Role of Protection

The Differential Role of Protective Factors in
Pure versus Mixed Syndrome Childhood Behavioural
Problems

Lori A. Beckstead

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Abstract

The incidence and implications of 'pure' and co-occurring internalizing and externalizing behavioural problems in a sample of 107 male day treatment students (M age 13.06 years) were examined. Constructs of protection from further adjustment problems, or *protective factors* in the area of individual, familial and social/contextual domains were also examined. The outcome variable was successful reintegration to community school. There was a trend for the comorbid students to have the least successful outcomes, and internalizing students to have the most. Protective factors in all domains were found to significantly predict the outcome variable. These main effect variables functioned as *compensatory factors*. Significant group $\times$ protection interactions were also found for IQ and responsiveness. However, for internalizers, IQ functioned as a *vulnerability factor*, while for externalizers, responsiveness was a *moderator factor*. Implications for prevention and intervention in children's mental health are discussed.

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Emotional and behavioural problems in childhood are very common. Many children show isolated psychological or psychiatric upset at some point in their lives, with ephemeral periods of emotional disturbance or behavioural difficulties (Rutter, 1990). Researchers have found that the rates of emotional and behavioural problems in children have increased since the 1980's (Achenbach & Howell, 1993). Many of the risk factors for these disturbances seem to emphasize certain environmental influences (Overbeek, Vollebergh, Meeus, Engels & Luijpers, 2001). It has been widely demonstrated that there is great variation in children's responses to their environments, and many escape dysfunction (Harrington, 2001; Rutter, 2000). Whereas some young people appear to desist their problem behaviour or emotional dysfunction without need for formal intervention, others experience more pervasive and profound patterns of what is now known as *developmental psychopathology* (Harrington, 2001).

Substantial research in the area of developmental psychopathology has identified multiple individual, familial and social/contextual risk factors for children (e.g., Becker & Luthar, 2002; Buchanan & Flouri, 2001; Luthar, 1991, 1993; Rutter, 1974, 1975, 1988, 1990, 2000).

Additionally, results from the early body of evidence indicated that many children similarly exposed to risk for psychopathology nevertheless escaped its impact or consequences (Garmezy, 1985; Rutter, 1987; Werner & Smith, 1982). This led researchers to articulate variables that might serve to insulate, moderate or buffer the effects of risk. These *protective factors* have been extended from psychopathology to risk-taking behaviours such as substance use, delinquency, fighting or premature sexual intercourse (Fitzpatrick, 1997; Hawkins, Catalano & Miller, 1992; Jessor, 1993; Newcomb & Felix-Ortiz, 1992). Interest has also been seen in protection against academic failure (Becker & Luthar, 2002; Bowen & Bowen, 1998; Connell, Spencer & Aber, 1994; Finn & Rock, 1997; Gutman & Midgley, 2000; Hawkins, Doueck & Lishner, 1988; Jessor et al., 1998) or risky health practices such as lack of seatbelt use (Jessor et al., 1998a).

Researchers have been concerned with the heterogeneous expression of child and adolescent problem behaviour, but most studies of risk and protection have focused on externalizing rather than internalizing problem behaviours (Dekovic, 1999). Though researchers have begun to study individuals with mixed profiles, (both symptoms of externalizing and internalizing behaviours or *comorbidity*),

few have examined the differential role of protection in 'pure' versus 'mixed syndrome' child behavioural problems (Dekovic, 1999).

The primary goal of this study was to examine the incidence and implications of pure- versus mixed-syndrome behavioural problems in a sample of children and adolescents in a day treatment academic program. Additionally, constructs of protection from risk were explored, including the differential role of factors within individual, familial, and social/external domains (Garmezy, 1983). Finally, the differential importance of protective factors for internalizing, externalizing and mixed-syndrome behavioural problems were examined.

The remainder of the chapter that follows organizes and critically reviews contemporary study of behavioural and emotional problems, and individual risk and protective factors and their mechanisms. Historical views of developmental psychopathology are presented, along with more recent evidence of comorbidity. The literature regarding protective factors or *resilience* is also reviewed. Finally, specific research questions and hypotheses are presented.

Overview of Developmental Psychopathology

During the past fifteen years, there has been a remarkable increase in data on child and adolescent disorders based on general population studies (Nottelmann & Jensen, 1995). Results from most epidemiological studies estimate the prevalence of severe behavioural dysfunction in children at the range of 5 - 15% of the population (Rutter, 1990), although other results indicate much higher prevalence (Elliot, Huizinga & Menard, 1989; Fitzpatrick, 1997).

For example, researchers in the Ontario Child Health Study reported that among children 4 to 16 years of age, the prevalence rate of (one or more of) conduct disorders, hyperactivity, emotional disorders, and somatization was 18.1% (Offord et al., 1987, 1989). These youngsters displayed symptoms of sufficient severity to interfere with normal functioning, and which may have required treatment interventions. Symptoms which provoke more concern do not seem to be qualitatively different from so-called normal transient dysfunction. However, they are quantitatively distinct, and it is often this multiple symptomatology that causes mental health or psychiatric disorders to be diagnosed (Rutter, 1990, 2000).

These salient symptoms (such as anxiety, depression, phobias, withdrawal, fighting, defiance, impulsivity or hyperactivity) serve several key functions according to Kanner (1957; in Rutter, 1990): as an admission ticket to treatment planning; as a signal to others who should be concerned; as a safety valve (a maladaptive defence mechanism) for the individual, such as defiance in response to an intolerable situation; as a problem-solving means, such as avoidant behaviour to deal with anxiety; and as a nuisance, for example when fighting is a salient annoyance within a classroom setting. The primary focus of developmental psychopathology has been the systematic organization of these behavioural and emotional symptoms and intervention within them.

The field of developmental psychopathology involves an integration of basic and applied research (Compas, Hinden & Gerhardt, 1995). The basis for this work has evolved out of interdisciplinary research from epidemiology, genetics, psychiatry, psychology, neurosciences and social work (Harrington, 2001). Developmental psychopathologists examine the dysfunctional emotional and behavioural problems in children and adolescents, which appear to be influenced by a "complex interplay of multiple risk and protective factors" (Harrington, 2001, p. 93). Pioneer

researchers such as Michael Rutter have argued that no one factor can "cause" a poor child outcome (Rutter, 1979). Rather, it appears that the accumulation of risk (and protective) factors is predictive of negative and positive effects (Cummings, Davies & Campbell, 2000; Jessor et al., 1995; Rutter, 1979, 2000). Most disorders represent this cumulative effect of environmental and genetic risks.

The roots of childhood psychiatric symptoms appear to lie not only within the child but additionally within his/her family, schooling, and social environment (Rutter, 1990, 2000). Using a multidisciplinary approach, these symptoms or disorders have been regarded not as disease mechanisms, but as multifactorily-determined processes. In other words, in developmental psychopathology it is often very difficult to reveal causal patterns (as in medicine), as there are usually many.

More success is achieved by examining the associations between contributing factors to the behaviour or emotional disturbance, or the "dynamic mediating processes that account for patterns of adaptation and maladaptation over time" (Cummings et al., 2000, p. 124). This has generally been the purpose behind multi-axial approaches in psychiatry such as the DSM-IV (APA, 1994) which place symptomatology within other axes of intellectual

functioning, psychosocial stress, comorbidity of conditions and contextual factors.

There has been much interest in potential risk factors for developmental psychopathology. Early researchers were concerned primarily with static factors/markers that served as predictors of negative outcomes (Compas et al., 1995; Cummings et al., 2000). Although risk factors or markers serve an important function in the identification of individuals with a high probability of subsequent problems, they do less to help explain how or why these problems develop. For this reason, researchers have turned to the examination of more complex risk processes or mechanisms that account for negative outcomes in childhood and adolescence (Compas et al., 1995; Cummings et al., 2000; Rutter, 2000).

One way to conceptualize risk processes is to examine the chain or sequence of events that unfold because of exposure to certain individual risk factors (Cummings et al., 2000; Quinton & Rutter, 1988). For example, the impact of stressful major life events on child maladjustment seems mediated by more proximal (or contiguous) processes in the child's social environment. Specifically, adverse events are related to emotional and behavioural difficulties primarily as a function of the ongoing chronic stresses and

strains to which they give rise (Compas et al., 1989a; Cummings et al., 2000). For example, stressful events in a child's life such as parental divorce, personal illness or moves contribute to short-term emotional distress. However, the long-term impact is more the result of chronic disruptions, demands and strains that are consequently created in the child's social environments (Compas, 1994; Cummings et al., 2000).

The effects of exposure to chronic adversity also appear to be mediated by the characteristics of the family environment and chronic stress processes. For example, in one study, economic stress had a direct impact on the quality of marital relationships and in turn disrupted parent-child relations, leading to more adolescent distress (Coie, Lochman, Terry & Hyman, 1993).

The identification of risk (and resiliency) factors and processes is of necessity closely linked to the correct identification of developmental pathways. For example, Moffitt's model (1993) of a distinct pathway to antisocial behaviour hypothesizes that early life-risk factors are associated with more chronic problems, whereas more contemporary risk factors are associated with adolescent-limited problems. The gradual emergence of *integrative models* that consider pathways of development as a function

of risk (and protective) mechanisms have had three major benefits for the psychology of children and adolescents (Compas et al., 1995).

First, these models have facilitated interdisciplinary research which essentially developed the field of developmental psychopathology. Second, they created recognition of the importance of adhering to a developmental perspective that captures both the continuities and discontinuities of individual development. Most children, for example, traverse childhood and early adolescence without major psychological or behavioural problems. Finally, these models capture the transactional nature of development and behaviour in which both the person and context as well as their mutual influences on one another are examined. In developmental psychopathology, the most useful process models take the form of *transactional models* (Cummings et al., 2000).

Simple main effect models of research in which aspects of the person or environment are given precedence over the other may then be insufficient to explain the complexities of different developmental pathways (Compas et al., 1995; Cummings et al., 2000). Although many childhood problems are inter-related, they may be the result of separate risk mechanisms. For example, depression and aggression may co-

occur but due to separate risk processes (Downey & Coyne, 1990). Marital conflict or discord may 'cause' childhood aggression, while parental depression may 'cause' depression in offspring. However, marital discord and parental depression are highly intercorrelated but may function as distinct but correlated risk factors for separate, though correlated outcomes (Compas et al., 1995). These inter-correlations seem very common in the study of individual psychosocial risk factors and may be overlooked without a review of the underlying mechanisms.

Rutter (2000) identified four risk mechanisms 'messages' which when overlooked in research, have created some scepticism in the field. The first message concerns the study of origins of individual differences in environmental risk exposure. Webster-Stratton (1998) concluded that environmental factors in combination with within-person factors account for the heterogeneity of outcomes for children with behavioural and emotional problems. Rutter (2000) argued that genetic factors very likely play a role in this variation of individual response following risk exposure, though biases in psychosocial research often downplay the role of genetic mediation. Sources of individual differences derive not only from individual but also social influences. Additionally, the

experiences people bring about through their own actions may also constitute a major risk or protective influence on subsequent behaviour.

The next risk message involves the importance of differentiating between *risk indicators* (features that index an increase in risk but do not necessarily reflect the processes that mediate the risk) and *risk mechanisms*. For example, though loss of a parent (through separation or death) is a risk indicator, it does not usually cause an important increase in risk. Results from some studies found that separation experiences were a risk only if they co-occurred with family discord and disorganization (Cummings et al., 2000).

As part of a broad endeavour to identify these risk mechanisms, researchers have suggested a distinction between *proximal* and *distal* risk factors. Proximal factors have been defined as those variables which are fairly directly involved in the mediation of risk for psychopathology. Examples include poor parenting, family history of mental health problems, or loss of close friendships. Distal factors, rather, incur a risk though not directly. They may, though, be catalytic for the individual, setting in motion an indirect 'casual chain' reaction (Rutter, 2000). Poverty, for example, does not

mediate risk of psychopathology but it is crucially important because it may frustrate good parenting and increase the likelihood of adversity (Rutter, 2000).

This approach implies that many risks in the past have been regarded as risk 'circumstances' but which evidence indicates the negative effect (risks) do not derive from the feature itself but are present only when associated with other factors. For example, results from early research suggested that maternal employment or group childcare were risk factors for childhood behavioural problems (Hoffman & Youngblade, 1999; NICHD, 1999). It is now accepted that these 'risks' only become a problem when associated with poor quality parenting (Rutter, 2000).

The third risk message, previously described, regards the huge individual differences in children's responses to all kinds of stressful experiences which gave rise to the "simplistic notion that some children were invulnerable" (Rutter, 2000, p. 392). The implication seemed to be that resistance to stress and adversity resided within the individual and was a *general quality* (Rutter, 2000). This has been contradicted through empirical research (see Luthar, Cicchetti & Becker, 2000; Rutter, in press). What has come to be recognized is that a more dynamic, process-

oriented view was necessary, and invulnerability was replaced by *resiliency*.

Extant resilience research confirmed that the effects of any one stress experience, if it really occurred in isolation, were small (Rutter, 2000). Primary risks are from a cumulative combination of negative life experiences, a view expressed in the commonly used moderator model, the *synergistic or multiplicative effects model* (Cummings et al., 2000; Rutter, 1983). A classic study (Rutter, Tizard, Yule, Graham & Whitmore, 1977) found that the risk for psychopathology in children exposed to any one of six family risk factors (e.g., family discord, maternal psychiatric disorder, or family dissolution) in isolation was comparable to those who experienced no risk factors. However, experiencing two or three risk factors increased the incidence of psychiatric disturbance three-fold (6% versus 2%), while those with four risk factors had an another exponential increase in risk (20%).

Part of the individual variation following risk exposure also may lay in differences in the extent or duration of risk experiences. Moreover, part of the variation may be artifactual. In general terms, variations in individual outcomes are a consequence of many influences that have no relation with the risk experience.

Other features associated with variations in resilience include genetic vulnerability, temperamental characteristics, cognitive set, coping patterns and other experiences which occur before and after risk being investigated (Rutter, 2000). Thus, escape from adversity can not be considered a general feature, as an individual may be resistant to one form of negative outcome but yet vulnerable to others (Rutter, 2000).

The final risk message involves the consideration of the effects of risk experiences in an organism. For example, if the negative effects of adverse experiences persist over time, it is important to identify the mechanisms by which the persistence comes about (Rutter, 2000). Is the persistence due to initial stress which led to altered patterns of interpersonal interaction that brought further negative experiences, or do negative experiences alter individual's cognitive set or style of emotional/cognitive processing (Dodge, Pettit, Bates & Valente, 1995)? In general terms, stress may affect the brain's structure and function, or developmental tasks such as attachment to others, which then create vulnerability or susceptibility to further stress or adjustment problems.

Rutter's critique of the risk literature provides a broader appreciation of the extensive body of work devoted

to the study of childhood emotional and behavioural problems. Inherent in this is the further appreciation that we know much less about specific risk (and protective) mechanisms than we may have thought even a few years ago (Rutter, 2000). Researchers have come a long way and still have much to discover about developmental psychopathology.

Most of the interest in this field over the last two decades has been directed towards childhood symptoms within the broad areas of emotional disorders and conduct disorders. *Emotional disorders* have been described as an abnormality of emotions, and include anxiety, fear, depression, and obsessions. *Conduct disorders* are chiefly characterized by abnormal behaviour resulting in social disapproval such as delinquency, fighting, bullying, lying or destructive behaviour (Rutter, 1990). Results from studies suggest that these two overall categories account for the bulk of mental health and psychiatric referrals (Offord et al., 1987; Yule, 1981, in Rutter, Tuma & Lann, 1988).

Symptom and disorder diagnoses prevalence has been studied extensively in the past two decades. A major distinction or dichotomy in this research has been between externalizing problems characterized by conduct symptoms and internalizing problems involving emotional symptoms

(Achenbach & Edelbrock, 1978; APA, 1994; Beck, 1976; Connell & Goodman, 2002; Glick & Zigler, 1990; Loeber & Farrington, 2001; Offord et al., 1987; Offord, Lipman & Duku, 2001; Garmezy & Rutter, 1983).

Externalizing Problems

The cluster of behavioural symptoms classified as *externalizing problems* (considered antisocial 'acting out', turning against others, and expressed in direct actions, Katz et al., 1975, in Glick & Zigler, 1990) may include fighting, aggression, hyperactivity, impulsivity, non-compliance and defiance. Externalizing symptoms have been seen as more difficult and 'crude' problems, with longitudinal courses more severe than for anxiety or depression (Ebata et al., 1990; Robins, 1986). The continuity of externalizing disorders has been well documented in the literature (Buchanan & Flouri, 2001; Farrington, 1995; Fergusson & Horwood, 1998).

Externalizing problems tend to be relatively common, persist over time and often develop into more severe disorders later in life (Champion, Goodall & Rutter, 1995). For example, persistent adult maladjustment and poor social competence are common by-products of these disorders (Garmezy & Rutter, 1983; Loeber, Farrington, Stouthamer-Loeber & van Kammen, 1998). Other research findings,

however, suggest that half of all children with significant behavioural problems recover (Campbell, 1995), a finding that may well be explained by individual risk and protective factors.

This broad group of behaviours includes the psychiatric diagnostic categories of *Attention Deficit Hyperactivity Disorder* (ADHD), *Conduct Disorder* (CD), and *Oppositional Defiant Disorder* (ODD). The prevalence of externalizing or conduct problems have been found to range from 3 - 10% of school aged children for Attention Deficit Hyperactivity Disorder (Barkley, 1990; Offord, Boyle & Racine, 1989; Rief, 1993); 2 - 16% of Conduct Disorder (Barkley, 1997; Kazdin, 1987); and 2 - 16% for Oppositional Defiant Disorder (DSM-IV, APA, 1994). Females have significantly fewer externalizing symptoms generally, often 10 to 1 (Barkley, 1997; Rutter, 1990). Non-compliance or defiance appears to be the most common parental complaint in children's referrals to mental health clinics (Patterson, Reid & Dishion, 1992).

These conduct problems tend to associate together and some researchers feel they segregate from anxiety symptoms (Rutter, 1988). Thus, covariance of symptoms is high. Rutter (1988) concluded, "there is a frequent coexistence of ADHD and CD with each other and other psychiatric

conditions" (p. 378). For example, in some samples as many as 20-50% of children with ADHD may have symptoms of CD/ODD (Barkley, 1990; Biederman, Faraone, Mick & Lelon, 1992; Offord, Lipman, & Duku, 2001; Schachar & Tannock, 1995). Few studies provide evidence of comorbid disorders associated with ODD, perhaps since many researchers combine CD with ODD. One exception is that of Angold & Costello (1996b), which reported low levels of comorbid symptoms from a community sample, including 14% for ADHD. In those referred for CD, as many as 90% experience associated ADHD symptoms (Abikoff et al., 1987, in Abikoff & Klein, 1992). However, studies have described CD symptoms as heterogeneous in nature overall, and others prefer to recognize them as a broad group of externalizing problems under one umbrella (Lahey, Loeber, Burke, Rathouz, & McBurnett, 1980). What is clear is that ADHD is found to influence the development, course, and severity of CD (Loeber et al., 2000). Youth with CD and comorbid ADHD have an earlier age of onset, and symptoms which are much more severe and persistent (Abikoff & Klein, 1992; Farrington, Loeber & van Kammen, 1990; Moffitt, 1990).

Externalizing disorders have been known to be quite stable, though symptoms often peak in teenage years and decrease in the late twenties (Rutter, 1995). Research on

risk mechanisms (especially psychosocial risks) for these and other problems is at a crossroads (Rutter, 2000). Evidence from quantitative genetic research indicates important gene-environment interactions for childhood externalizing behaviours (Rutter, 2000). A host of genetic and biological factors seem important such as complications or trauma in pregnancy or at birth, lead poisoning, diet, parental history of ADHD or CD, and prenatal substance use (Cohen, Adler, Kaplan, Pelcovitz & Mandel, 2002; National Crime Prevention Council, 1995, 1997; Rief, 1993; Rutter, 2000).

