to seek proximity to and contact with a specific figure and to do so in certain situations, notably when (she or) he is frightened, tired or ill " (Bowlby, 1969/1982, p. 371). Attachment includes an affectional bond which is demonstrated through the expression of positive effect (e.g., bouncing/jumping, smiling, vocalizing, clinging, following) that is initially experienced in the presence of the attachment figure and later represented within internal representations of the caregiver via a psychological tether (Sroufe & Waters, 1977).

Attachment styles develop in early childhood and are influenced by the caregiver-child relationship. Four attachment behavioural patterns or styles have thus far been identified (a) secure, (b) insecure avoidant, (c) insecure resistant (Ainsworth et al., 1978), and (d) insecure disorganized (Main et al., 1985; Main & Solomon, 1990).

The development of **secure** attachment ensures a child has a secure base from which to explore the environment and to return to when feeling threatened (Ainsworth et al., 1978; Belsky & Isabella, 1988; Bowlby, 1988; Greenspan & Lieberman, 1988; Main, 1991; Matas et al., 1978; Radke-Yarrow, 1991; Spieker & Booth, 1988). The caregiver provides protection as well as a buffer to distress and anxiety (Barnett & Vondra, 1999). The securely attached child believes his or her caregiver will be available and responsive to his or her attachment needs (Barnett & Vondra, 1999). She or he demonstrates positive expectations of self and others (Erickson et al., 1985) and is more likely to approach situations with confidence and be able to effectively handle stressful situations on his or her own or by asking for help (Bowlby, 1973). Secure attachment facilitates a feeling of confidence and competent engagement with others.

In contrast, the insecurely attached child views the world as unpredictable and comfortless and tends to withdraw or be confrontational (Bowlby, 1973). Most often insecure attachment behavioural patterns develop when a person interacts with a caregiver who intermittently or chronically is insensitive or unable to meet attachment needs. Children exhibiting insecure **resistant** attachment behaviour are uncertain as to whether or not their caregiver will be available or responsive to their demonstration of attachment behaviours (Ainsworth et al., 1978). They tend to oscillate between

seeking caregiver closeness and resisting such contact, and seeking some minimal caregiver responsiveness by continually activating the attachment system (Barnett & Vondra, 1999). Mothers of children who exhibit insecure resistant attachment behaviour tend to be less responsive to the attachment behaviours of their children, but more responsive than mothers of children who exhibit insecure avoidant attachment behaviour. Caregivers of children who exhibit resistant attachment behaviour have been observed to be passive, unresponsive, ineffective in responding to their child's attachment needs (Barnett & Vondra, 1999), and inconsistently available (Egeland & Sroufe, 1981). Due to this uncertainty the child is not able to utilize the caregiver as a secure base, and as a result experiences compromised self-efficacy (Ainsworth et al., 1978).

Children who exhibit insecure **avoidant** attachment behaviour expect to be rejected when they engage in attachment behaviours (Ainsworth et al., 1978; Barnett & Vondra, 1999; Bowlby, 1988). They learn to reduce their attachment needs by becoming distracted or dissociated (Barnett & Vondra, 1999). Caregivers of children who exhibit avoidant attachment behaviour are often active, intrusive, over stimulating, emotionally unavailable or physical rejecting (Ainsworth et al., 1978; Main, 1977; Smith & Pederson, 1988). Main (1977) observed mothers of children who exhibited an insecure avoidant attachment behavioural pattern to be rejecting of their child's desire for close body contact and found this type of contact aversive. As a result, these children likely determined that close body contact with their mothers was an unpleasant experience. Main (1977) found that these mothers tended to lack

emotional expression, and hypothesized this was likely due to their own effort to control their expression of anger.

Children who exhibit **disorganized** attachment behaviours (Main & Solomon, 1990) appear to lack or collapse organizational strategies for getting their attachment needs met when placed under stress (Lyons-Ruth, 1996; Lyons-Ruth & Jacobvitz, 1995). This attachment behavioural pattern does not suggest mental or behavioural disorganization. Many children who exhibit disorganized attachment behaviours appear as threatened by both the caregiver and the environment (Main & Solomon, 1990). In some cases, the caregiver has been found to be the source and the solution to the child's experience of fear, which creates a dilemma for the child as to whether to approach or flee. This dilemma exacerbates the already stressful situation for the child and can result in a demonstration of contradictory behaviours such as freezing or other debilitating behaviours that suggest fear or confusion (Ainsworth & Eichberg, 1991; Barnett & Vondra, 1999; Soloman & George, 1999; van IJzendoorn & Bakermans-Kranenburg, 2003; Waters & Valenzuela, 1999). Caregivers of children who exhibited disorganized attachment behaviours often suffered from unresolved loss or trauma (e.g., death of their caregiver, physical or sexual abuse) (Main & Hess 1990; Main & Solomon, 1990), experienced marital discord, depression, or dissociation (van IJzendoorn et al., 1999). It has been suggested that the caregiver's unresolved trauma may result in frightened or frightening behaviour (Main & Hess, 1990; Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999) which contributes to the child's development of a disorganized attachment behavioural pattern (van IJzendoorn et al., 1999). In contrast to avoidant or resistant attachment behavioural patterns, where the