Individual risk factors for externalizing problems include characteristics often identified as reflecting 'difficult temperaments', a predominance of negative mood (such as anger), fearlessness, impulsivity and difficulty controlling one's behaviours (Farrington, 1995; Keenan, 2001; National Crime Prevention Council, 1995, 1997; Raine, Reynolds, Venables, Mednick, & Farrington, 1998; Shaw, Keenan & Vondra, 1994). Rutter (1997, p. 120) queried that, "the best established risk factor is being male, but does that reflect temperamental features, prenatal or postnatal hormones or sociocultural expectations?" When it comes to identifying psychosocial risk and protective mechanisms, the situation is much more complex.

The best research designs to test for these risk mechanisms are those that use twin or adoptee designs (Rutter, 2000). Using this approach, researchers have found that risk factors include quite a diverse range of facets of disorganized parenting and family dysfunction (Cummings et al, 2000; Rutter, 2000). It is not at all clear, however, how far the risks derive from unresolved conflict/discord, inept parenting, deficiencies in social problem solving, models of violence and lack of impulse control, inadequacies in parental supervision, lack of committed positive parent-child relationships, or a number of other associated risk factors. It is clear that not one of these mechanisms is dominant but that the greatest risks arise from a combination (Fergusson & Lynskey, 1996; Rutter, in press).

Past researcher's attempts to explore causal mechanisms for externalizing problems have demonstrated that for ODD/CD particularly, parental/familial factors seem critical. Coercive, hostile, and discordant patterns of family interaction seem to impinge on the individual child (Rutter, Giller & Hegel, 1998). These include maternal unresponsiveness (Shaw et al., 1994), high marital discord, inconsistent parenting, insecure attachment at 18 months (Fagot & Kavanagh, in Keenan, 2001), parental

divorce, out of home care, large families with overcrowding, poor parental supervision and monitoring (Dekovic, 1999; Farrington, 1995; Hoge, Andrews & Leschied, 1996; National Crime Prevention Council, 1995, 1997; Patterson, Reid & Dishion, 1992; Rutter, 1990), high strictness and low support (Dekovic, 1999).

The significant impact of abuse and neglect on adverse child outcomes has been examined in detail elsewhere (e.g., Department of Justice Canada, 2003; Health Canada, 2002, 2003; National Crime Prevention Council, 1996; Widom, 1989, 1998). The risk from abuse and neglect carries with it an implicit lack of committed individual relationships as well as the presence of discordant ones (Roy, Rutter & Pickles, 2000). It remains fairly uncertain, however, how far the risks derive from discreet acts of abuse as distinct from the longer standing problems in relationships in child rearing with which they tend to be associated (Rutter, 2000).

Child abuse may have devastating consequences for its victims, affecting every aspect of a child's life (Department of Justice Canada, 2003). Consequences may be psychological, physical, behavioural, academic, sexual, interpersonal, self-perceptual, or spiritual (Health Canada, 2002, 2003). Girls and boys appear to be affected

differently by abuse. Compared to girls, boys are more likely to externalize their responses to violence, displaying, for example, increased aggression, delinquency and adult spousal abuse (Fergusson & Lynskey, 1997; Health Canada, 2003; Loos & Alexander, 1997).

Results from one recent study reported that physical abuse during adolescence significantly increased the risk for developing lifetime and current psychiatric disorders including CD and ODD (Cohen et al., 2002). Specifically, the authors reported that among adolescents, physical abuse and parental divorce combined to increase the risk 15 times for a diagnosis of lifetime ADHD. Parental marital status alone was not a significant risk factor, but physical abuse was (Cohen et al., 2002). How this mechanism functions is not entirely clear. Among abused children, ADHD is found at higher than expected rates (Kaplan et al., 1998). Perhaps because ADHD is a familial disorder with probable genetic predisposition, parents of ADHD youth may also have the disorder (Cohen et al., 2002). ADHD parents may themselves be more impulsive, emotionally labile and possess poorer relationship and parenting skills than non-ADHD parents. This may lead to abuse of their children, and the exasperation of the child's existing or developing attention and hyperactivity symptoms.

As well as familial factors, extra-familial influences such as peer groups, schools and the broader community in conduct problems are important, but much less is known on the details in each case and even less about the causal processes involved (Rutter, 2000). Peer influences seem especially critical, including association with deviant peers and extreme peer orientation (Dekovic, 1999; Loeber et al., 2000; Herrenkohl et al., 2000). Peer influences seem to be some of the most important risk and protective factors in middle and late childhood and beyond. In terms of community influence, the evidence that is available suggests the main impact is on preadolescent disruptive behaviour, and the mechanisms probably lie in community influences on the family rather than on the young person directly (Cummings et al., 2000; Rutter, 2000).

Conduct disorders have been associated with specific reading difficulties, lower intelligence, especially verbal (Elkins, Iacono, Doyle & McGue, 1997; Rutter, 1990) and deficient executory control (Schachar & Logan, 1990a, in Schachar & Tannock, 1995). Externalizing symptoms are also associated with specific learning disabilities, and adult personality disorders (Rutter, 1990; Schachar & Logan, 1995). Rutter (1990) described the prognosis for conduct disorders as much worse than that for emotional disorders,

with serious complications for those with early onset CD (typically before age 10 years) and ADHD.

Those with conduct disorders are highly impulsive, unpredictable and unmalleable, seem to lack empathy and generally show poor response to praise (Barkley, 1997; Rutter, 1990). Social disapproval is common likely due to the salient defiant and aggressive behaviours of these children and adolescents (Ebata et al., 1990; Rutter, 1990). Consequences of externalizing behaviour may include poor academic achievement, high parent-child conflict, peer rejection, physical health risks, delinquency and criminal offending, long-term unemployment, relationship dysfunction and antisocial personality disorder (Barkley, 1997; Elkins et al., 1997; Loeber & Farrington, 1998; Patterson, 1982).

Aggression, impulsivity, hyperactivity and antisocial behaviour place individuals at long-term high risk for a variety of adjustment problems, at home, at school, in the community and with peers. Conduct problems that remain unaddressed in childhood can inhibit a child's ability to learn social skills, peer and parent conflict-resolution, and tasks of self-soothing (Barkley, 1997; Loeber & Farrington, 1998, 2001; National Crime Prevention Council, 1995). This can lead to poor friendship making, peer rejection, and possible depression or association with

delinquent peers (Barkley, 1997; Loeber et al., 1998; National Crime Prevention Council, 1995). Adults with early onset acting out problems may have greater vulnerability to personality disorders, substance abuse issues, spousal violence and increased risk for offspring with similar conduct concerns (Alliance of Five Research Centres on Violence, 1999; Elkins et al., 1997). Individuals may be seen as 'turning away' from conventional society.

Internalizing Behaviours

Internalizing symptoms are conceptualized as reflecting both "expression in thought and turning against the self" (Katz, Zigler & Zalk, 1975, in Glick & Zigler, 1990, p. 506), and include phobias, school refusal, depression, anxiety, withdrawal, anorexia and obsessions. Both Kohlberg and Katz saw internalizing symptoms as developmentally higher status problems (Glick & Zigler, 1990). According to these researchers, individuals who were more developmentally sophisticated had a greater likelihood of developing internalizing rather than externalizing problems.

Internalizing behaviour problems are also associated with a sequelae of maladjustment, ranging from substance abuse to suicide (Biederman et al., 1995; Ries Merikangas & Angst, 1995; Riggs, Baker, Mikulich, Young & Crowley,

1995). Detrimental outcomes include difficulty with peers, conduct problems, referral to mental health services and truancy (Beidel, 1998). Anxious, depressed syndrome as adults has been predicted by somatic complaints and anxious-depressed syndrome in adolescence (Ost & Treffers, 2001). Pine and colleagues (1998, in Ost & Treffers, 2001) reported that major depression in adulthood was predicted by overanxious disorder and conduct disorder in adolescence.

However, compared to externalizing problems, some researchers have argued that internalizing symptoms generally have a better prognosis (Rutter, 1990). For example, Rutter (1990) concluded that most emotional disorders such as anxiety or depression will "clear up completely" (p. 30) following intervention. In contrast, other researchers have mentioned that depression (an internalizing disorder) is one of the "most common and more disabling psychiatric symptoms" (Biederman et al., 1995, p. 579). *Depression* has been described as one of the most significant mental health problems in life, with a high prevalence among adults, debilitating effects on overall functioning and associations with other negative outcomes such as substance use (Weismann et al., 1991). According to some researchers, the presence of an anxiety disorder in

childhood or adolescence appears to lead to increased risk of other adjustment or psychiatric problems in adulthood (Ost & Treffers, 2001).

Gender differences in incidence are inconsistently reported in the research literature on depression. Results from some research show that incidence rates are similar for boys and girls. Others estimate depression as marginally more frequent in girls (Rutter, 1990). Still other results report depression as two to three times more likely in girls (Ebata et al., 1990). Overall prevalence is estimated at 3 - 5% for severe depression and 12 - 15% for moderate (Craighead et al., 1990, in Ebata et al., 1990; Ries Merikangas & Angst, 1995; Riggs et al., 1995).

Internalizing problems are characterized by symptoms of apprehension and fear, with multi-domain characteristics. In his famous study from the Isle of Wight, Rutter (1981b) described child and adolescent depression as having affective, cognitive, physiological and behavioural characteristics. Block and Gjerde (1990) reported that depressive symptoms in 18-year-old boys (but not girls) were related to hostility. They suggested that these tendencies for boys but not girls manifested themselves back to preadolescence. Freud himself was

interested in the relation between hostility, anger and depression (Freud, 1917/1968; in Block & Gjerde, 1990).

A now less supported belief from the Freudian period was that depression was anger and hostility turned inward, rather than openly expressed (Block & Gjerde, 1990). Current theories suggest depression is related to poor self-efficacy, self-esteem, and a host of genetic/biological, temperamental, familial, and social/contextual factors (Compas & Hammen, 1994; Rutter, 2000). Life events have been implicated in the development of depression and anxiety, as they tend to occur especially in the few months preceding the onset of the disorder (Kessler, 1997). However, the evidence is not as conclusive as it first appears (Rutter, 2000).

In one study, researchers found the likelihood of people experiencing adverse life events was much affected by their own psychopathology (Robins & Robertson, 1998). With children the situation is less clear, although internalizing disorders in children are associated with an increased risk of life events both before and after onset (Sandberg, Rutter, Pickles, McGuinness & Angold, 2000). Life events seem to be associated with both behavioural changes and alterations in neuroendocrine function, but

also responses vary according to a child's personality (Rutter, 2000).

As with externalizing symptoms, child maltreatment is a clearly identified risk factor for major depression, psychosomatic complaints, long bouts of sadness, suicidal ideation and loneliness (Fergusson & Lynskey, 1997; Health Canada, 2003; Oates, 1996). Kendler and colleagues (1995) studied extended twin-family designs and found early parental loss and neglect associated with depression and a predisposition to alcoholism. However, genetic mediation may be involved in abusive processes, at least in part (Kendler et al., 1995).

Gender differences in response to maltreatment are notable. Compared to boys, girls are more likely to internalize their responses to violence, and experience, for example, suicidal ideation, eating disorders, low self-esteem and emotional/psychological disorders (Alliance of Five Research Centres on Violence, 1999). The breaking of a close bond or friendship is also a present risk factor for childhood and adolescent depression (Rutter, 1990; Rutter et al., 1988). In fact, the greatest risk for most childhood problems seem to derive from experiences that, one way or another, involve social relationships (Rutter,

2000). Even when the cause is environmental, the behaviours and symptoms of depression may become self-perpetuating.

Features of children with depression include depressed appearance, somatic complaints, psychomotor agitation, dysphoric mood, feeling of 'flatness' and separation anxiety (Compas & Hammen, 1994; Rutter et al., 1988).

Adolescents may have greater anhedonia (lack of interest in living), suicide attempts or ideation, hopelessness, insomnia, weight change, and substance use (Biederman et al., 1995; Compas & Hammen, 1994). Misery and unhappiness, loss of appetite, irritability, hostile social withdrawal, anger, lack of response to comfort, loss of interest in activities, poor concentration, and hypochondrias are all related factors (Biederman et al., 1995; Kovacs et al., 1994, in Biederman et al., 1995; Rutter, 1990; Rutter et al., 1988).

Beck (1976) identified key cognitive and mood components of depression. Feelings of depressed children include self-blame, self-reproach, guilt, self-deprecation, worthlessness, helplessness and hopelessness (Rutter et al., 1988). Beck (1976) termed the cognitive triad of depression as a negative view of self, a negative view of the world, and a negative view of the future. Cyclical problems may develop for depressed individuals because of

associated negative outcomes, such as task failure, procrastination or personal rebuff (Rutter et al., 1988).

A somewhat similar, but also distinct childhood internalizing disorder is *anxiety*. Anxiety is not a single construct, but instead is composed of many disabling symptoms. These symptomatic behaviours include physical and emotional withdrawal, difficulty speaking in public, avoidance of novel situations, trouble initiating play and social interactions, reluctance to enter strange or unfamiliar settings, and heightened physiological reactivity (Turner, Beidel, Roberson-Nay & Tervo, 1996). Disorders of anxiety in middle to late childhood and adolescence are generally considered to cluster into subtypes. These include *Generalized Anxiety Disorder*, *Specific phobias* (such as obsessive fear of heights, small animals, the dentist, the dark), *Social phobias*, *Avoidant Disorder*, *Separation Anxiety Disorder*, *School Refusal*, *Overanxious Disorder*, *Obsessive-compulsive Disorder*, *Post-traumatic Stress Disorder*, *Panic disorder* and anxiety in medical settings (Ollendick, King & Yule, 1994; Spence, Rapee, McDonald & Ingram, 2001).

Anxiety and phobic disorders represent some of the most prevalent childhood behavioural problems. They are equally frequent with externalizing problems and more

prevalent than affective disorders (such as depression and dysthymia) (Anderson, 1994). Anxiety is said to increase in adolescence, and in novel social situations (such as school transitions) associated with that developmental period (Ebata et al., 1990). A subset of anxious children and adolescents are said to become anxious adults. In one study, children with these disorders were significantly more likely to have low self-esteem, poorer social skills, and to be female compared to those with externalizing disorders (Anderson et al., 1989, in Anderson, 1994). However, this study's results found children with anxiety to be far less disabled on all measures compared to those with other childhood disorders (Anderson, 1994).

Beck (1976) described a cognitive theory of anxiety in childhood. He proposed that anxious children generally underestimate their coping ability, judge threats as more harmful and serious, and perceive threats as uncontrollable. Beck also suggested that anxious children report more catastrophizing thoughts and negative self-talk. These cognitive processes may inhibit a child's ability to develop active coping strategies, especially in novel or anxiety-provoking events (such as entering a game in process or speaking aloud in class). Fearfulness in social interactions is common among children with anxiety

disorders (Beidel, 1998), especially during the initial introduction to others when social skills (which may be lacking) are required. Children with social fears may meet the criteria for a diagnosis of social phobia.

Social phobia has been described as the most common childhood anxiety disorder (Albano, 1995, in Beidel, 1998). Estimates have placed it as high as 40% in clinical samples (Kendall & Warman, 1999, in Beidel, Turner & Morris, 1999). In one clinic, 30% of children who refused school did so because of social fears (Last et al., 1988, in Beidel, 1998). Children with social phobia may be differentiated from their normal peers based on higher trait anxiety, lower perceptions of cognitive competence, higher distress ratings during a behavioural task, higher ratings of daily social distress and negative coping strategies (Beidel et al., 1999).

Results from studies suggest that social phobia affects a child's friendship patterns and impairs other aspects of functioning (Beidel, 1998; Beidel et al., 1999; LaGreca, 2001; Spence et al., 2001). Feelings of social anxiety could lead to disengagement from peer interactions and interfere with the development of close peer support. Alternatively, those children who lack friendships may be more vulnerable to feelings of social anxiety. Children who

are rejected by their peers and neglected or excluded from peer activities generally report more social anxiety (La Greca, 2001).

Beidel et al. (1999) reported that among their sample of fifty social phobic children, 75% had few or no friends, 50% were not involved in any extracurricular or peer activities, 50% did not like school, and 10% refused to attend school regularly. Children in this study were also generally anxious and experienced somatic symptoms such as headaches and stomachaches. They scored higher on neuroticism, and tended to be depressed and lonely.

Children with social phobia have significantly poorer social skills than children without psychiatric disorders (Beidel et al., 1999). Although they do not exhibit behaviours that typically lead teachers or parents to seek help, social phobic children seem to have seriously impaired interpersonal functioning with which they often suffer in silence. This lack of social skills, intense fear of novel situations, avoidance of negative-affective-provoking objects/situations, and escape from aversive social or evaluative situations lead many children to refuse to attend school (Beidel, 1998).

School phobia has been called a "special kind of truancy" (Broadwin, 1982, in Blagg & Yule, 1994). Children

and youth with school-based fears and anxieties may feel terrified leaving home or going to school or both (Blagg & Yule, 1994; Last & Francis, 1988). Last and Francis (1988) concluded that "school phobia may occur as a complication of overanxious disorder" (p. 196). These researchers reported that three of the hallmarks of the disorder include worrying, over concern about competence and marked self-consciousness (Last & Francis, 1988).

Other symptoms in children that refuse school include somatic complaints or behavioural reactions with temper tantrums, emotional outbursts or aggressive behaviour (Last, 1991, in Blagg & Yule, 1994). One study's findings reported that among 158 anxious children, those with school phobia had a later onset than separation anxiety and much more severe psychopathology (Atkinson, Quarrington, Cyr, & Atkinson, 1989). Another study found that school phobic children had lower quantitative scores on fears endorsed (total fear score and number of intense fears) than did other child-anxiety patients, and only one common fear, that is, going to school, whereas the other diagnostic groups yielded at least 10 common fears (Last, Francis & Strauss, 1987, in Last & Francis, 1988). The authors concluded that the data support the notion that school

alone is the focus of fear and avoidance, much the same as other simple and social phobias.

Children with anxiety problems may lack a secure base due to attachment difficulties to significant family members. High rates of disorganized and ambivalent/resistant attachment have been found in anxious samples of children (Manassis et al., 1995, in Manassis, 2001). As a result of insecure attachments, childhood fear may develop and withdrawal may succeed fear (Rutter, 1988). Children with anxiety may also be agitated, dysphoric, impulsive and hostile. Alternatively, marked behavioural inhibition has been identified as a risk factor for anxiety disorders (Biederman et al., 1990; Biederman et al., 1993, in Biederman et al., 2001; Caspi et al., 1996, in Oosterlaan, 2001; Heiser, Turner & Beidel, 2003; Turner, Beidel & Wolff, 1996). Inhibition has been described as a propensity to react with restraint and avoidance to novelty and unfamiliarity (Oosterlaan, 2001).

Other risk factors for anxiety include parental history of anxiety (Anderson, 1994; Beidel & Turner, 1997; Turner et al., 2003), a family history of ADHD (Anderson et al., 1989, in Anderson, 1994), parenting styles depicted by low warmth and over-control (Boer, 1998, in Boer & Lindhout, 2001; Hirshfeld et al., 1997, in Turner et al.,

2003), parental conditioning to be fearful (Sot, 1987, in Turner et al., 2003), and childhood maltreatment (Gilmartin, 1994; Health Canada, 2002, 2003; Loos & Alexander, 1997; Oates, 1996).

Anxiety and depression show strong comorbidity in children (Biederman, et al., 1995; Kendall, Brady & Verduin, 2001; Kovacs, 1990), with as many as 79% complaining of both symptoms, and 30-75% presenting with greater than one diagnosable disorder. Depressed mood in children has also been associated with shy and withdrawn behaviour (Loeber et al., 1998). However, there is often specific directionality (Loeber et al., 1998) in the relations. Depressed children tended to be anxious, but anxious children may not be more depressed (Kovacs, 1990). What seems evident, however, is that emotional disorders may be more likely to occur along with other symptoms or disorders than they are alone (Compas & Hammen, 1994), and this *interrelatedness* seems to be the case with many core syndromes (Achenbach, 1991).

Comorbidity of Internalizing and Externalizing Disorders

The concept of interrelatedness is central to developmental psychopathology (Jessor, 1991). For example, interrelatedness is observed in a set of problem behaviours (such as substance abuse, delinquency and drunk driving)

that reflect a health-compromising lifestyle and co-variation in symptoms and psychological and psychiatric disorders (Angold & Costello, 1993; Compas & Hammen, 1994). Though distinctions have historically been made between externalizing and internalizing behavioural problems (Achenbach & Edelbrock, 1978; Glick & Zigler, 1990; Rutter & Garmezy, 1983), more recently it has been suggested that within individuals (especially children), there is a great tendency for "several emotional and behavioural problems to cluster and co-occur" (Compas & Hammen, 1994, p. 229).

This 'comorbidity' is now recognized as the rule rather than the exception by most researchers (e.g., Achenbach, 1991, in Compas & Hammen, 1994; Block & Gjerde, 1994; Compas & Hammen, 1994; Offord, Lipman & Duku, 2001; Rutter, 1988). There appears to be significant diagnostic overlap between the categories of internalizing versus externalizing disorders (Rutter, 1988). In the Isle of Wight study, Rutter and colleagues (1981b) classified children with both emotional and behavioural disorders as 'mixed', and reported mixed syndromes as accounting for 21% of all psychiatric referrals and 27% of psychiatrically disturbed boys (in Puig-Antich, 1982).

Clinical experience (Davies, 2003; Lipman & Offord, 1997) suggests that this mixture of problems is very

common, and there is a strong need to disentangle the overlap between categories. There is some disagreement about the prevalence of comorbidity, particularly outside of the 'acting out versus acting in' boundaries (Caron & Rutter, 1991; Kovacs, 1990). However, children with conduct disorders or delinquency may also present with depression (Biederman et al., 1995; Fleming & Offord, 1990; Puig-Antich, 1982; Riggs et al., 1995), or those with depression may show hostility or fighting (Achenbach, 1991, in Compas & Hammen, 1994).

Evidence demonstrates significant comorbidity of CD and ADHD (Schachar & Tannock, 1995), or both of these and emotional disorders such as depression (Biederman et al., 1995; Connell & Goodman, 2002; Puig-Antich, 1982; Riggs et al., 1995; Rutter, 1988) and anxiety (Lahey, Loeber, Burke, Rathouz & McBurnett, 2002) or both (Lambert, Wahler, Andrade & Bickman, 2001). Other mental health problems, such as ADHD, anxiety, mood disorders, and substance use seem to intercede with conduct disorders and influence their course (Farrington, Loeber and van Kammen, 1990; Loeber, Burke, Lahey, Winters & Zera, 2000).

Results from some studies on comorbidity suggest that internalizing problems in middle and older children are more associated with ADHD than CD (e.g., Loeber et al.,

1990, 2000), and ADHD has an above average comorbidity with the internalizing spectrum of anxiety (Lahey et al., 1987; Loeber et al., 2000) and depression (Biederman et al., 1991; Kolko, 1993; Rey, 1994). Conduct disorder, delinquency, oppositional defiant disorder and ADHD may all covary at rates as high as 25-33% in children with depression (Compas & Hammen, 1994; Fleming & Offord, 1990; Loeber et al., 1998; Marmorstein & Iacono, 2001; Puig-Antich, 1982).

Kandel and Davies (1982, in Compas & Hammen, 1994) studied behavioural problems and depression in a large epidemiological study in New York State. For boys, depression was related to minor delinquency and more absenteeism. For girls, however, depression was associated with more serious delinquency, school absenteeism, lower school grades, alcohol and cigarette use and use of illicit drugs. Rohde and colleagues (1991; in Compas and Hammen, 1994) reported that depression typically follows other disorders, and comorbidity is associated with a greater frequency of suicide behaviour and treatment seeking, but does not affect the duration or severity of the depression.

Loeber and colleagues (1998) examined child and adolescent antisocial behaviour with mental health problems in the Pittsburgh Youth Study. Results suggested that

internalizing problems such as depressed mood and anxiety were uniquely associated with ADHD; internalizing problems were more associated with ADHD than conduct disorder; physical aggression was related to substance use; depressed mood was more related to delinquency and substance use than shy/withdrawn behaviour; and shy/withdrawn behaviour was more strongly related to physical aggression and covert behaviour.

Other research results suggested that shy/withdrawn symptoms are more important in disruptive behaviour aetiology (Kellam et al., 1991, in Loeber et al., 1998). However, it is unclear as to whether these relations are equally strong. Because physical aggression is related to social skills (Loeber et al., 1998), shy/withdrawn behaviour may be more related to physical aggression than depression. Alternatively, perhaps depression causes aggression.

Achenbach and Edelbrock (1978) demonstrated the intercorrelation between internalizing and externalizing symptoms through factor analytic study. Broadband factors identified as internal (depression, anxiety, social withdrawal and somatic complaints) covaried with symptoms of conduct disorder. Depressive symptoms correlated with each other to form syndromes that included both anxiety and

depression including nervousness, fearfulness, worries, and loneliness (Achenbach, 1991). Anxiety and depressive syndromes correlated highly with both internalizing symptoms (withdrawal and somatism) and externalizing symptoms (aggression, attention) in clinically and non-clinically referred boys and girls.

The research that is available on risk factors for both emotional and behavioural disorders in childhood and adolescence suggests the multiplicative effect is critical. Factors that have been identified as mixing to create a powerful dosage of both problems include parental depression, family history of mental illness or criminality, family discord, chronically adverse life circumstances, alcoholism in a first-degree relative, and acute adverse life events (Chiles, Miller, & Cox, 1980; Costello, 1989; Rutter, 1989; Rutter & Quinton, 1984). Most of these risk factors seem to emphasize environmental influences, though some research suggests that half of all comorbidity can be explained by a common genetic liability (O'Connor et al., 1998, a,b).

Thus, mixed clinical pictures seem very common in child psychopathology. Children may have several different but concurrent diagnoses (Rutter, 1988). The co-occurrence of emotional disturbances and disruptive behaviours during

childhood and adolescence seems to result from associated but separate psychopathological processes (Overbeek, Vollebergh, Meeus, Engels & Luijpers, 2001). Empirical evidence suggests that comorbidity in the emotional and behavioural problems of children is generally ubiquitous, however, there are still mixed results concerning the strength of the association (Overbeek et al., 2001). Some studies (see Pertraitis, Flay & Miller, 1995) found small or insignificant relations between internalizing and externalizing disorders. Most epidemiological community-based research findings (see Garnefski & Diekstra, 1997), however, report co-occurrence of emotional and behavioural problems in the range of 31% to 57%.

One possible explanation for the contrasting findings is the changing developmental nature of childhood and adolescence. Since studies of adolescents show increases with age in the mean level of both depressive mood and conduct issues such as delinquency, caution is required when evaluating prevalence results. Researchers have argued that a certain degree of abnormal or 'norm violating' behaviour can be seen as part of normal development and is not a correlate for poor emotional health (Overbeek et al., 2001). Perhaps only the more serious externalizing

behavioural problems are linked to the more serious internalizing problems.

The phenomenon of comorbidity needs to be further tested and inquiries made about the meaning and implications of this overlap (Rutter et al., 1988). As with the 'pure' disorders, researchers have stressed the need for studies on models of explanatory mechanisms that underlie the co-occurrence of internalizing and externalizing problems (Angold & Costello, 1993; Caron & Rutter 1991). The best research designs to answer these questions are those that contrast pure cases of each condition and several groups of mixed ones. This type of research helps to better understand comorbidity, implications for treatment and long-term outcomes associated with it. It also allows empirical scrutiny of many alternative perspectives on the phenomenon.

Alternative perspectives on comorbidity. Four alternate perspectives of the co-occurrence of internalizing and externalizing behavioural problems have been offered (Overbeek et al., 2001). These include the *stability perspective*, *mutual influence perspective*, *acting out perspective* and *failure perspective*.

In the *stability perspective*, comorbidity is seen as being caused by non-specific (shared or overlapping) risk

factors. Certain risk factors may then lead to internalizing as well as externalizing problems and no cross-lagged relations can be specified between these (Overbeek et al., 2001). Krueger and colleagues suggested that an association between internalizing and externalizing problems are caused by core psychopathological processes that refer to modulations (either internal or external) of basic feelings of anxiety (Krueger, 1999; Krueger, Caspi, Moffitt, & Silva, 1998). The thesis is that different individuals internalize and externalize anxiety feelings to different levels and then maintain their personalized internalizing and externalizing habits over the life course.

In the *mutual influence perspective*, the assumption is also that comorbidity is caused by shared or overlapping risk factors. However, internalizing and externalizing problems are assumed to be mutually reinforcing throughout a certain time interval (Overbeek et al., 2001). Hence, since the same risk factors form the basis for both types of problems, the development of one problem is expected to lead to a greater vulnerability (or sensitivity) for the other (and vice-versa). In this model, cross-lagged relations appear between internalizing and externalizing problems in the same time interval.

The *acting out perspective* originates in psychoanalytic theories. These theories stated that conduct problems are often a part of an internalizing problem that is 'acted out'. For example, depressive feelings were believed to be masked by disruptive behaviour and other symptoms of the broader category of externalizing problems (Overbeek et al., 2001). It is often assumed that internalizing problems not only predate, but also predict externalizing problems (Gold, Mattlin & Osgood, 1989). Merely one cross-lagged relation, from internalizing to externalizing problems, would then exist.

Finally, *failure perspective* also suggests one problem constitutes a risk factor for the other. However, in this reversal, it is suggested that externalizing problems predate and predict internalizing problems (Capaldi, 1992). Noxious behaviour and lack of social skills may result in rejection and a lack of social support by important others. This may lead to pervasive failure experiences for the child in social situations and at school. Failure experiences are viewed as leading to an increased vulnerability for depressive and anxious moods (Overbeek et al., 2001). In this model, only one cross-lagged relationship exists, from externalizing to internalizing problems.

Other researchers insist that a *developmental perspective* be adopted when examining comorbidity. This perspective has created further critiques and questions about comorbidity. Firstly, childhood and adolescence span periods of significant changes in cognitive capacity, social status, and social functioning. Stability and continuity are critical factors in child and adolescent psychopathology, raising questions about disorders that are developmentally specific and the short-versus-long term significance of various disorders (Nottelmann & Jensen, 1995). Comorbid disorders may reflect amorphous, non-specific expressions of psychopathology in younger children, in contrast to more clearly articulated clinical presentations by older children or adolescents (Nottelmann & Jensen, 1995).

Boundary problems between disorders may be due to non-specific early responses to family psychopathology (Carlson, 1990), or comorbidity may be a developmentally influenced, transient phenomenon (Nottelmann & Jensen, 1995). In other words, the expression of a disorder may change with age or developmental stage, and the earlier or later manifestations of an underlying condition may co-occur during transition, while symptoms change from the earlier to later form. Caron and Rutter (1991) describe

comorbidity when 'one disorder is the earlier manifestation of another'. Finally, psychopathology may interfere with the normal development of social and academic skills, which become increasingly important for daily interactions in later childhood and adolescence. Consequently, a comorbid second or third disorder may develop when earlier problems remain unresolved (Nottelmann & Jensen, 1995).

Regardless of the perspective adopted, continued research on comorbidity may allow for comorbidity patterns to be identified and examined, not only for their implications for prognosis and treatment, but also for the evaluation of the classification systems on which they are based (Nottelmann & Jensen, 1995).

Conceptual and methodological issues. Part of the problem with contemporary research into childhood psychopathology comorbidity lies in methodological problems, especially with operational definitions of comorbidity. As shown in Table 1, researchers have used a wide range of definitions to operationalize comorbidity. This lack of operational definition has contributed to the debate about comorbidity. For the purpose of this study, comorbidity or 'mixed-syndrome' behavioural problems were defined as *teacher, clinician, or treatment team reports of the co-occurrence of two or more diagnostic categories or*

symptoms. 'Pure' syndromes were defined as teacher, clinician or treatment team reports of the occurrence of one diagnostic category or syndrome. Assessment of these symptoms were assisted by the use of standardized tools, such as the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV, APA, 1994), and the Conners' Teacher Rating Scale - Revised (CTRS-R, Conners, 1997).

Table 1

Operational Definitions of Comorbidity In the Research Literature

1. the degree to which a disorder is associated with other maladaptive behaviours, emotions, syndromes and disorders (Compas & Hammen, 1994)
2. the co-occurrence of two or more diagnostic categories or symptoms (Achenbach, 1991)
3. when one disorder represents an earlier version or manifestation of another (*prognostic comorbidity*, Caron & Rutter, 1991)
4. differentiating between diagnostic versus syndrome co-occurrence (Brown & Barlow, 1992; in Clarkin & Kendall, 1992)
5. two or more distinct disorders in the same individual at the same point in time (Keiley et al., 2003)
6. symptoms with common or shared risk factors; or groups which are variants of one of the pure disorder groups and not like the other pure group despite overlap (Drabick, Gadow & Bromet, 2003)

Further concerns in research on comorbidity surround the issue of construct independence in diagnostic procedures. Though the use of standardized testing with instruments with known psychometric properties has increased the predictive validity of diagnostics, there are still methodological and nosological problems that influence variance in childhood mental health disorders (Abikoff & Klein, 1992; Jensen, 2003). Orthogonal factors such as hyperactivity-inattention and conduct problems-aggression have been found to be only partially independent. This multicollinearity is a problem that contributes to scepticism about comorbidity in psychopathology (Angold, Costello & Erklani, 1999; Kaplan, Dewey, Crawford & Wilson, 2001; Keiley et al., 2003; Krueger et al., 1998). For example, some researchers have argued that when more than one disorder is diagnosed, it is simply a statistical artifact (Kaplan et al., 2001).

These 'boundary problems' in classification have been argued by some researchers to inflate the rate of comorbid diagnoses (Nottelmann & Jensen, 1995). On the one hand, diagnostic criteria for separately occurring disorders may not discriminate sufficiently between separate disorders (Achenbach, 1990, 1991; Caron & Rutter, 1991). General social impairment, for example, could lead to a high rate

of non-specific symptoms included in the criteria for psychopathology for different disorders (Caron & Rutter, 1991). "Critical features for drawing clear boundaries may be missing" (Nottelmann & Jensen, 1995, p. 111).

On the other hand, higher order patterns of related problems may in fact represent single diagnostic entities (Achenbach, 1990/1991) and an artificial attempt to separate these may lead to high levels of comorbidity (Caron & Rutter, 1991). A related issue concerns the point at which boundaries are drawn between normal and abnormal ranges of functioning (Nottelmann & Jensen, 1995). Perhaps boundaries are deflated, contributing to comorbidity (Achenbach, 1990/1991; Caron & Rutter, 1991) or the stipulation of severity may result both in lower disorder prevalence or lower comorbidity rates.

The current nosological system (*DSM-IV*) available in Canada serves a valuable purpose in research and has largely facilitated communication in psychopathology. However, it is mostly atheoretical and descriptive (Nottelmann & Jensen, 1995). Findings on comorbidity may well contribute to the expansion of the DSM system and later revisions, assisting with a process which may establish entities that cross current classification boundaries. However, as researchers Gould, Bird and

Jaramillo (1993) stated, "Given the magnitude of comorbidity in the present community sample, it would be a daunting and tedious task to define a sufficient set of combination categories to represent the extensive co-occurrence of disorders" (p. 310).

As a consequence of the lack of a single operational definition, classification issues, multicollinearity, and high rates of comorbidity in clinical and epidemiological research, some have called into question research of so-called 'pure' disorders (Krueger et al., 1998). Demands for systematic empirical examination of comorbidity have also been made (Clark et al., 1995, in Krueger et al., 1998; Jensen, 2003). Several researchers have attempted this and confirm the genuine mechanisms of comorbidity, dispelling suggestions that it instead represents artifactual phenomenon, nosological problems, sampling bias, severity or measurement variance (Angold et al., 1999; Biederman et al., 1995; Keiley, et al., 2003; Krueger et al., 1998; Nottelmann & Jensen, 1995; Schachar & Tannock, 1995).

Given the use of multi-axial diagnostic instruments in determining developmental psychopathology, questions remain about what previous research tells us when 'pure' disorders have been studied. This research may or may not be generalizable to children with multiple clusters of both

internalizing and externalizing behaviours. Further research to determine the strength of behavioural interrelations and the incidence of comorbidity in various samples is required. The implications for treatment and long-term life outcomes for pure internalizing, externalizing or 'mixed syndrome' children and adolescents must also be examined.

Prognostic outlook. One area of research that may shed light on questions of classification is the study of comorbidity and treatment response. To the extent that 'pure' and comorbid forms of psychopathology show different outcomes in response to treatment, there may be justification for considering the comorbid form as qualitatively different from the single, noncomorbid form.

It is generally accepted that children with 'mixed syndromes' (i.e. both internalizing and externalizing behavioural disorders) have poorer prognoses than pure cases (for a review, see Nottelmann & Jensen, 1995). There are some research results that suggest better outcomes for children with emotional than behavioural problems (Davies, 2003). Thus, it is plausible that children with emotional symptoms that also display aggression or impulsivity will have more severe sequelae than those with emotional problems alone. Consistent with this notion, the 'additive

risk' principle suggests multiple risk factors for all covarying symptoms increase severity of these symptoms and reduce overall treatment response.

There is increasing empirical evidence in support of this position. In one example, female adolescents with both main and interaction effects of major depression and conduct disorder were found to be more impaired, higher at risk and higher risk to others, and presented with more severe problems in multiple domains (Marmorstein & Iacona, 2001). Depressions with CD may be more severe, longer lasting and characterized by less mania/hypomania, less fatigue, lower anxiety, fewer obsessive-compulsive symptoms, more suicidal ideation, less psychosis, and more conduct symptoms compared with those without CD (Riggs, Baker, Mikulich, Young & Crowley, 1994).

Lambert's research (Lambert, Wahler, Andrade & Bickman, 2001) into conduct disorder and Wright's study (Wright, Zakriski, & Drinkwater, 1999) of delinquency both show that those youth with at least one other comorbid internalizing problem had more serious disturbances. For example, they were more deviant, more socially incompetent, more likely to be criminally charged, more likely to be placed in special school classrooms and more likely to fail

school grades (Dodge and Coie, 1987, in Wright et al., 1999; Lambert et al., 2001).

Researchers (e.g., Lambert et al., 2001; Puig-Antich, 1982) have examined the prognostic outlook for treatment of children with comorbid conduct disorders. Conduct disorders were commonly comorbid with other conditions, including major depression, dysthymia, and overanxious disorder, were more chronic, more expensive and longer to treat, and generally had more incidents of relapse (both internalizing and externalizing) 1.5 to 3 years post treatment than did other behavioural problems (e.g., Capaldi, 1991, in Davies, 2003; Lambert et al., 2001; Puig-Antich, 1982).

Kusché, Cook and Greenberg (1993) examined neuropsychological and cognitive functioning in 305 children (M age = 8.0 years) with anxiety, externalizing, and comorbid psychopathology. These researchers expected to find that children who were comorbid for these two types of psychopathology would show attributes similar to a combination of those shown by children with only anxiety and children with only externalizing disorders, albeit to a more severe degree. Results from the study found that the comorbid group tended to include slightly more males, almost half had IQs below 85, and the majority were identified by their school districts as being in need of

special education services. These children demonstrated difficulties with all aspects of functioning, with the exception of grip strength (an example of motor functioning) (Kusché et al., 1993).

Most of the comparisons between the pure and mixed syndrome groups remained significant when IQ was controlled for in later analyses. The authors concluded that the findings suggest that comorbid children show severe difficulties with all aspects of cognitive processing, academic work and classroom behaviour, while evidencing a high level of comorbid depression and emotional distress (Kusché et al., 1993). Kusché and colleagues (1993) suggested that "although little is known about them, this group of children is exerting a substantial impact on the educational system" (p. 191).

Biederman and colleagues (1993) examined treatment response to the drug Desipramine (DMI) in clinic-referred children with pure or comorbid ADHD. The researchers found a tendency for pure ADHD children to show a lesser response to placebo and greater difference between placebo and DMI response than comorbid ADHD children. Similarly, Hughes and colleagues (1990) reviewed pharmacological treatment response of Major Depressive Disorder (MDD) children with comorbid (MDD and CD/ODD) children. Results found that MDD

children were more likely to respond to medication than the comorbid group, while the comorbid group were more likely to respond to placebo.