child likely experiences fear related to his or her inability to gain comfort from the caregiver in stressful situations, individuals who exhibit disorganized attachment behaviours likely experience fear in direct relationship to the caregiver (Main & Hess, 1990; van IJzendoorn; et al., 1999).

In adolescence and adulthood, attachment behavioural patterns are not usually identified by observing behaviours, as is the case in childhood, but rather in adolescence and adulthood attachment behavioural patterns are differentiated by accessing internal representations of attachment or attachment related internal working models. These models are "conceived as 'operable' models of self and attachment partner, based on their joint relationship history. They serve to regulate, interpret, and predict both the attachment figure's and the self's attachment related behavior, thoughts, and feelings" (Bretherton & Munholland, 1999, p. 90). Given the complexity of accessing internal working models and given that instruments and methods to access internal working models are still being developed and refined, obtaining attachment classifications (i.e., autonomous, preoccupied, dismissing, unresolved), that are accepted as being similar to childhood attachment behavioural patterns (i.e., secure, resistant, avoidant, disorganized), is currently the approach taken to identify and differentiate attachment behavioural patterns in adolescence and adulthood.

Research (Kaplan & Main, 1986) suggests a person's attachment organization, or internal working models, may be accessed via representations of family relationships in drawings. Kaplan and Main (1986) suggest these representations can be interpreted through eight constructs or dimensions 1) individuation of figures, 2) degree of completeness of figures, 3) size of figures, 4) degree of movement of

figures, 5) how centred the figures are on the page, 6) quality of smiles, 7) overall impression of vulnerability, and 8) overall impression of invulnerability. This list of dimensions has been expanded, and these dimensions or constructs have been linked to discrete features. **The first step in rating the drawings is to identify the presence or absence of these discrete features (i.e., Modified and Expanded Family Checklist of Signs).** These discrete features are identified on the rating sheet and are grouped under the four attachment classifications (i.e., autonomous/secure, preoccupied/resistant, dismissing/avoidant, unresolved/disorganized) and one general insecure classification. Check off the boxes of the discrete features that you see in the drawing, total the number of check marks under each classification and transpose the numbers to the last page of the rating sheet.

Step two in rating the drawings is to determine global ratings based on the Family Drawing Global Rating Scales. These scales, which are on the rating sheet, are to be rated from 1 (none) to 7 (predominant) based on your overall impression of the drawing. Eight aspects are represented 1) vitality/creativity, 2) family pride/happiness, 3) global pathology, 4) vulnerability, 5) role reversal, 6) emotional distance/isolation, 7) tension/anger, and 8) bizarreness/dissociation. Each feature is described on the rating sheet. Transpose the final rating for each of the eight aspects to the last page of the rating sheet.

Step three is to arrive at your overall clinical impression of the drawing. Use the following guidelines (Kaplan & Main, 1986, as cited in Pianta & Longmaid, 1999) to determine this rating.

- The overall impression of the family drawing of children who have been identified with **autonomous/secure** attachment is that of a family or child who is essentially happy. These drawings tend to include human figures interacting with one another and contain realistic elements. The overall image portrayed is one of comfort with others, confidence and realism.
- The overall impression of the family drawing of children who demonstrate **preoccupied/resistant** attachment is one of vulnerability or compromised self-efficacy . The child appears vulnerable, alone and isolated from the others, or looks fearful or worried.
- The overall impression of the family drawing of children who demonstrate insecure **dismissing/avoidant** attachment is one of an emphasis on invulnerability. Often these drawings portray unrealistic happiness (e.g., all figures have the same large, brightly coloured smile), figures lack individuation (e.g., same size, shape, clothing), the child may appear distracted or dissociated. Family members tend to not be interacting with one other.
- The overall impression of the family drawing of children who demonstrate **unresolved/disorganized** attachment is one that depicts ominous or foreboding elements (e.g., blood, dark clouds) or the drawing tends to be uninterpretable, irrational, disorganized, or portrays a sense of confusion. The child may appear fearful.

The **final step is to determine a Final Clinical Rating based on all of the previous scores**.