Finally, one study examined the clinical consequences of comorbidity in a community sample of over 1500 adolescents (aged 14 - 18 years) on six clinical outcomes measures which included academic problems, mental health treatment utilization, past suicidal behaviour, role functioning, conflict with parents, and physical symptoms (Lewinsohn, Rohde & Seeley, 1995). Results from the study indicated that the impact of comorbidity was strongest for academic problems, mental health treatment utilization and suicidal behaviour.

Results also suggested that the greatest incremental impact of comorbidity was on anxiety disorders and the least was on substance use problems. The authors concluded that the significance of comorbidity may differ across specific comorbid disorders and across outcome measures, with some comorbid disorders being much more detrimental, and some outcome measures much more affected than others (Lewinsohn et al., 1995).

Despite theoretical and empirical support suggesting poorer outcomes for comorbid conditions, it has also been argued that because of better outcomes associated with

emotional problems, these symptoms could provide some level of protection in children with comorbidity. For example, Davies (2003) suggested that anxiety may have a *mitigating effect* on conduct problems, in that conduct disorder may be milder in children with anxiety disorders. Davies (2003) proposed that anxiety may have an inhibiting effect on acting out behaviour. In this regard, Clarkin and Kendall (1992) caution that comorbidity does not automatically promote greater treatment difficulty and perhaps these comorbid traits might even be boosts to the process.

There is at least some empirical support for this notion. For example, results from one study found that young boys (aged 7 to 12) with CD but without anxiety had more police contacts, more school suspensions, and were described by peers as being the 'meanest' and 'fighting the most' than those with both disorders (Walker and colleagues, 1991, in Davies, 2003). Stanger and colleagues (1993) reported that among boys and younger students, withdrawal symptoms negatively predicted school behavioural problems. Boys with ADHD/CD and comorbid depression displayed enhanced treatment outcomes overall compared with the 'pure' externalizing children.

Results from a study of home-based treatment in German children with internalizing, externalizing and 'mixed'

syndromes suggested no differences in treatment modality or treatment effects (all were positive and in the expected direction) among all three groups (Lay, Blanz & Schmidt, 2001). Shea and colleagues found that the presence of dependent personality traits (comorbidity) in depressed individuals was a benefit to treatment, building a better treatment alliance between the therapist and client (in Clarkin & Kendall, 1992). Some researchers hypothesized that the treatment of depression (with psychopharmacological interventions) in children with CD will "either be followed by normalization of conduct patterns or will make such patterns more amenable to psycho-social treatment methods" (Puig-Antich, 1982, p. 126).

It is possible that children and adolescents who display both internalizing and externalizing symptoms have transient periods of withdrawal, shyness, emotional flatness and depression. These emotional symptoms are less salient and perhaps less frustrating or frightening for others than externalizing behaviour. Periods of internalizing behaviour may act as protective mechanisms in some mixed-syndrome children.

Teachers and other adults may respond more favourably to children displaying emotional rather than behavioural

symptoms, and may be more willing to offer their support to children in these periods. When children are 'acting in' rather than 'acting out' they are less likely to get into physical fights, or to be defiant with peers and adults. They may also be more socially withdrawn and isolated, and therefore may be protected from other delinquent youth and their activities.

One possible explanation for the better or equally good treatment outcomes for mixed-syndrome children suggested by research findings is that treatment for both internalizing and externalizing symptoms is often cognitive-behavioural or psycho-educational in nature. These treatment modalities may address similar risk and protective factors for both types of behavioural problems (Beidel & Turner, 1997; Clarkin & Kendall, 1992; Dekovic, 1999; Jensen, 2003; Kendall et al., 2001; Lay et al., 2001). Some researchers have suggested that both internalizing and externalizing symptoms improve with these treatments, regardless of the target behaviour (Hinshaw, 1992, in Clarkin & Kendall, 1992; Kendall et al., 2001).

Implications for treatment. It has also been suggested that treatment of mixed syndrome children is more difficult, longer-term and requires more innovation and creativity than that for pure syndromes. Certainly it

raises concern for treatment planners, specifying the focus and sequence of treatment components (Clarkin & Kendall, 1992). Co-occurring CD, depressive and anxiety disorders and ADHD complicate any differential diagnosis of individual pure syndromes, and may lead to questions about relative weight in treatment. For example, often treatment programs must address both bullying and being victimized (Davies, 2003). Comorbid conditions may or may not be chosen to address first (i.e. aggression versus suicidal behaviour, depression versus social withdrawal or substance use versus delinquency).

In youths with conduct concerns, comorbidity may lead to ignorance or inaccurate assessment of other conditions (Davies, 2003; Dekovic, 1999; Riggs et al., 1995). The control of salient aggressive behaviour may be the priority focus in residential or day treatment (Barkley, 1997; Davies, 2003). This management of conduct problems may override the treatment of emotional disorders (Dekovic, 1999; Riggs et al., 1995). However, this may be an effective strategy.

Perhaps emotional disorders are better addressed following a period of conduct stabilization. In fact, some researchers and clinicians have suggested that treatment need not be concurrent (Kendall et al., 2001; National

Crime Prevention Council, 1995). Manualized treatment programs, however, may be of little value when the focus is on specialized interventions and little attention is provided to comorbid conditions/symptoms. Modification to treatment manuals/programs is likely to be required, with an eclectic focus on the individual and multiple risk and need factors.

Brown and Barlow (1992) laid out issues for treatment research in the form of three questions: a) Does the presence of certain comorbid disorders or symptoms affect the short- and long-term response to treatment? b) What type of adjustments should and can be made to extant treatments to enhance treatment efficacy when comorbidity is present? c) What is the course of comorbid disorders and symptoms after successful treatment of the principal disorder? Comorbidity is likely to, they argue, have implications for the evaluation of treatment efficacy.

The study of comorbidity is in its infancy. As Loeber states, it is "in its embryonic state" (Loeber et al., 2000, p. 1475). Important questions remain about comorbid diagnostic classification, etiological theory, treatment outcome results and recommendations. Additionally, this field has, as is often the case in psychology, created new questions.

Some of these questions concern the applicability of previous research into pure syndromes, the potentially differential role of risk reduction in mixed behavioural syndromes and the mechanisms by which these may function. To investigate this further, it seems prudent to begin with an analysis of the current literature on *protective factors*, hypothesized to reduce the likelihood of dysfunction and disorder in individuals.

Protective Factors Associated with Behavioural Problems

Research into risk models of pathology introduced the issue of protection (Garmezy, 1983). Questions were raised as to how individuals escaped stress and adversity in the face of multiple risk factors (Osofsky, 1997). These so-called 'resilient' children apparently possess individual qualities that allow them to work through normal and exceptional life crises.

According to the father of the study of resilience, Norman Garmezy (1994), protectiveness "extends to genetic-constitutional variables, personality dispositions, supportive milieus within the family and beyond, and the availability to some degree of societal supports" (p. 14). Garmezy (1983) and Rutter (1987) also identified factors within the child's social, familial and contextual environments that moderated or mediated the influence of

risks and stresses in the environment or sometimes within the child's immediate situation, such as health or illness problems (Garmezy, 1985; Rae-Grant, Thomas, Offord & Boyle, 1989).

Protective factors are quite heterogeneous, and include internal, external, personal and environmental elements. Gore and Eckenrode (1994) suggested that protective factors may be both what a person brings to an encounter and objective features of that environment. Rutter (1998) concluded that within the ecology of the environment of which children find themselves in (i.e., family, school and neighbourhood, [Bronfenbrenner, 1979]) are protective factors or *compensatory experiences* for children not having them 'naturally'. However, there is overlap and more explanation required.

Protective factors may combine in non-additive ways in producing effects, and/or there may be individual differences for protection afforded by those factors. Some suggest that the presence of certain protective elements determine the emergence of other protective mechanisms at some later point in life (Gore & Eckenrode, 1994). Protective factors may be short-term continuous variables (Cummings et al., 2000; Leadbeter, Kuperminc, Blatt, &

Hertzog, 1999) or perhaps moderators only in the context of existing risk.

Protective factors have been defined in multiple ways in the still sparse literature and some disagreement exists about these definitions and mechanisms. However, most researchers agree on the function of protective factors, simply as resources that improve or sustain some part of an individual's life. For the purpose of this study, the focus is with protective elements that ameliorate the effects of existing child psychopathology, or "*resources that decrease the likelihood of further adjustment problems*" (Leadbeater et al., 1999, p. 1268).

Many problems in the resilience literature have recently emerged. These include ambiguities in definitions or *definitional diversity* (Cummings et al., 2000) and critical terminology (e.g., Luthar, 1991, 2003; Sameroff, 1999). Additionally, concerns with heterogeneity in risks experienced and competence achieved by individuals viewed as 'resilient' have been examined (e.g., Sameroff, Gutman & Peck, 2003). Finally, instability of the phenomenon of resilience and concerns regarding the usefulness of resilience as a theoretical construct have developed in the last few years (Luthar, Cicchetti & Becker, 2000).

Recent concerns and issues. Luthar and colleagues defined *resilience* as a dynamic process encompassing positive adaptation within the context of significant adversity (2000, p. 543). Within this definition are two critical notions: a) that there must be exposure to a significant threat or severe adversity and b) that the achievement of positive adaptation occurs despite major 'assaults' on the developmental process. The study of protective factors or mechanisms or 'resiliency' however, has not always agreed about what constitutes resilience, protective factors or the mechanisms which underlie these constructs. Significant contemporary research points to a sophisticated model of protection that has not yet been well conceptualized or empirically studied.

The early research into protection included studies of the children of schizophrenic mothers (Garmezy, 1974), and socio-economically disadvantaged children in Hawaii (Werner, Bierman & French, 1971). These groundbreaking research endeavours focused primarily on children's personal qualities such as autonomy or self-esteem (Masten & Garmezy, 1985). As the field evolved, however, researchers increasingly acknowledged the role of factors in the child's external environment, leading to what are

now recognized as proximal and distal protective influences.

Rutter (1987) placed these protective factors within a matrix which serve four essential functions: a) the reduction of negative outcomes by altering the risk or child's exposure to risk; b) the reduction in the negative chain reaction following exposure to risk; c) the establishment and maintenance of self-esteem and self-efficacy; and d) the opening up of opportunities.

This matrix evolved into the current model with six steps leading to resilient outcomes (Rutter, 1993). These include a) mitigating the riskiness of the stressor; b) reducing exposure to the risk; c) breaking adverse cycles or chains of misfortune as a result of a stressor; d) fostering positive appraisals of the self (e.g., self-esteem, confidence); e) increasing the range of positive opportunities and options in life; and f) facilitating coping and emotion regulation skills.

Rutter (1990) also suggested that competence in a child is the best predictor of future competence. Kussin (2002) concluded, "What makes a child resilient is the relative strength of individual characteristics and external protective factors provided by families, schools, and communities, compared to the influence of risk and

stresses in the environment" (p. 4). Thus, these protective factors lie within three domains: individual, familial, and social/external (Garmezy, 1993; Grossman et al., 1992).

Individual protective factors. Protective elements within the individual have sometimes been called 'resilient temperaments' (Borum, Bartel & Forth, 2002; Hoge, 1999). Temperamental/individual characteristics can be conceptualized as being related to positive *temperamental* characteristics of the child, exceptional *social skills*, various *child competencies* and abilities, and confident *perceptions*, values, attitudes and beliefs in the child (see Appendix A) (Vance, 2001).

It is still not clear exactly how these protective factors function to increase resiliency, and therefore consistently better life outcomes in many children faced with multiple risk factors. Because resiliency is the study of individual variation to stress or risk, one can imply that there would be characteristic capacities in the biological, psychological and social stress coping mechanisms of resilient youth (Vance, 2001).

The use of adaptive coping mechanisms (altruism, humour, suppression, anticipation and sublimation) in psychological literature is seen as predicting superior psychosocial adjustment in adults (Vaillant, 1977, in

Vance, 2001). The 'seeds' of these defence mechanisms have been found in the protective factors of resilient children. Social support networks comprise a significant portion of the ability of a child to cope. However, results from twin studies have suggested that there is also a heritable component to social support, perhaps mediated by congenital aspects of personality such as likeability/responsiveness or sociability (Kendler, 1997, in Vance, 2001).

The protective mechanisms underlying these conceptual constructs can be related to Rutter's (1987, 1993) multiple processes of resilience. The protective mechanism of *reduction of risk impact* involves alteration of the risk itself and alteration of the child's exposure to risk. *Reduction of negative chain reactions or cycles of misfortune* involve an interruption of the risk and its pathway. The *development and enhancement of positive appraisals of the self-system* is a higher-level developmental task of childhood and adolescents. The *creation of opportunities and options in life* is the doorway to a different trajectory for those at risk. The *facilitation of coping and regulation skills* is an essential predictor of adaptive functioning in the face of significant odds. These risk mechanisms can be hypothesized within these individual protective factors.

Easy-tempered children may cause less stress in their environments. For example, independent toddlers may be less demanding and create more responsiveness in their caregivers. Likeable children may actively seek out and show positive responsiveness to others, thus creating new relationships with active agents of change. Advanced social skills may increase the child's pro-social peer and adult contact, as well as facilitating good coping skills. Good intellectual ability, school achievement, and especially school bonding may create opportunities to attend better schools or receive more academic support and encouragement.

Development of mastery in tasks may increase a child's self-confidence and self-efficacy. A child's internal locus of control, positive hopefulness and attitudes, and realistic self-esteem may allow the child to demonstrate better self-protection and seek support readily when required. A confident, likeable, bright or athletic child may see the opening up of new opportunities, such as higher education or participation in athletics at the national level. All of these individual child characteristics serve to reduce the impact of and exposure to risk, reduce negative chain reactions, and serve the development and enhancement of self-esteem, coping/regulatory skills and creation of opportunities.

Perry (1997) argued that children are not resilient, they are *malleable*. He defined this as being able to adjust to changing circumstances and being adaptable, rather than being capable of returning to an original shape or position. Perry argued that the child's individual characteristics provide a level of 'risk management' rather than 'risk avoidance'. As children get older, they use their own personal coping and problem solving resources to buffer the impact of negative and stressful events (Masten, Best & Garmezy, 1990; Rutter, 1993).

Familial factors. Protective family factors can be conceptualized as positive *aspects of the parents and home environment*, and warmth and caring in the *parent-child relationship* (see Appendix A). Rutter's mechanisms can again be applied to the study of familial aspects in child resiliency. Familial factors may serve to buffer risk, or even prevent its onset. Supportive, caring parents, with whom the child is securely attached, may interrupt or insulate against disadvantage such as poverty or neighbourhood disorganization.

Smaller families may open up more opportunities for at-risk children and youth, and further competencies and self-esteem. Positive role models of active coping in supportive parents may increase child regulatory and coping

skills. For example, being first-born and in a relatively small household may create less stress for the mother or primary caregiver, and may also increase potential for individual time and attachment opportunities with infants. Parents with more education may be more aware of opportunities for youngsters, and may be less affected by poverty than those with little education.

As well, relief for parents in the form of alternate caregivers may create positive attachments with other significant adults. Structured environments may increase safety and well-being of children and reduce opportunities for anti-social or deviant behaviour. Parents who are involved in their child's day-to-day experiences may have closer bonds with them, provide more support and be able to communicate more effectively, especially in times of stress. Finally, positive child-centred discipline may create more problem-solving abilities in children, and may reduce behavioural problems overall.

Thus, familial factors may serve to reduce the impact of risk on children or the child's exposure to the risk. This is especially clear when the risk is poor parenting practices and family discord. Families may reduce negative chain reactions resulting from risk when they are supportive and intuitive to the child's needs. Parents who

value their children's interests and abilities, and look for opportunities to strengthen the child's needs may assist in the development of the child's self-esteem, coping skills and mastery. This may lead to the opening up of better protective opportunities for the child.

Social/external protective factors. Several protective factors and mechanisms are related to the existence of social supports and environmental influences over the course of development for a child. In the social realm, research suggests that the existence of strong support has a powerful effect on a variety of child outcomes (Vance, 2001). Resilient children and adolescents seem to be able to surround themselves with positive and supportive social role models. These include adult mentors both inside and outside the home and peers, creating a web of or *network of support* (see Appendix A).

Results from one study demonstrated that increasing social support in antisocial children and youth reduced aggressive behaviour measured two years later (Dubow & Luster, 1989, in Dubow & Reid, 1994). The authors hypothesized that those youth in supportive environments may be more able to develop adaptive (and therefore longer term) means of coping within their social environments. The improved social network may act as an informal arena for

solving problems in a prosocial manner. Perhaps youth in supportive environments gain self-esteem, security and feelings of mastery over situations. Rutter's matrix would suggest that support may buffer children from risk, but also may reduce negative chain reactions and increase coping skills by introducing an individual that is 'just crazy' about the child.

Involvement in extracurricular activities may also increase task mastery, regulatory skills, and social support through healthy peer and adult friendships. Improved self-efficacy and self-identity, as a result of this support and feelings of confidence, could then lead to the opening of further opportunities for the child. Involvement in socially acceptable organized childhood activities may provide exposure to prosocial peers and adults, enhancing the internalizations of these positive attitudes, values and beliefs. This may serve as a mechanism to prevent risk exposure or reduce its impact on the child.

Results from one study converged with findings from the 1992 Carnegie Corporation report that spotlighted the role that productive use of time might play in successful adolescent development (Eccles & Barber, 1999). In this longitudinal study with 1259 adolescent males and females,

researchers found clear evidence that participation in extracurricular activities during high school provided a protective context for both academic failure and involvement in risky behaviours. The activities were operationalized as one of five clusters including prosocial activities, performance activities, team sports, school involvement, and academic clubs.

Adolescents who participated in prosocial activities (primarily church attendance and participation in volunteer or community-service activities) showed the strongest protection, with high academic achievement and low rates of involvement in risky behaviours. The authors hypothesized that extracurricular activities may increase exposure to positive values and norms, increase self-esteem, create opportunities for skill and attitude acquisition, increase membership in important social networks and assist with identity and peer formation (Eccles & Barber, 1999).

Role of protective factors. It is clear that research has identified broad-based individual, familial and social/contextual protective factors. Just as there are risk factors leading to increased negative outcomes, so too are there factors that may reduce maladjustment outcomes in the presence of risk (Grossman, Beinashowitz, Anderson, Sakurai, Finnin & Flaherty, 1992; Masten et al., 1990).

These protective factors are not just the opposite of risk (Loeber & Farrington, 1998; Rutter, 1988). Rather, they are factors that may come into play later and counteract earlier risk (Rutter, 1987).

Results from studies show that as many as 60% of children and youth considered at high risk for dysfunction and disorder do not follow that direction when a number of protective factors are engaged (Smith, Lizotte, Thornberry, & Krohn, 1995; Werner & Smith, 1982). However, resilience to one problem does not necessarily indicate good overall functioning or problem avoidance (Rutter, 1988, 1990, 2000). The key is how to extend resilience into other domains/parts of life as well. The management of risk may be achieved through the engagement of *protective mechanisms*.

The important concept of protective factors is now well-established in the multidisciplinary literature (Garmezy, 1995; Rutter, 1994). However, little is known about the processes and mechanisms inherent in this gift of resilience. *Resilience* is defined as the capacity to overcome stress and adversity, and suggests individual responses to risk factors (Winfield, 1994). It is critical to study and understand how some children and youth succeed despite overwhelming odds against them. Factors influencing

resilience may be viewed as dynamic correlates or protective processes that foster resilience. It is important to recognize that resilience is an interaction between the characteristics of the individual and the environment. Little research has been done on protective mechanisms, correlates and interactions in cases of already existing child psychiatric problems and behavioural symptoms.

Rather than simply studying which individual child, family and environmental factors are protective, researchers have been striving to understand how these factors contribute to positive outcomes (Luthar, 1999). As well, more conceptualizations of protection or resilience as 'relative or circumscribed' rather than 'absolute or global' have emerged in the contemporary research (Luthar et al., 2000). The early description of some children as 'invulnerable' is now seen as misleading, as it implied an absolute evasion of risk. What seems clear is that protection involves a developmental progression, and as such, new vulnerabilities or strengths often emerge throughout life (Luthar et al., 2000; Masten & Garmezy, 1985).

Attention to the underlying protective mechanisms and relative nature of resilience is critical to advancing

theory and research within the field, and for designing appropriate prevention and intervention strategies (Luthar, 2003; Luthar et al., 2000; Rutter, 2000). Other scientific challenges continue to exist in the evolving field of the psychology of resilience.

Empirical and theoretical concerns. Despite general agreement of the existence of protective factors, researchers have experienced difficulties in adequately operationally defining characteristics of or mechanisms associated with their presence (Garmezy, 1993, in Winfield, 1994; Grossman et al., 1992). Without question, 'resilience' has been variously defined in the literature. The conceptualization between conditions of risk and manifest competence are different by different researchers (Luthar et al., 2000). Disagreement exists as to whether resilience is a personal trait or a dynamic process, and whether the terms 'protection', 'vulnerability', 'resilience', or 'resilient' are mutually inclusive or exclusive.

Luthar (1993) argued for genuine efforts to create central terms in resilience research by incorporating differentiated terms. For example, 'protective' and 'vulnerability' process might be terms used when overall effects on at-risk children's adjustment are positive

versus negative in direction. Luthar also strongly advocated for *main effects* to be separated from more complex *interactive processes* through elaborated functional labels that indicate both evidence and directionality of the interactive processes (Luthar, 1993, 2003; Luthar et al., 2000).

If resilience is viewed as a continuous variable, Luthar suggested there is a certain set of problems in stability (Luthar, 1993). For example, some research has found that if main effects were used, robust effect sizes for protective factors have been found (for a review, see Luthar et al., 2000) but for studies requiring interaction effects to infer a protective process, effect sizes were small and often unstable (Luthar, 1993; Luthar & Zelazo, 2003). As such, many researchers, the most notable being Luthar, caution against the use of interactions because their more complicated models are open to difficulties linked with statistical testing (Luthar, 1993; Luthar et al., 2000). Luthar and Zelazo (2003) recently concluded that "empirically, statistical interaction effects are useful to establish specificity of processes...but their absence does not necessarily establish universality of influences...but can instead be an artifact of design" (p. 526). It has been suggested that the use of main effect

findings will likely be more robust despite the more conceptually intriguing interaction effects (Luthar et al., 2000).

Other researchers contend Luthar's strong arguments. In a response to Luthar et al. (2000), Roosa concludes, "Although I agree with many points...I contend that interactions are the heart and soul of resilience, arguably the most important and distinguishing feature of the construct" (2000, p. 567). Rutter (1990) suggested that despite the challenges that interactive effects present in the empirical protective research, the unique contributions of resilience research comes from its expectations of interactions that lead to positive development when competing developmental models predict poor adaptation.

It seems clear that refinement in the manner in which resilience is studied and reported is important. Work on resilience possesses substantial potential for augmenting our understanding of processes affecting at-risk individuals (Luthar et al., 2000). Several suggestions have been made to increase the robustness of evidence in the field. They include: specificity in discussing resilient outcomes (i.e. the use of terms such as *educational resilience* or *behavioural resilience*) (Luthar et al., 2000); improving measurements of risk and protective factors and

mechanisms that can be applied to very large samples (Roosa, 2000; Rutter, 2000); increasing sample sizes (Roosa, 2000; Rutter, 2000); and conducting multiple replications, or some combination of these and other improvements (Roosa, 2000). Additionally, Luthar and Zelazo (2003) suggested a need for studies testing theories of *mediators* and *moderators* in resilience.

Current knowledge. In the current state of affairs, there is little evidence as to whether protective factors act independently of risk factors to improve child outcomes, or whether they are only engaged when risk is already evident (Dubow & Reid, 1994; Garmezy, 1991). For many years, these questions were displaced as inexplicable (Ainsworth, 1962; in Rutter, 1990). However, psychology's interest in individual differences drove the continued interest in this phenomenon. Early resilience research in psychopathology (Garmezy, 1985) became later interest from forensic developmental psychology (resistance to delinquency, criminal offending, substance use), health psychology (health-enhancing behaviour), developmental psychology (resilience in face of familial/environmental stressors), and educational psychology (successful schools and academic achievement).

What has lagged profoundly behind in the quest for knowledge about resilience is a consistent theoretical foundation. Luthar and colleagues (2000) contend that "progress will remain seriously constrained as long as studies remain largely empirically driven as opposed to theoretically based, with little conceptual recognition of the importance of multiple contexts in children's development" (p. 552). The field has utilized, in point of fact, three major existing models, which if not unique to resilience, emphasize the critical influences of children's adjustment and reciprocal relations among these diverse influences and the child across domains.

The first model is derived from Garmezy's (1985) work identifying the three levels of operating risk and protective mechanisms (the child, family and community), a 'triarchic' (Luthar et al., 2000) framework. Most of the extant research has been organized according to this model (e.g., Luthar et al., 2000; Masten, 2001; Masten & Coatsworth, 1998; Rutter, 2000; Werner, 2000). The second model is based on Bronfenbrenner's (1977) ecological theory, and includes Cicchetti and Lynch's (1993) contemporary integrative ecological-transactional model of development.

The *ecological framework* emphasizes transactions between the child's ecological context (such as culture, neighbourhood and family) and the developing child. Research studies involving diverse risks such as family poverty or child maltreatment have been informed by this model (e.g., Cicchetti & Lynch, 1993; Cicchetti, Rogosch, Lynch & Holt, 1993). Lastly, is the *structural-organizational perspective* (Cicchetti & Schneider-Rosen, 1986; Sroufe, 1979). This model posits that there is a general continuity and coherence in the unfolding of competence over time. In this model, distal and historical factors are viewed as important to development, but active individual choice and 'self organization' are seen as critically important (Cicchetti & Tucker, 1994). A number of researchers have also adopted this perspective (Luthar, 1995; Wyman, Cowen, Work & Kerley, 1993).

Though the theoretical models above are not unique to the field of resilience, they do encapture the extant beliefs about the complex manner in which resilience functions. Theoretical perspectives allow researchers to develop complex hypotheses about child development, including maladaptive pathways, that when tested, further both empirical findings and philosophical ones.

Given that so many children experience concurrent mental health and behavioural problems, it becomes essential not just to examine risk factors associated with these, but also the protective mechanisms that reduce an individual's impairment or dysfunction due to the 'multiple' risk. Recent interest in comorbidity of internalizing and externalizing behaviour problems suggest these distinctions should be studied in light of protective factors that operate uniquely for pure or mixed syndromes.

Evidence suggests that mixed syndrome children experience more profound disturbance within multiple domains (Connell & Goodman, 2002). However, it is not known to what extent protection, in particular multiple protective factors, will interact with these multiple risks to influence child outcomes. Protective factors may act more efficiently or differently with either internalizing or externalizing disorders. There may be critical periods in which protection is more effective. Protective mechanisms may be able to be fostered through active prevention/intervention. These correlates may differ by developmental age, syndrome cluster, behavioural or emotional specificity, and gender. Further investigation examining multiple protective factors within children experiencing pure or mixed emotional and behavioural

symptomatology will answer more of these questions and further our understanding of resiliency.

Empirical studies of protective factors. It is critical to understand whether different factors or mechanisms increase resilience among children with distinct behavioural profiles. Smith and colleagues (1995) examined the differences in usefulness/engagement of protective factors in a group of substance using (i.e. associated with internalizing problems) and delinquent (i.e. associated with externalizing problems) youth. Data collected was from the Rochester Youth Development Study, a multi-wave panel study of delinquency and drug use. The panel included 1006 adolescents from public schools in Rochester, New York, a city with a diverse population and high crime rate (Smith et al., 1995). Boys and girls were selected by deliberate over-sampling for high-risk in grades seven and eight and followed for four and a half years. Data was collected at six-month intervals.

The research question was whether protective factors would be differentially related in each of the groups, even though etiological risk factors are similar (Hawkins, 1993; Jessor et al., 1991). Protective factors were chosen to be consistent with the general conceptual literature. These included four categories: family factors (such as parental

supervision and child's attachment), educational factors (such as reading and math percentiles, commitment to school and attachment to teachers), peer factors (such as peers with conventional values) and other resources (such as child's self esteem, and involvement in religious or prosocial activities).

Findings suggested that protective factors strongly overlapped for both delinquent and substance using youth, and that an additive effect may exist. Youth with many protective factors were four times more likely to be resilient than youth with few. The study answers some questions about temporal and developmental issues, as well as symptom severity. Youth who were highest risk had fewer baseline protective factors, gained more overall protection during the study, and in the short term, these factors were very effective in creating more positive outcomes.

For drug use (considered similar to internalizing problems), protective factors were particularly protective, with youth being three times more resilient when many were present. In the longer run, those with the highest levels of risk showed smaller and less consistent resilience. However, the authors noted that, for example, delinquency has a naturally extinguishing pattern. Thus, protective factors in the long run may have little effect for high-

risk youth who will desist being delinquent (or show other externalizing problems) on their own eventually. However, early protective factors continued to exert influence on drug use in the long run.

Results from other recent studies (e.g., Bowen & Flora, 2002; Fitzpatrick, 1997; Hawkins, Guo, Hill, Battin-Pearsin & Abbott, 2001; Jessor et al., 1995, 1998a, 1998b) have demonstrated that (1) interaction (risk by protection) effects occurred in samples; (2) more variance was accounted for by protective factors than risk factors; and (3) antecedent protection had a stronger relation to reducing problem behaviour than antecedent risk. Bowen and Flora (2000) analyzed both cross-sectional and longitudinal data from the North Carolina Division of Mental Health, Developmental Disabilities and Substance Abuse Services. The sample was drawn from the Willie M. treatment program, a directive resulting from a class action lawsuit in the early 1980's. The program was designed to treat children and youth with severe aggression and serious emotional disturbance.

Treatment for these youth included a variety of services provided by multiple agencies, including psychotherapy, psychiatric care, psychopharmacological intervention, special education, day treatment, therapeutic

foster home or group home placement, and secure residential services. Because of the variability in participants' needs and local availability of services, "no single typical Willie M. treatment" (p. 529) was described. However, the treatment included a focus on protective factors, such as reading skills, relationships with adults, social skills, positive beliefs and attitudes, exposure to positive discipline, and involvement in community activities.

The average age in the sample of 388 youth was 14.5 years. A count of twenty-five indicators of protection (i.e. reports from four domains on social skills in the home and school, church involvement, community activities, family and peer support, and school bonding) were used, a composite representing cumulative protection. Factors included targets of intervention to increase exposure to healthy activities and caring adults, and those designed to improve family relationships, parenting skills, child social skills and school experiences. Specifically, two types of protection, school and home social skills, were identified as having direct and mediating effects on behaviour. The outcome variable was a measure of aggressive behaviour. Twenty-six other risk factors were identified, including those that may indicate child difficulties at

meeting early developmental tasks, such as attachment and individuation.

Results suggested that building protection in interventions was more important than reducing risk (Bowen & Flora, 2002). Risk factors in the study were primarily static, historical features of the child and his or her environment that are not amenable to intervention in most mental health settings. Conversely, the protective elements were dynamic features of the individual and environment that are often targeted in interventions, such as social skills, relationships with adults and involvement in supervised activities. Additionally, initial level of protection was found to be significantly related to change in behavioural functioning over time.

The group with the lowest level of initial protection evidenced the greatest improvement in aggressive behaviour over time. This finding suggests that practitioners working with children and adolescents with the highest risk and lowest initial protection might expect the highest behavioural improvement over time. The relation between overall increases in protection and improved behaviour of the youth in the study may explain the fact that members of the low-protection group demonstrated the highest average amount of behavioural change. The authors suggested these

youth "had the most capacity to gain protective factors" (Bowen & Flora, 2002, p. 536).

Jessor and colleagues (1998a) studied psychosocial protective factors (such as parents who model healthy behaviour and youth's involvement in prosocial or church activities) in adolescent physical health behaviour. The outcome variables included healthy diet, regular exercise, adequate sleep, good dental hygiene and seatbelt use. Results suggested that strengthening both proximal (such as value on health) and distal (such as orientation to school) protective factors may help to promote healthful behaviours in adolescents.

Jessor and colleagues (1995) also studied psychosocial protection (factors such as orientation to school, positive relationships with adults, and prosocial activities) in relation to drinking, delinquency, marijuana use, and sexual intercourse in 7th, 8th and 9th graders in a large urban school area. A significant inverse relation was found between protection and risk in the prediction of these problem behaviours. A significant interaction existed between protection and risk in the prediction of problems, and protection was shown to moderate the relation of risk to problem behaviour. Interestingly, protective factors were significant predictors of change in adolescent problem

behaviour over time. The greater the earlier or antecedent protection, the greater the reduction in multiple problem behaviours in later years.

Finally, Jessor and colleagues (1998b) studied the role of risk and protection in the prediction of engagement in school and limited problem behaviour among disadvantaged adolescents. Significant risk by protection interactions were discovered. This suggested that the impact of risk could be reduced in more than one way - directly, by lowering the risk itself, but also indirectly, by providing high protection under exposure to risk (Jessor et al., 1998b). The authors suggested that a "fuller understanding of variations in adolescent outcomes - whether school related or problem-behaviour related - requires closer attention to the nature and function of protective factors than has hitherto been the case" (p. 206).

Specificity of protective factors. Results from these studies demonstrate the importance of protective factors with robust findings across gender, age and race/ethnicity. However, little research has specifically examined protective factors and their mechanisms for children with pure and mixed syndrome behavioural problems.

Dekovic (1999) examined risk and protective factors in the development of general problem behaviour among Dutch

adolescents. The sample consisted of 508 families with adolescents ranging in age from 12 to 18 years. The data was from a national program of research on children in the Netherlands, selected from a larger sample of 10,000 families. Measures included assessments of both internalizing (anxiety, depression and withdrawal) and externalizing problems (a wide range of oppositional and aggressive symptoms from disobedience to assaultive behaviour).

Risk factors assessed included individual factors (low academic motivation, and low self-esteem), familial factors (high parental strictness, and low parental support) and extrafamilial factors (associations with deviant peers and extreme peer orientation). Protective factors assessed were divided into individual attributes (active coping and high academic achievement), characteristics of the parent-child relationship (attachment to parents and parental monitoring), and factors in extrafamilial relationships (acceptance by peers and attachment to peers).

Results suggested that protective factors might have a differential role for different behavioural problems (Dekovic, 1999). Individual attributes such as self-esteem and academic achievement seemed to play an important role in both risk and protection for internalizing problems, but

appeared to be of lesser importance in externalizing behaviour problems. For example, adolescents with lower self-esteem tended to report more depressive moods, less satisfaction with life and less general well-being.

Several attributes of a youth's family seemed to be important for both types of behavioural problems, though their effects were relatively small. For example, parental monitoring (for internalizing problems) and attachment to parents (for externalizing problems) were among the strongest familial protective factors. Externalizing problems were much better predicted by familial and extrafamilial factors than by the individual characteristics of the adolescent. Interestingly, extrafamilial factors were more important predictors of problem behaviours than any other construct.

Protective factors for both internalizing and externalizing problems included acceptance by and attachment to peers. One of the strongest risk factors for both internalizing and externalizing problems was association with deviant peers. The authors suggested that family factors may have had their greatest effect on problem behaviour prior to the study assessment. Results from other studies suggest factors outside the home become more salient predictors of problem behaviours from late

childhood to adolescence (Dekovic & Meeus, 1995, in Dekovic, 1999; Patterson et al., 1992).

Results from the Dekovic study, however, failed to demonstrate moderator effects for protection, and suggested that risk was more important to prediction of problem behaviour than factors of protection. Other researchers have described similar findings (Grossman et al., 1992). The author suggested that, despite a relatively large sample size, power to detect interaction effects is low because the effect is often operating only in a small proportion of cases (Dekovic, 1999). The effects may actually be strong but they are not detectable with the regression procedures available. Dekovic concluded that protective factors in the Netherlands sample appeared to be beneficial for all youth, regardless of risk. This has been previously described as a 'compensatory mechanism', whereby these factors predict better outcomes at both high and low levels of adversity (Gest et al., in Dekovic, 1999).

Despite limitations of her study, Dekovic suggested that implications for intervention can be made from these results. This is one of the only studies to examine the differential role of protection in internalizing versus externalizing childhood problems. In her conclusions, the researcher recommended that the focus of adolescent's

treatment should be on environments (families and peer groups) that might be "mobilized to avert problems" (p. 682). Additionally, the author recommended further research into the nature of risk and protective factors in adolescence, and their role in predicting or averting dysfunction.

Given that there is great concern about the increasing number of children and adolescents displaying comorbid behavioural symptoms and being dually diagnosed, protective mechanisms functioning for these at-risk individuals is an important area of study. Implications for primary, secondary and tertiary prevention following investigation into these protective mechanisms could do well for the children, families, and sectors of society affected by these troubling and disabling disorders. The present study attempts to fill this gap.

The Current Study

The goal of this study was to examine behavioural comorbidity and associated protective factors among children and adolescents in a day treatment setting. More specifically, the way in which behavioural symptoms and protective factors function to affect outcomes was explored. A retrospective file review examined students with behavioural problems (internalizing, externalizing,

and mixed syndromes) sufficient to place them in this specialized school environment.

Information related to demographics, behaviour problems and protective factors was gathered through standardized child behaviour checklists, structured clinical observations, and social and psychological histories which were previously completed at the time of placement in the treatment program. Protective factors were assessed using the SAVRY Protective Factors Scale, which has been used in the forensic psychology literature to predict protection from delinquency and violence (Bartel, Borum & Forth, 2000, the *Structured Assessment of Violence Risk in Youth*, or the SAVRY.)

Protective factors that were chosen lie within the domains of individual, familial and social/contextual.

~~Individual~~ protective factors included resilient personality traits, positive attitudes towards treatment and intervention, and strong bonding to school. Examples of resilient personality traits include above average intellectual ability, physical attractiveness, good problem solving skills, positive responsiveness to others or likeability, healthy self-esteem, a good sense of humour, athleticism, creativity, capacity to self-soothe, adaptability to environment changes, and calm mood states.

Examples of positive attitudes toward treatment included active involvement by the child or youth in attempting to return to community school. This might include, for example, participation in planning sessions with the teacher and educational assistants, or compliance with a psychopharmacological trial. Strong bonding to school might be evidenced, for example, by regular attendance, high levels of interest, and motivation to succeed in school.

Familial protective factors included strong attachments and bonds to parents, guardians, or other significant adult(s). This was conceptualized as a warm and affectionate reciprocal relationship with a prosocial adult, conveying positive regard for the child. Additionally, family support as evidenced by attendance at treatment team meetings, compliance and engagement in active treatment and child's perception of parent availability was also included as a familial factor.

Social/Contextual protective factors included extracurricular involvement in activities and strong social support. Activities might include an organized community or sports group (such as Cadets or a youth group), a volunteer or co-op placement, or a positive after-school job. Strong social support would include individuals or a network of

individuals (peer-aged, or other adults) who may be rallied around the child to provide emotional support and concrete assistance during stressful periods.

Protective variables and behavioural profiles were explored both as main effects and in interaction with one another in the prediction of outcome. The primary short-term outcome variable was successful reintegration to community-based academic programs within a two-year period. The notion of successful outcomes is relative and contingent (Jessor, Turbin & Costa, 1998). From a developmental perspective, outcomes should relate to the tasks associated with certain life trajectories. For the children and middle adolescents of this sample, a key outcome is sustained involvement in and commitment to the educational system.

Successful navigation of the junior, intermediate and senior school grades is a generally accepted positive outcome for children and adolescents. School performance has been a marker of resiliency in research on child outcomes for decades. The children and youth in this day treatment sample have failed to navigate school at some point in their lives due to behavioural and mental health problems. A student's successful reintegration into the mainstream community schools represents a reduction in the

negative chain reaction following exposure to and involvement with risk. It is a marker of reduced risk, enhanced protection, and greater health and emotional well-being.

A student who successfully returns to their previous school following treatment, or to a new community-based program, will have evidenced reductions in their overall internalizing, externalizing and mixed syndrome behavioural problems. In other words, the behavioural and mental health problems of children who reintegrate from the day treatment program will have stabilized sufficiently to allow them to return to a more normalized academic setting. Given that this is the primary mandated treatment outcome of the day program, and others have used it as well (Brison, Rubino & Cordick, 1999; Jessor et al., 1998), reintegration to community school was considered a marker variable for successful outcome.

Hypotheses. Drawing upon past research in this area, it was anticipated that children with pure internalizing symptoms would likely fare the best overall in reintegration to community school. These children have been found to have less dysfunction than conduct disordered youngsters regarding family functioning and relationships, short-term response to treatment and long-term outcome

(Puig-Antich, 1982). Their 'acting in' or 'over controlled' symptoms are not as salient as conduct problems within the classroom. If one can facilitate an internalizing child to physically come to school (rather than refuse), teachers and other professional staff tend to be supportive of the student while there. However, those children with pure externalizing or 'under controlled' symptoms were predicted to be less successful, and mixed-syndrome children to fare the worst overall.

As suggested from previous studies (e.g., Lambert et al., 2001) externalizing children in this study were expected to fail more frequently in being reintegrated to community school within the treatment period. It was also suspected that they might require more intensive and costly interventions than youngsters with internalizing problems. Based on previous research, the mixed-syndrome children in the sample were expected to appear more like externalizers than internalizers in their behavioural symptoms at Intake. In other words, mixed-syndrome children were expected to generally have more externalizing symptoms (e.g. non-compliance or defiance), than internalizing symptoms (e.g. withdrawal). However, mixed-syndrome children's confusing array of acting in and acting out symptoms were thought to

further predict both short and long-term reintegration difficulties.

It was also predicted that children and youth who possessed a greater number of protective factors in all domains (i.e. *cumulative protection*) would demonstrate more successful outcomes (i.e. additive or multiplicative effect). Greater protective factors may ameliorate the multiple risks associated with behavioural problems, especially those with mixed and pure externalizing symptoms. For example, a youngster with ADHD may be more likeable when he has a resilient temperament, is good at sports, and is quite bright. This was thought to create attunement with peers and teachers and foster attachments to others, thus facilitating replacement to community school.

Finally, it was expected that there would be interactions between certain protective factors and behavioural profiles in the prediction of resilience in children and youth. Protective factors were examined directly to determine if they would function as positive factors (main effects) or only in the presence of risk (risk-by-protection interaction). 'Risk' was defined by assignment to a group of specific internalizing, externalizing or mixed syndrome problems.

A significant interaction of protection-by-type-of-risk (i.e. internalizing versus externalizing problems) would indicate a *moderating* role of protection, whereby protective factors have a different impact on problem behaviour of each syndrome group. Only one other study examined group-by-protection interactions (Dekovic, 1999), although that study examined levels of risk (i.e. high versus low). This current study examined group differences rather than level differences as in Dekovic's study. It was expected that total protection would have a greater effect on school reintegration for externalizing or mixed syndrome children as opposed to internalizing ones.

Different protective factors were also postulated to function differentially in pure- versus mixed-syndrome behavioural profiles. For example, consistent with research cited, attachment to parents was hypothesized to be a more important protective factor in externalizing and mixed-syndrome problems. Conversely, parental support was believed to be potentially more important for internalizing problems. Peer and other adult (e.g., teachers, counsellors) social support and involvement in extracurricular activities were considered protective factors of equal importance, regardless of problem behaviour type. Given the links between school attachment

(bonding), positive treatment attitudes and academic achievement, these two factors were predicted to be strong protective elements for all students. It was predicted that individual protective factors such as self-esteem and responsiveness might be more protective for internalizing rather than pure or mixed externalizing children and youth.

Method

Participants

Participants comprised a day treatment sample of 107 male students aged 7.7 to 16.9 years (M age = 13.16 years, SD = 2.03). The final sample was reduced from the larger original sample (n = 118) which included only 11 female students. The females were excluded from the sample due to their small n . The data for this study was collected by program staff at the time of treatment in the program. All available files of children attending the Dalhousie Section 20 Program at Hanley Hall, in the small community of Smiths Falls, Ontario, between September 1997 and March 2004 were selected.

Most of the participants were Caucasian (98%), with the rest of various descents (Haitian, Spanish-American, Native-Canadian, etc.). All spoke English as their first language. Approximately half (50.5%, n = 54) of the sample lived with their biological parents or legal guardians. A smaller but significant portion (43%, n = 46) lived in foster care or group homes. A small percentage (6.5%, n = 7) moved during the treatment period from home to foster or group care or vice-versa.

Overview of Treatment Program

The average length of stay in the day treatment program was 46.6 weeks ($SD = 22.79$) or approximately 1.2 school years. The range for treatment stay was 2 weeks to 28 months (or 3 full school years). Students were selected to the program based on demonstrated need for specialized mental health services, with symptoms serious enough to warrant a current psychiatric diagnosis. Academic needs were secondary. DSM diagnoses in the students included ODD, ADHD, CD, Reactive Attachment Disorder, Generalized Anxiety and specific anxiety disorders such as school phobia, or school refusal, Clinical Depressive Disorder or Dysthymia, Obsessive Compulsive Disorder, Post-Traumatic Stress Disorder, Bipolar Disorder, Autism Spectrum Disorder, Multiplex Developmental Disorder and Fetal Alcohol syndrome. Other diagnoses included severe comorbid learning disabilities (in 20.5%) and a few students with Developmental Delays.¹

A multi-disciplinary admissions committee comprised of school board officials, representatives from local child welfare and children's mental health services, clinical and

¹ Some students had 3 or more (multiple) diagnoses. Others had disorders which were not well defined in the literature as either internalizing or externalizing disorders (i.e., Fetal Alcohol syndrome, Autism spectrum disorder). If a student had a single disorder in this

school psychologists, and social workers, as well as the day treatment administrator selected students to participate in the program. Local school representatives, such as special education and classroom teachers, principals, and mental health counsellors may make presentations to this admissions committee. The merits of the referral application were assessed based upon admission committee ratings, completeness of the application, and match or 'goodness of fit' between the needs of the child and his/her fellow students. The final decision for placement lay with the program's on-site administrator.

No one single treatment comprised the program. Like the sample in Bowen & Flora's (2002) study, depending on their individual needs, participants received a combination of adjunct services provided by multiple agencies. These included group and/or individual behavioural therapy, art/play therapy, attachment-based therapy (Theraplay™), psychotherapy, psychiatric care, psychopharmacological intervention, and therapeutic foster home or group home placement. All of this was in addition to the day treatment milieu. All participants received case management services and clinical assessment. Although a single treatment cannot

category, they would have been excluded from the final sample. This was not necessary as no student had a single vague disorder category.

be described, all services were based on a comprehensive assessment of mental health and academic needs and strengths, which led to a multifaceted treatment plan tailored to the unique needs of the child.

Similar to the sample in Bowen and Flora's study (2002), the enhancement of protective factors, such as reading skills, bonding to school, relationships with adults, social skills, positive beliefs and attitudes, exposure to positive discipline, and involvement in community activities was a common feature of treatment. Sorting out issues of diagnoses and treatment with medication was also a 'pride of the program'.

Measures

Behavioural and Emotional Problems. The *Conners' Teacher Rating Scale, Revised, Long Version (CTRS:R-L)* (Conners, 1997) was used to assess emotional (internalizing), behavioural (externalizing), and mixed-syndrome problems at intake to treatment. This instrument is widely used in schools and treatment programs for the assessment of behavioural problems in children aged 3 to 17 years (e.g., Conners, Sitarennios, Parker & Epstein, 1998; Fantuzzo et al., 2001; Franklin, Biever, Moore, Clemone & Scamardo, 2001; Gianarris, Golden & Greene, 2001; Hale, How, Dewitt, & Coury, 2001). This instrument has also been

used at a screening level to measure the effects of medication on classroom behaviours (i.e. Fischer & Newby, 1991, in Conners et al., 1998) and to measure non-drug classroom interventions (e.g. Franklin et al., 2001; Kendall & Braswell, 1982, in Conners et al., 1998). The CTRS:R-L has good psychometric properties well documented elsewhere (for a review, see Conners et al., 1998).

The CTRS:R-L contains 59 items distributed across 13 domains. These include indices of conduct, social, learning and emotional problems. Learning problems are represented by the cognitive problems/inattention domain. Social problems are included as their own domain (see Appendix B).

Externalizing problems include the domains of Oppositional (A.), Hyperactivity (C.), Conners' ADHD Index (H.), Conners' Global Index: Restless-Impulsive (I.), Conners' Global Index: Total (K.), DSM-IV Inattentive (L.), DSM-IV Hyperactive-Impulsive (M.), and DSM-IV Total (N.). High scores in these domains are related to oppositional behaviour, hyperactivity, impulsivity, restlessness, ADHD symptoms, and inattention. Internalizing problems are represented in the domains of Anxious-Shy (D.), and Perfectionism (similar to obsessive-compulsive symptoms) (E.). One domain, Conners' Global Index: Emotional Lability (J.) represented extremes of both emotional and

behavioural responses. High scores in this domain are characterized by individuals prone to more emotional responses/behaviours (both crying and anger, etc.) than is typical.

All items were scored by classroom teachers on a 4-point scale (0 = not true at all; never, seldom, to 3 = very much true; very often, very frequent). The respondents were asked to rate each item according to how much of a problem each behaviour had been for the child in school in that month.

Behaviour problem groups. Participants were assigned to groups according to either:

1. a) an active diagnosis of an internalizing disorder, or
- b) an active diagnosis of externalizing disorder, or
- c) an active diagnosis of concurrent internalizing and externalizing disorders on Intake²; or
2. by treatment needs identified by the Admissions Committee Referral, and Initial Planning Meeting.

Treatment plans included specific references to IPRC (Individual Planning and Review Committee) designation, behavioural profiles and strengths and needs. Planning

² Active diagnoses were defined as DSM (III-R) or (IV) categorizations provided by qualified mental health practitioners. These were felt to be reliable, standardized measurement categories.

included references to: a) building strengths, b) reducing symptoms (such as anxiety, school phobia or refusal, aggression, off-task behaviour or defiance) and c) academic strengths and needs. Information from these documents permitted students to be assigned to groups according to their symptoms of internalizing, externalizing or mixed syndrome problems.

Mixed syndrome or comorbid behavioural profiles were more common in the sample than 'pure' disorders. The final sample was composed of 39 externalizing (36%), 20 internalizing (19%), and 48 mixed syndrome (45%) male students. The most common comorbid conditions were anxiety with attentional problems such as those characterized by ADHD. The least common comorbid condition was conduct disorder with depression. The most common single or 'pure' disorders were anxiety and ADHD. Most students ($n = 99$) were classified into the groups based on active DSM diagnoses, while the remainder ($n = 8$) were classified using treatment team criteria.

There were no significant group differences for time in treatment for the externalizing ($M = 46.03$ weeks, $SD = 3.73$), internalizing ($M = 47.99$ weeks, $SD = 5.29$) or mixed syndrome group ($M = 46.86$ weeks, $SD = 3.33$), $F(2, 106) = .046$, *n.s.*

Protective Factors. Protective factors in the areas of individual, familial and social/contextual domains were assessed during file reviews using the *SAVRY Protective Factors Scale* (Bartel et al., 2000). The SAVRY is an instrument used to measure risk for violence in youth aged 12 to 18 years. The SAVRY relies on professional judgement to assess risk (and protection). The instrument contains 30 items distributed across three risk domains (historical, social/contextual, and individual/clinical) as well as one protective domain (protective factors). For the purposes of this study, only the 6 protective factors were of interest. Given that the extant literature cites general protective elements within these 6 areas, with robust findings across age, gender, culture and type of behavioural problems, the SAVRY Protective Factors Scale was selected for use. This portion of the instrument is familiar to the principal investigator, as data was collected extensively with it as part of another study in a similar children's mental health centre in Ottawa, Ontario.

The Protective Factors Scale of the SAVRY includes three items in the individual, one in the familial, and two in the social/contextual domain (see Table 2). Protective Factors were coded dichotomously as present (0) or absent (1). Some additional resilient personality characteristics

in the individual domain were coded, drawing upon previous robust associations with school achievement and mental health outcomes (e.g., Borum et al., 2002; Kumpfer, 1999; Masten & Powell, 2003; Smith et al., 1995). These included IQ, responsiveness (likeability) and self-esteem.³

Social support was also further divided into one familial characteristic and one social/contextual characteristic (support of peers and other adults). The range of total protective factors coded in this manner was from 0 to 9. For reporting statistical results, the sum of the transposed numerical values was referred to as the Protective Factors Total representing *cumulative protection*. A total score of 0 through 3 was considered as low protection, an individual with less than four protective factors. Four or more protective factors, a score of 4 to 9, was considered higher protection.

³ Several additional protective factors were also coded at the individual level, including problem solving ability, sense of humour, athleticism, ability to self-soothe, creativity, adaptability, calm mood states, and physical attractiveness. However, for conceptual and statistical reasons (i.e., to reduce the number of statistical analyses), these were not included in the present study. Luthar and Zelazo (2003) suggested that research decisions in this regard must be based on coherent conceptual rationale reflecting high relevance to the specific questions answered. Whereas other factors (e.g., creativity, music ability, athleticism or sense of humour) may be protective, they

act in a manner which does not shield a child from academic risk, but independently yield benefits such as frequent success experiences (Luthar et al., 2000).

Table 2

*Protective Items Adapted from the Structured Assessment of
Violence Risk in Youth (SAVRY, Bartel et al., 2000)*

Individual	P1. Resilient Personality Traits
	a. Above Average Intelligence
	b. Responsiveness (Likeability)
	c. Self-esteem
	P2. Positive Attitudes Towards Treatment and Intervention
	P3. Strong Bonding to School
Familial	P4. Strong Attachments and Bonds
Social/Contextual	P5. Extracurricular Involvement in Activities
	P6. Strong Social Support
	a. Family
	b. Other

The psychometric properties of the SAVRY Protective Factors have not been directly investigated in published research. However, the SAVRY itself has been validated in several studies (for a review, see Borum et al., 2002, 2003) and acceptable inter-rater reliability has been found. An experienced research assistant measured inter-rater reliability of the Protective Factors Scale for this study through independent measurements of over 11% of the total sample. As seen in Table 3, Cross-tabulation analysis confirmed excellent reliability (percentage agreement ranged from 83.3% to 100%).

Table 3

*Inter-rater Reliability of Items Adapted from the SAVRY
Protective Factors Scale (Bartel et al., 2000)*

	Percentage Agreement
Protective Factor	
IQ	11/12 = 91.6%
Responsiveness	11/12 = 91.6%
Self-esteem	12/12 = 100.0%
Positive Treatment Attitudes	12/12 = 100.0%
School Bonding	12/12 = 100.0%
Attachment	11/11 = 100.0%
Family Support	11/12 = 91.6%
Support Other	10/12 = 83.3%
Extracurricular Activities	11/11 = 100.0%

Note. n = 12.

Overall, students in the sample seemed to have a relatively high level of protection. The majority of students in the sample (72.9%, $n = 78$) had between 4 and 7 protective factors. The mean for total protection was 4.95 ($SD = 1.91$).

Outcome Measures

The primary outcome variable was *reintegration to community school*. Reintegration was coded on a three-point scale where 1 = *unsuccessful reintegration*, 2 = *reintegration with some difficulties* and 3 = *successful reintegration*. *Unsuccessful reintegration* was operationalized as an inability to return to a more normalized academic setting within the maximum time permitted, or failed attempts to reintegrate. *Reintegration with some difficulty* was operationalized as final successful reintegration, but with prior difficulty, requiring a modification to the original treatment and/or reintegrating planning. *Successful reintegration* was defined as a return to a more normalized academic setting within the maximum time permitted, or a fully successful attempt to reintegrate.

Students varied in the time required to begin a reintegration process to community school. The mean time to reintegration was 41.81 weeks ($SD = 9.46$). The range of

time to reintegration was 6 weeks to 28 months. The majority of students (52%, $n = 56$) were successfully reintegrated with few concerns to community school within a two year period. Another 20% ($n = 21$) were reintegrated but with some problems. Finally, 28% ($n = 30$) were not successfully reintegrated. It is important to note that within this group of unsuccessful students were a portion that were discharged from the program prematurely, against clinical advice. Some of those students would have been successfully integrated had they remained in treatment.

Procedure. Experienced day treatment classroom teachers coded the measures of problem behaviour (CTRS:R-L) at the time of placement in the treatment program. The Clinical Director, a registered clinical psychologist, reviewed all the measures, scored, and interpreted the raw data. The protective factors and the index of reintegration outcome were retrospectively coded for the study by the principal investigator, based on information collected from a review of institutional and academic file information.

Results

Overview

Preliminary analyses were performed to evaluate diagnostic integrity (assignment of students to one of three groups), and to control for age differences. Primary analyses were then conducted to test the hypotheses around relations between groups, the protective domains and the outcome variable; group differences in protection and reintegration success; and relations between protective factors, group and reintegration.

Testing for diagnostic integrity. Mean Conners' scores at entry were compared for each of the three groups to provide an assessment of the diagnostic integrity of group assignments. Indices were divided into externalizing problems (Oppositional and Conners' Global Index: Total or CGI: Total), internalizing problems (Perfectionism and Anxious/Shy) and mixed syndrome problems (Emotional Lability). As Table 4 indicates, the MANOVA for Oppositional and CGI: Total yielded differences as expected between the three groups, $F(4, 87) = 3.62, p < .05$. Follow-up ANOVAs showed significant group differences for subscales Oppositional $F(2, 87) = 3.83, p < .05$, and CGI: Total, $F(2, 87) = 2.59, p < .08$. Students assigned to the

externalizing group had the highest mean scores on these subscales, followed by the mixed syndrome group.

Table 4

*Mean (SD) Conners' Entry Scores in Externalizing,
Internalizing, or Mixed Syndrome Groups*

Conners' Index	Externalizing	Internalizing	Mixed
Opp	73.76_a (14.15)	61.43_b (14.83)	71.86_a (15.05)
CGI	71.03_a (14.09)	60.90_b (15.14)	68.52_{ab} (13.21)
Perf	51.07_a (7.88)	59.08_b (16.45)	57.27_b (10.87)
A/S	65.50 (12.62)	66.00 (17.11)	69.09 (12.59)
E Lab	73.78_a 15.94)	59.08_b (14.72)	70.93_a (15.28)

Note. $N = 85$ (28 E, 13 I, 44 M).

Opp = Oppositional, CGI = CGI: Total, Perf = Perfectionism,
A/S = Anxious-Shy, E Lab = Emotional Lability.

Means with different subscripts differ significantly from
each other at the .05 level.

Internalizing students had the lowest mean scores on these externalizing indices. For Oppositional scores, post-hoc analyses (LSD multiple comparisons) revealed that the externalizers and mixed group had significantly higher T-scores than internalizers. Externalizers also had significantly higher CGI: Total scores than internalizers.

The MANOVA for internalizing subscales of Perfectionism and Anxious/Shy scores yielded mixed results in differences between the groups, as seen in Table 4, $F(2, 85) = 3.54, p < .05$. The follow-up group ANOVAs revealed significant group differences for Perfectionism $F(2, 85) = 3.49, p < .05$, but not for Anxious-Shy. Post-hoc analyses revealed significant differences between the groups for Perfectionism scores, with externalizers having lower T-scores than both the internalizers and mixed group. However, for Anxious/Shy scores, no significant differences between groups were found. There was a trend for the pure externalizers to score the lowest on this index, followed by the internalizers and then the mixed syndrome group, though it did not reach statistical significance.

ANOVA results for Emotional Lability scores yielded significant differences between the groups $F(2, 81) = 3.89, p < .05$. However, unexpectedly, the externalizing group had the highest mean scores on this index, followed

by the mixed group. For the subscale of Emotional Lability, post-hoc analyses revealed significant differences between internalizers (with the lowest mean scores) and both externalizers and mixed group.

Controlling for age differences. Given the large age range of the students (7.7 to 16.9 years, $M = 13.16$ years, $SD = 2.03$) ANOVA analyses were performed. Results indicated that the three groups differed significantly by age $F(2, 106) = 4.16, p < .01$. Post-hoc analyses revealed that the externalizing (M age = 12.9 years, $SD = 2.1$) and mixed groups (M age = 12.8 years, $SD = 2.0$) were significantly younger than the internalizing group (M age = 14.3 years, $SD = 1.6$). However, Pearson-Product moment correlations showed no relation between age and reintegration success ($r = -.10, n.s.$). Age was also not correlated significantly with total protection ($r = .01, n.s.$). Nevertheless, subsequent analyses were computed with age serving as a covariate.

Group Differences in Reintegration Success and Protection

The purpose of these analyses was to examine potential differences between groups for both total protection and reintegration success. Results from a one-way ANCOVA (with age as a covariate) indicated a trend for differences between the groups in reintegration success $F(2, 106) =$

2.69, $p = .07$. The internalizers had the fewest problems reintegrating ($M = 2.63$, $SD = .19$), and the mixed syndrome group had the most ($M = 2.08$, $SD = .12$). Externalizers' mean score was closer to the mixed group than the internalizing group ($M = 2.24$, $SD = .14$).

Post-hoc (LSD) analyses were conducted, revealing that the internalizing group was significantly more successful in their reintegration attempts than the mixed group ($p < .05$). To examine the potential that total protection or age confounded this result, a second ANCOVA (with age as a covariate) was performed to examine group differences in overall protection. The results showed no significant differences between groups for cumulative protection $F(2, 106) = .22$, $n.s.$

Relations Between Protection and Reintegration

Several analyses were then conducted to assess the effect of individual and total protective factors on successful reintegration to community school. As shown in Table 5, total protection was significantly and negatively correlated with all Conners' scores, with the exception of Perfectionism. Students with more protective factors had fewer overall behavioural problems at the beginning of treatment. Additionally, total protection was strongly positively correlated with reintegration success. Students

with more protective factors had the greatest success in reintegrating to community school.

Table 5

Correlations Between Total Protection, Entry Conners' Scores and Reintegration Success

	Total Protection
Conners' Domain	
Oppositional ($n = 88$)	-.28**
CGI: Total ($n = 87$)	-.29**
Perfectionism ($n = 85$)	-.09
Anxious/Shy ($n = 86$)	-.32**
Emotional Lability ($n = 82$)	-.32**
Reintegration Success	.56**

Note. $N = 107$ for Total Protection and Reintegration success scores. * = $p < .05$. ** = $p < .01$.

Interactions Between Protection and Group Membership

A 2x3 ANCOVA (with age as a covariate) was performed to examine the differential role of protection in 'pure' versus 'mixed' syndrome behavioural problems. Specifically, the interaction between group and total protection in the prediction of reintegration success was examined. Two categorical independent variables were used. Total protection (high versus low) and group (internalizing, externalizing or mixed syndrome) were entered as main effect and interaction variables. The dependent variable was reintegration success.

Results, seen in Table 6, indicated that total protection did not interact with group to predict reintegration, $F(2, 106) = .10, n.s.$ There was a strong main effect for total protection $F(1, 106) = 30.81, p < .001$. Similar to the correlation results, this suggests better reintegration outcomes with higher total protection, regardless of group identification. Children in the higher protection group ($M = 2.63, SD = .10$) reintegrated significantly more successfully than children in the low protection group ($M = 1.72, SD = .13$).

Table 6

*Analysis of Covariance for Reintegration Success with Group
x Total Protection*

Source	<i>df</i>	<i>F</i>
Group	2	1.96
Total Protection	1	30.81**
Group x Total Protection	2	.10
S within-group error	99	
Total N	106	

Note. *** = $p < .001$

Finally, a series of ANOVAs were conducted to assess main effects and interactions of conceptually selected protective factors in the Individual, Familial and Social/Contextual domains in the prediction of successful reintegration (see Table 7, Table 8).

There were several significant main effects for protective factors in all domains. Main effects (indicated by significant *F*s) were found for individual factors of resilient personality (positive responsiveness and self-esteem), positive attitudes towards treatment, and strong bonding to school (see means in Table 9 and ANOVA in Table 7). Main effects were found for the familial protective factor strong attachment to parents (see Table 8). Finally, as seen in Table 8, main effects were found for social/contextual protective factors of involvement in extracurricular activities and strong social support of others (peers and other adults). Regardless of group membership, children who had more positive responsiveness, higher self-esteem, more positive treatment attitudes, attachment to parents, strong support from other adults, stronger bonding to school or who were enrolled in extracurricular activities demonstrated more successful reintegration to community school.

Significant main effects were not found, however, for the individual protective factor IQ, or the familial protective factor of strong support from family (see Table 7, Table 8). However, significant interaction effects were found for group x IQ and group x responsiveness (see Table 10). This indicated that these individual protective factors appeared to function differently for children in different groups.

Table 7

*Analysis of Variance for Reintegration Success with
Protective Factors in the Individual Domain*

Source	df	F
Individual		
IQ	1	1.20
Group x IQ	2	4.90***
S within-group error	101	
Responsiveness	1	13.10***
Group x Responsiveness	1	3.80*
S within-group error	102	
Self-esteem	1	3.80*
Group x Self-esteem	2	.62
S within-group error	101	
Positive Treatment Attitudes	1	21.50***
Group x Attitudes	2	.62
S within-group error	101	
School Bonding	1	13.00***
Group x School Bonding	2	.42
S within-group error	101	
Total N	107	

Note. * = $p < .05$. *** = $p < .001$

Table 8

*Analysis of Variance for Reintegration Success with
Protective Factors in Familial and Social/Contextual
Domains*

Source	df	F
Familial		
Attachment	1	8.20**
Group x Attachment	2	1.30
S within-group error	100	
Family Support	1	1.32
Group x Family Support	2	.14
S within-group error	101	
Social/Contextual		
Support Other	1	5.20*
Group x Support Other	2	.35
S within-group error	100	
Extracurricular Activities	1	14.30***
Group x Activities	2	.66
S within-group error	97	
Total N	107	

Note. * = $p < .05$. ** = $p < .01$. *** = $p < .001$.

Table 9

Mean Reintegration Scores (SD) as a Function of Protection

Reintegration Scores	
Protective Factor	
IQ	
Protection	2.23 (.92)
No Protection	2.25 (.86)
Responsiveness	
Protection	2.36 (.81)
No Protection	1.56 (.89)
Self-esteem	
Protection	2.62 (.74)
No Protection	2.15 (.87)
Positive Attitudes	
Protection	2.48 (.73)
No Protection	1.32 (.72)
School Bonding	
Protection	2.40 (.79)
No Protection	1.44 (.78)

Reintegration Scores	
Protective Factor	
Attachment	
Protection	2.48 (.78)
No Protection	2.02 (.95)
Family Support	
Protection	2.37 (.84)
No Protection	2.13 (.88)
Support Other	
Protection	2.36 (.82)
No Protection	1.94 (.91)
Extracurricular Activities	
Protection	2.57 (.70)
No Protection	1.95 (.90)

Follow-up simple effect analyses were performed to determine which groups differed in their reintegration success with the presence of these protective factors. Individual independent sample t-tests were performed for each behavioural group divided into protection versus no protection on both IQ and responsiveness.

As depicted graphically in Figure 1, results unexpectedly showed that internalizers with high IQ had significantly poorer reintegration success, compared to those internalizers without this 'protective' factor, $t(18) = 3.63, p < .01$. IQ was not related to reintegration success for children in the externalizing or mixed group.

Responsiveness acted as a protective factor for externalizing children only. Mean reintegration scores for externalizers with high responsiveness (likeability) were significantly higher than those externalizers without this protective factor (see Figure 2), $t(37) = -3.85, p < .001$. Responsiveness did not predict reintegration success for mixed syndrome children. It is important to note that all internalizers were rated as having this protective factor.

Table 10

Mean Reintegration Scores (SD) as a Function of Protection for Externalizing, Internalizing, or Mixed Syndrome Groups

Protective Factor	Reintegration Scores		
	Externalizing	Internalizing	Mixed
IQ			
Protection	2.57 (.79)	1.50 (1.00)	2.27 (.90)
No Protection	2.19 (.90)	2.81 (.54)	2.05 (.85)
Responsiveness			
Protection	2.45 (.79)	2.55 (.83)	2.18 (.80)
No Protection	1.17 (.41)	-----	1.80 (1.03)

Figure 1. Interactions between group (risk) and protective factors in predicting reintegration success.

Figure 2. Interactions between group (risk) and protective factors in predicting reintegration success.

Discussion

The goals of this study were to examine the incidence and implications of pure- versus mixed-syndrome behavioural problems, as well as constructs of protection from risk in a sample of children and adolescents in a day treatment academic program. Among the results, there was evidence of comorbidity of behavioural problems in a majority of the students, a significant negative relation was found between cumulative protection and entry-level behavioural problems, and a strong positive effect of total protection on successful reintegration to community school was indicated. Additionally, results from the study found significant effects of individual, familial and social-contextual protective factors for positive child outcomes. Finally, preliminary support was found for the notion that certain individual protective factors (e.g., IQ, responsiveness) may interact with behaviour problem type in the prediction of outcomes. Results pertaining to these factors are discussed in turn.

Comorbidity

The co-occurrence of both internalizing and externalizing behavioural problems was found to be quite prevalent in the students in this sample. Of the 107 boys, 48 (45%) were classified as having mixed syndrome problems.

'Pure' externalizing problems were the second most common reason for referral to the program (36% of the sample) followed by a still significant portion of boys with 'pure' internalizing problems (19%). This finding converges with the clinical literature that suggests comorbidity of childhood problems is more the rule than the exception (e.g., Offord, Lipman & Duku, 2001; Overbeek et al., 2001). For example, Garnefski and Diekstra (1997) found the co-occurrence of behavioural and emotional problems in epidemiological samples in the range of 31% to 57%, while Offord (1995) demonstrated in the Ontario Child Health Study (OCHS) that 68.2% of children aged 4-16 had at least one other concurrent psychiatric diagnosis.

The most common comorbid conditions in the current study were anxiety with attentional problems such as those characterized by ADHD. Both Lahey (2002) and Lambert (2001) and their colleagues reported similar findings among samples of children and adolescents. This led the researchers to suggest that ADHD has an above average comorbidity with the internalizing spectrum of anxiety. In the current study, the least common comorbid conditions were CD and depression, a result which converges with other research findings (e.g., Loeber et al., 1990). For example, Loeber and colleagues found that internalizing problems in

middle and older children were more associated with ADHD than CD.

The distribution of problems in the current sample challenges a belief that internalizing problems among boys are rare, especially in intrusive day treatment settings (e.g., Ebata et al., 1990). For example, while gender differences for childhood internalizing problems have been inconsistently reported in the literature (e.g., Alliance of Five Research Centres on Violence, 1999; Ebata et al., 1990; Rutter, 1990), many still believe that boys are unlikely to respond to stress with 'expression in thought and turning inward' (Glick & Zigler, 1990). Although boys in this sample had fewer problems with pure internalizing symptoms than pure externalizing or mixed syndrome problems, a major goal of the program was the treatment of anxiety and school phobias, and a significant portion were classified within these symptom profiles.

Similar results have been previously reported in the same population of children. A preliminary study of the Dalhousie program (Brison, Rubino & Cordick, 1999) found that between 1996 and 1999, 15-34% of the students were 'over' while 26-59% were 'under' controlled. These researchers reported that the "mean percentage of under controlled students (55%) has remained relatively constant"

(Brison et al., 1999, p. 5). Another 3-12% of students were classified as 'other', and according to the current Clinical Director, would likely represent a portion of mixed syndrome students (Rubino, personal communication, 2004).

Thus, a mixed clinical picture for children and youth was demonstrated in the current study. Many children had several different but concurrent diagnoses. This comorbidity was found across age and developmental stages. This suggests that the co-occurrence of externalizing and internalizing problems in this sample may not just be artifactual or as a result of developmental amorphisms as others have suggested (e.g., Nottelmann & Jensen, 1995). However, the expression of a disorder may change in individual children with age or developmental stage, and a follow-up study of students in the sample would be prudent to test that alternate hypothesis.

The validity of classification of students to one of three groups (internalizing, externalizing or mixed syndrome) was examined by comparing groups on entry level Conners' behavioural problem scores. The CTRS-R:L (1997) defines symptomatology in several domains as seen in Appendix B. Externalizing indices selected included Oppositional and CGI: Total, while Internalizing indices

included Anxious/Shy and Perfectionism. One index, Emotional Lability, was selected as it contains symptoms of both internalizing and externalizing problems.

Results showed that at intake to the treatment program, children classified as externalizers had the highest reported oppositional and general behavioural problems scores, followed by those who were deemed 'mixed syndrome'. Those children identified as internalizing had the lowest scores on externalizing indices. Therefore, the classification to one of three groups according to either intake diagnoses or treatment plans was validated by the actual *externalizing* symptomatology displayed by the child while in the treatment program.

In terms of *internalizing* problems, findings were not as clear. For example, results indicated that both the internalizers and mixed group had more problems with Perfectionism than did the externalizing group. However, the groups did not differ significantly for problems with Anxiety/Shyness, though there was a trend for the pure externalizers to have the fewest symptoms. Perhaps the Conners' index of Perfectionism is less susceptible than that of Anxious/Shy to boundary classification problems as described in the literature (Nottelmann & Jensen, 1995). The diagnostic criteria for Perfectionism may discriminate

between separate behavioural and emotional symptoms more sufficiently than for Anxiety/Shy. It seems possible that more general social impairment is reflected in the Conners' index for anxiety and shyness, leading to a higher rate of non-specific symptomatology being endorsed (Achenbach, 1991). Although this is speculation, other researchers have endeavored to ameliorate similar problems with multicollinearity remedies and boundary classification modifications (e.g., Achenbach, 1991; Caron & Rutter, 1991).

The Conners' index of Emotional Lability was found to discriminate between the groups, though not quite as clearly as expected. Both externalizers and mixed syndrome students had more reported problems in this domain than internalizers, rather than just students with mixed profiles, as had been predicted. Perhaps the externalizers and mixed group were both more likely to demonstrate the 'acting out' symptomatology related to this index such as overt crying or temper tantrumming. For example, externalizers tend to have difficult or 'fussy' temperaments and trouble controlling one's behaviours when stressed or inflamed (Farrington, 1995). Internalizers in this sample may have been more likely to withdraw when

feeling emotional or overwhelmed, resulting in fewer endorsements of the symptoms within this index.

Alternatively, as mentioned previously, problems with construct independence may have affected the findings, resulting in externalizing children reported as having more labile emotional reactions than the other two groups. Moreover, mixed syndrome children also had more reported symptoms in this area than internalizers. Therefore, this finding does support the original hypothesis that children with mixed problems would show more symptoms of co-occurring internalizing and externalizing problems than would those pure internalizers.

It was hypothesized that the mixed syndrome group would display symptoms more indicative of externalizers than internalizers. For example, it was expected that the mixed syndrome children would have teacher endorsements of more overall 'acting out' than 'acting in' problems, though both would be evidenced. The mixed syndrome group did appear more similar to externalizing rather than internalizing students on *externalizing* behavioural indices such as Oppositional behaviour, but not on *internalizing* behavioural indices such as Perfectionism (where they shared more similarity with the internalizers).

Although this finding was not in keeping with the original hypothesis, it conceptually extends the literature that supports mixed problems as a true phenomenon and not a result of classification or boundary artifacts (e.g., Keiley et al., 2003). In other words, the mixed group of students were much like the 'acting out' group when they were displaying those symptoms, but just as likely to seem like the 'acting in' students when displaying those. The co-occurring emotional and behavioural symptoms of mixed syndrome students *may* have had some effect on reintegration success.

Group Differences in Reintegration

Inclusive education is an almost uniquely Canadian model, although other countries have indicated great interest and admiration in this practice (Hutchinson, 2002). The Canadian Charter of Rights and Freedoms guarantees rights for minorities and specifically named persons with special needs, with accompanying responsibilities of the government and institutions to ensure these rights are maintained (Weber & Bennett, 2004). The Charter specifies the use of the least intrusive treatment and educational alternatives as part of the interventions required under an inclusive society (Hutchinson, 2002). Inclusive education is defined as the

'mainstreaming of exceptional children with special needs into the regular classroom' (Hutchinson, 2002, p. 9). The current Ontario policies state that an Identification, Placement and Review Committee (IPRC) must be held to move children from the mainstream into modified or intrusive programs such as the Dalhousie Section 20 (Hutchinson, 2002). These policies also mandate provisions for the return of the child to the 'regular classroom with appropriate special education services' whenever that meets the student's needs, and within a reasonable time frame (Hutchinson, 2002, p. 9). Weber and Bennett (2004) concluded that "no restricted placement is ever regarded as permanent" (p. 43).

The maximum time permitted in the Dalhousie program was two full school terms. The majority of students (72%) in the sample were successfully reintegrated to community school within this period, as was expected. A small portion of this 'successful' sub-sample were reintegrated but with significant revisions to their original treatment or reintegration plans. Even within the externalizing group of students, apprehension or fear over returning to community school often created significant problems for the child, reintegration assistants and classroom teachers. Given that the construct of anxiety rises in children during novel

situations or transitions (Ebata et al., 1990), this temporary difficulty with reintegration in some students is not unexpected.

The proportion of youth with this type of academic/treatment outcome is similar to findings from other samples measuring global success or 'making it', especially for findings with girls (see Jessor et al., 1998). Extant literature often cites girls as evidencing greater success than boys on general health and social outcomes, and to have greater school engagement and lower behavioural problem scores (Jessor et al., 1998). Perhaps the social and contextual factors which may contribute to girls' success (such as adult monitoring and support) (Loeber & Farrington, 1998), are similar to those found in the highly engaging and insular environment of the current study's setting.

It also appears as if children and youth in the current study experienced greater success in the program than did those in the first few years of operation. For example, a preliminary study of the Dalhousie program (Brison et al., 1999) ranked reintegration success on a 5-point Likert scale from 1 (*left program, unplanned*) to 5 (*no problems*). A score of 3 or above was considered as 'making it' (Brison et al., 1999).

The mean rating for the intermediate class sample was 2.52, while that for the younger class was 3.40. Therefore, it would appear as if younger rather than older children in this preliminary study were more successful. The authors reported that a possible distinction between the two class results was that there were more conduct disordered adolescents in the intermediate class, and these youth had "few controls and little positive adult influence...therefore our setting was not appropriate" (Brison et al., 1999, p.6).

Of the total sample in the preliminary study ($n = 52$), 44.2% were reintegrated within a two year time period, with as little as 'some problems'. Of those reintegrated, 39% were over controlled, 47.8% were under controlled and 9% did not fit either category. The authors noted that among intermediate students "Nine also went to a more restricted setting, three of them after trying integration unsuccessfully... and two more remained in the program" (Brison et al., 1999, p. 3). In terms of junior students, "there were three who went directly to more restricted settings without first trying to reintegrate...there were also a number who did not noticeably change their behaviour, but were able to stay at the Dalhousie school

without numerous suspensions or withdrawals" (Brison et al., 1999, p. 8).

It would appear as if many children's successful reintegration is confounded by variables quite apart from their behavioural problems. For example, Brison, Rubino and Cordick (1999) concluded, "cooperation from parents, caregivers and mental health resources is essential to successful outcomes...the level of cooperation and the diagnosis need to be used in combination so that resources aren't tied up by those who have little chance of being helped by the program" (p. 6). However, this is one of the only studies found to examine reintegration from such a small and intrusive clinical setting, and further replication of similar outcomes is necessary.

In the current study, a fairly significant portion of youth (28%) were not successfully reintegrated to community school. Consistent with previous research (e.g., Lambert et al., 2001; Nottelmann & Jensen, 1995), it was hypothesized that the majority of these students would be classified as having mixed syndrome or externalizing behavioural problems. There was a trend, though borderline significant, for the internalizing group to have the fewest problems integrating and the mixed group to have the most.

As described in results from previous studies (e.g., Anderson, 1994; Rutter, 1990; Wright et al., 1999) the students with pure internalizing problems showed a trend towards more successful reintegration to school, while those with co-occurring emotional and behavioural problems experienced a trend towards greater difficulty. Children with pure externalizing problems showed a trend towards outcomes in the middle of the three groups.

These trends may reflect the hypothesis that internalizing students are less salient 'annoyances' in classroom settings, and less threatening to the safety and rights of other students and teachers than children who display externalizing or 'acting out' behaviours, or a confusing combination of both (Puig-Antich, 1982). If this hypothesis is true, it seems possible that those pure internalizers may have experienced more successful school reintegration because their emotional problems, though serious, did not present as great a challenge for receiving teachers and schools than mixed syndrome or externalizing students. Other researchers have suggested that internalizing symptoms are less difficult concerns and have less severe longitudinal courses than externalizing problems (Ebata et al., 1990).

In the present study, results in this area only approached significance. However, the internalizing group did have significantly more reintegration success than the mixed syndrome group in post-hoc analyses. Therefore, at least partial support was also found for the notion that mixed syndrome or comorbid children appear to have significantly more problems than children with other behavioural problems. Kusché and colleagues (1993) reported similar problems for comorbid psychopathology, concluding that those children "demonstrated dysfunction that was more severe and global in nature" (p. 172). Children with co-occurring conditions may be less responsive to treatment, require longer and more intensive interventions and present uncomfortable and confusing challenges for their teachers and caregivers (e.g., Capaldi, 1991, in Davies, 2003).

Perhaps as Kusché et al. (1993) suggested, the comorbid children in the current study experienced more severe difficulties with all aspects of cognitive processing, academic work and classroom behaviour. Additionally, it seems possible that for some children with internalizing problems, anxiety or depressive symptoms may "clear up completely following intervention" (Rutter, 1990, p. 30). Internalizing symptoms may generally have a better prognosis than externalizing or mixed symptoms, as Rutter

(1990) suggests. However, these hypotheses were only partially supported by the data in the current study.

Possible reasons for the lack of a stronger statistical finding are the small sample size within groups (especially Internalizing), experimental error, or insensitivity in the measurement of the DV. Another explanation for weaker group differences may be that once children were removed from community school, they may have experienced difficulty returning to their classrooms or schools, regardless of whether they had problems with depression, anxiety or aggression. Once 'out of the system' many children may have been the object of both self- and public-discrimination.

Labelling or discrimination bias has often been cited in the educational psychology literature as a potential confound for the outcomes of special education students (Hutchinson, 2002, 2004; Weber & Bennett, 2004). For example, Weber and Bennett (2004) reported that "the stigma of behaviour disorders creates a lasting impression...affecting the opinion of teachers and peers, and it can contaminate matters for the student identified" (p. 82).

In the current study, receiving teachers, other students and the children themselves likely labelled the

child or youth as 'different'. Once placed in the 'behavioural category', exceptional students often find their history hard to escape, and must contend with an atmosphere where expectations govern the way others respond (Weber & Bennett, 2004). In the current study, this phenomenon may have created biases in the reintegration process when attempting to return a child to his former school.

Although the majority of youth were able to overcome these obstacles, a portion succumbed to them and experienced treatment failure. This failure represented a move to a more restrictive treatment setting, legal custody, another Section 20 program, or an unplanned discharge (against clinical advice, or 'ACA'). It is important to understand that some children were discharged prematurely by parents, Children's Aid Societies or Children's Mental Health Centres, when political, philosophical, jurisdictional or economic conflicts arose. According to the program's Clinical Director, a portion of these ACA students would have successfully reintegrated had they remained in treatment (Rubino, personal communication, 2004).

Another possible positive explanation for the failure to find robust group differences in reintegration success

is that all children may have been helped equally as a result of treatment, because of the multiplicity of the interventions. In other words, perhaps the mixed syndrome children fared equally as well because treatment effectively addressed both their internalizing and externalizing problems. For example, cognitive-behavioural skills training or psychotropic medical interventions which were utilized within the program have been found to treat both types of symptom profiles in the literature (e.g., Dekovic, 1999; Kendall et al., 2001).

Finally, a plausible explanation for the lack of group differences in reintegration success is that they do not exist. Little research has been directed to group differences of this nature for this type of 'educational resilience', reintegration to less restrictive educational treatment settings (Brison et al., 1999). Perhaps childhood behavioural problems are less of a concern in academic settings where the focus is on educational outcomes, standardized testing, classroom attendance and report cards (Kandell et al., 1988; Winfield, 1994). It seems possible that children might be as successful or unsuccessful whether they defy their classroom teacher or refuse to attend school (see preliminary study by Brison et al., 1999).

Perhaps group differences do not exist within this type of 'resilient outcome' but within other domains, such as involvement with the criminal justice system or successful friendship making (Dekovic, 1999; Kandel et al., 1988). However, with a larger sample size, over a longitudinal period, with the addition of both genders, and use of more sensitive outcome measures, it is suggested that these differences may indeed be found.

Extant literature (e.g., Lambert et al., 2001; Puig-Antich, 1982) suggests that the treatment of externalizing and mixed syndrome children may be more expensive and time consuming. If measured as *time in* the treatment program, this was not found in this sample. There were no significant differences in time in treatment between the groups. However, a child (such as a mixed syndrome or externalizing student) who might require a *longer* stay in treatment could only be granted minor extensions beyond the mandated 2 year maximum. Therefore, perhaps a portion of unsuccessful youth would have been at least partially successful had the treatment been *longer* in duration.

Although time in treatment would appear to be a function of a child's difficulty, in this sample it appeared as if there was not a 'rush' or expectancy to finish treatment sooner than within two years. For example,

as noted in the preliminary study (Brison et al., 1999), "children who were able to remain in the safety of the program without withdrawals gave caregivers a respite, since most of these children had previously been frequently suspended from school" (p. 8). Although a child performing well was encouraged to begin reintegration as soon as he or she was ready, children regularly were integrated at natural school entry points such as September or January.

As well, a greater length in treatment prepared the receiving school during the post-referral process. In this time, receiving teachers attended reintegration meetings, observed the child in the treatment classroom, and actively planned the reintegration specifics (Rubino, 2004, personal communication). During reintegration problems, opportunities for caregivers and inter-agency personnel to regroup without the added stress of full time child care, and then to formulate plans, was a major contribution of the program (Brison et al., 1999). As previously mentioned, some children faced discrimination in this period, further delaying their reintegration.

Role of Protection

The relations between protective factors, behavioural problems, group assignment and reintegration to community school were examined. It was hypothesized that total

protection (a cumulative index of protective factors) would be highly correlated with reintegration success, and negatively correlated with behavioural problems. This was found. Students with more total protection were more successfully reintegrated than those with less protection. Related to this, students with more total protection had fewer behavioural problems at Intake to the treatment program.

This finding converges with previous research on resilience (e.g., Luthar, 2000), which suggests the role of protective factors as having direct ameliorating (or *compensatory*) effects in relation to risk or adversity. In terms of the multiplicative effect of protection, this study extends the research which suggests 'less is less and more is more' (e.g., Smith et al., 1995). For example, Smith and colleagues (1995) found that youth with many protective factors were four times more likely to be protected from delinquency and substance use. Generally, the more protective factors that are present and engaged in a child's life, the better the potential outcomes may be.

Children in this sample with higher total protection showed significantly greater reintegration success than those with less. This finding of greater multiplicative effects held even among the single most 'protective'

factors, such as positive attitudes and school bonding. As in the Bowen and Flora (2002) study, children with existing risk (behavioural problems) increased their positive outcomes when they had more protective factors, and children with more primary protection had fewer initial problem behaviours.

The current findings are consistent with the ecological model (for a review, see Becker & Luthar, 2002) of risk and protective processes, and with Garmezy's (1985) three-part or triarchic model of influence. In the ecological model, it is believed that in most person-to-environment interactions, there will be a continuum of risk and protective factors acting within varying levels of the environment. The ecological environment is then the basis of intervention.

The current study reviewed a treatment program which exemplifies this approach from a gold standard perspective. Its goal is to identify, support, enhance and maintain the interconnectedness among the student, family, school, and larger community context which influence individual child outcomes. Children and youth with mental health problems need a co-ordinated inter-agency approach. The Dalhousie School represents a "unique private/public consortium for the provision of services for troubled children" (Brison et

al., 1999, p. 8). This multi-domain, multi-disciplinary, multi-systemic approach has been the focus of much contemporary research in child psychopathology (e.g., Cummings et al., 2000; Loeber & Farrington, 1998).

In the current study, at a macro (or distal) level (Cummings et al., 2000; Luthar, 2000), basic needs of the child (such as hunger, transportation issues or poverty) were partially addressed through the program's dedicated and caring professionals. This included offering free breakfast and lunch programs through fundraising efforts and personal pockets, transporting parents to meetings when necessary and providing funds to assist with the purchase of medication if family needs indicated this (Brison et al., 1999). In the more proximal environment of the student, beliefs about achievement, self-efficacy/worth and increased bonding to school were paramount to treatment interventions (Rubino, personal communication, 2004).

Garmezy's (1983, 1985) work on resilience suggests protective elements in the three domains of individual, familial and social/contextual to all be of importance to positive adaptation in the face of risk and adversity. The current study found protective elements in all three areas to be critical, and an important focus of prevention and intervention efforts. As others have suggested (see Cauce,

Hannan & Sargeant, 1992), it is important to consider the extent and nature of these effects in conjunction with one another. Rather than a single factor alone, this research suggests it may be the combination of protective factors that is most important.

In an effort to study the protective mechanisms underlying the individual protective factors representing cumulative protection, the differential role of protection within the groups was examined. Many mechanism hypotheses were suggested. First, it was hypothesized that protective factors as a whole would play more important roles for the externalizing rather than internalizing group. This was not found. The role of total protection strongly contributed to adaptive outcomes regardless or independent of what type of risk (behavioural problem) was present. This finding is in keeping with some previous literature which define protective factors as having a more "general pattern with psychopathology" (Steinhausen & Winkler-Metzke, 2001, p. 277).

Further analyses were conducted to examine the direct effects of individual protective factors within the individual, familial, and social/contextual domains. The significant effects of protective factors in all domains were found. Consistent with previous results (e.g.,

Kumpfer, 1999), individual protective factors of responsiveness (likeability), self-esteem, positive attitudes toward treatment and school bonding all were insulating mechanisms against the child's general behavioural problems. It was hypothesized that protective factors in the individual domain (such as self-esteem, IQ, or responsiveness) would be more important for internalizing problems and attachment to family would be more important for externalizing and mixed problems. Additionally, family support was believed to be more important for internalizing than other problems. Support from others, positive treatment attitudes and involvement in activities were all predicted to be protective for all three types of childhood behavioural problems.

The strongest effects in the individual protective domain were for positive treatment attitudes, responsiveness, and school bonding. Protective factors in the individual domain seem to increase the likelihood of a child's positive engagement with conventional society, hopefulness for a better future, sense of belonging to social institutions, mastery of developmental tasks and relationships with others. This finding converges with other research which identified the importance of a 'resilient temperament' (e.g., Borum et al., 2002; Hoge et

al., 1996), positive attitudes, values and beliefs (e.g., Loeber & Farrington, 1998), and engagement with school (e.g., Becker & Luthar, 2002) in protection against a variety of adversities.

Treatment attitudes. Positive treatment attitudes showed the strongest effects on the outcome variable for all groups of children. Given that prosocial attitudes, values, and beliefs are important factors in individual treatment response (e.g., Hoge et al., 1996; Loeber & Farrington, 1998), this is not a surprising finding. For example, Hoge and colleagues (1996) found that attitudinal variables constituted important 'buffering' factors in prosocial and non-delinquent activities. Thus, what schools or treatment programs can do to counteract negative peer culture or life adversity and to foster more positive attitudes in spite of the subcultural and social/contextual influences of at-risk children is extremely important (Winfield, 1994).

In the present study, students who actively cooperated with treatment by attending school, meeting with teachers to discuss progress, attending counselling sessions and generally being hopeful for a positive treatment outcome had the best reintegration success. A major emphasis in the program was on improving student's

perceptions of treatment and authority figures (such as schools, special education teachers and counsellors). This finding converges with previous literature which defines positive prosocial attitudes as one of the most significant predictors of long term positive outcomes (e.g., Loeber & Farrington, 1998).

Those youth with this protective characteristic are seemingly more likely to ascribe to a set of values, norms and beliefs that is congruent with conventional society. They may be less in denial of their problems, and more amenable to treatment. These individuals then may find they are 'buffered from risk exposure' or open to opportunities (such as the help which comes from professionals) which reduce the negative chain reactions associated with risk (Rutter, 1998).

A major shift in treatment focus over the last decade has been on dynamic risk and protective variables (Loeber & Farrington, 1998). Given that many risk factors may be static and unchangeable, treatment programs may look to enhancing protective elements which are changeable. Helping young people to develop better attitudes towards the help offered to them may offset some of the impact of environmentally driven risk factors (Buchanan & Flouri, 2001).

School bonding. School bonding was strongly related to positive attitudes in this sample, and was also highly protective for all students. School bonding has been defined as the "extent to which students feel personally accepted, respected, included and supported at school" (Gutman & Midgley, 2000, p. 228). The extant literature suggests "greater attachment to school promotes greater commitment to societal norms and values" (Becker & Luthar, 2002, p. 198). Schools have a significant influence on child and adolescent development (Entwisle, 1990). From the age of 4 or 5, children spend a large part of each day at school, and their experiences there may affect them in multiple ways (Zimmerman & Arunkumar, 1994). School bonding may be especially critical to the academic survival of students who are more likely to feel alienated and unaccepted in an environment that may seem incompatible with their own (Gutman & Midgley, 2000).

Many large intervention projects similar to this small-scale treatment program have endeavored to enhance school bonding in elementary classrooms (such as the *Child Development Project*, in Becker & Luthar, 2002; Haynes' & Comer's 1996, *School Development Program*). Especially in late childhood, school bonding becomes important when children's needs for non-parental adult mentors increase.

Often in community school, this is precisely when teacher-student relations weaken (Midgley, 1993). As a consequence of both the small classroom sizes (e.g., Pittman & Haughwout, 1987) and strong emphasis on building attachment to school (even getting children out of bed, dressed and driven to school), it seemed apparent that students in the current study benefited from school bonding in their efforts at reintegration.

The construct of school bonding also implies a supportive relationship with a teacher or mentor who may provide acceptance and supportive feedback, and who will not only promote social-emotional growth, but also create a more nurturing classroom environment, ameliorating other risks and their effects (Pianta & Walsh, 1996). Teachers may find that they are best able to improve the school belonging of students they personally find responsive, or 'likeable'.

Responsiveness. 'Responsiveness' or likeability was found to be strongly associated with reintegration success for all students, with the strongest findings for externalizers. This finding extends the literature on this resilient temperament or personality characteristic (e.g., Masten & Powell, 2003). *Responsiveness* is defined in the Oxford Dictionary as the *state of responding readily and*

with enthusiasm (Oxford University Press, 2001). Children with this characteristic may be viewed as engaging, interested, receptive, willing, perceptive and impressionable. These seem the very characteristics of the ideal classroom learner (e.g., Rutter, 1987; Winfield, 1994). Despite behavioural or emotional problems, likeability may exalt a child into a different level of relationship with others, where, in a moment of time, the child seems 'perfectly normal and likeable' (e.g., Garnezy et al., 1984).

A majority of the children in the current study's treatment program were rated positively for this characteristic. Perhaps the advantage of small classroom settings, intrusive treatment, intimate relationships with children and families and opportunities to see children in normalized environments may have created opportunities to better know and understand this personal child quality. Although likeability may be a stable construct, and may not be a valid intervention factor, treatment professionals may be able to construct their perceptions of children in a positive manner (Hutchinson, 2002; Winfield, 1994).

Once a child is seen as likeable, the child may respond to this and act in a more responsive manner (Garnezy et al., 1984). This may even serve to increase

their sense of self (Masten et al., 1988; Rutter, 1990). This 'circular' concept (Rutter, 1990) of interaction may help explain the current finding that *responsiveness interacts with group* to produce better reintegration outcomes. For example, for *externalizers*, this protective factor seemed highly significant. In other words, a likeable child with externalizing problems was much more protected than one who was not likeable. Responsiveness acted as a *moderator* of the effect of externalizing behaviour on reintegration success. This seems perfectly logical. For example, Wyman and colleagues (1993) found that children who had experienced violence and other adversity were less likely to exhibit disruptive behavioural problems when they were seen as likeable by significant others. Children who are likeable may also be seen as having more sociability (Masten & Powell, 2003). What is more complex is why 'likeability' is more important for externalizers than for internalizers or mixed syndrome children.

As mentioned, externalizing children can be 'noxious' and 'aversive' in classroom settings where their defiant, aggressive, impulsive and non-compliant behaviour may create structural and safety concerns (Glick & Zigler, 1990; Patterson, Reid & Dishion, 1992; Rutter, 1990).

However, a child with these 'acting out' behaviors who, in periods, is likeable, engaging and receptive, may, in point of fact, be on occasion 'delivered from their evil'. In other words, externalizing children who show glimmers of hope, resilience, or 'normalcy' are in fact quite readily forgiven, it seems, for their other outbursts. This sample examined boys and there may be some bias towards boys and their externalizing behaviour, a sort of 'boys will be boys' phenomenon (Barkley, 1997; Garbarino, 1999). When these troubled boys demonstrate positive responsiveness to professionals, parents and the community, others may be more likely to want to invest in them in order to 'pull for' more positive behaviour. Since externalizing behaviour is so salient, responsiveness may be such a dichotomy that it is even 'overemphasized' among this population of children (Rubino, 2004, personal communication).

Other behaviour problems (such as anxiety and depression) may, by their nature, be the antithesis of responsiveness (i.e., lack of engagement, lack of willingness) (Biederman et al., 1995; Glick & Zigler, 1990). Alternatively, other problem behaviours may not create the acute dichotomy between 'good' and 'evil' which externalizing behaviours may. In any event, this result extends the body of evidence (e.g., Kumpfer, 1999) on

resilient temperaments (specifically responsiveness), especially for children with disruptive behaviour problems. However, since 'likeability' may be a somewhat difficult construct to measure, the focus in the literature on resilience has been on more recognizable constructs such as self-esteem.

Self-esteem. A positive and realistic self-esteem was protective for all students in this sample, though with a smaller effect size than other factors in the individual domain. Self-esteem was not particularly protective for internalizing students, as had been predicted. Overall, fewer students were rated as having this protective factor than the construct of 'responsiveness'. Pioneer researchers such as Michael Rutter (1987) emphasized the need to focus on the mechanisms by which youth maintain their self-esteem and self-efficacy in the face of adversity. Newcomb and colleagues (1992) found high self-esteem to be predictive of lower drug use, while Rutter (1987) reported self-esteem to be linked with success and mastery in the school environment. However, self-esteem and self-efficacy are also learned through positive social interaction and successful accomplishment of tasks (Winfield, 1994).

Although much of the extant literature has seen self-esteem as important to a number of positive childhood

outcomes (e.g., Masten & Powell, 2003), it may represent a higher 'order' level of protection (Rutter, 2000). In other words, perhaps other factors, such as positive attitudes, school bonding or even responsiveness may be more initially important to creating positive adaptation and outcome. This is purely speculation. Once a child achieves some success, their self-esteem and self-efficacy may increase and become more important to ongoing adaptation (Rutter, 1987).

Alternatively, lack of earlier 'orders' of protection may result in persistent failure (Overbeek et al., 2001) and lower self-esteem. Self-esteem may then seem less important until some initial mastery is achieved (Rutter, 1987).

Additionally, Jessor et al. (1998) found low self-esteem to be a risk factor for poor school outcomes, but high self-esteem was not defined as a protective factor.

Self-esteem has been described as beliefs about one's abilities and attributes in domains such as social competence, academic or athletic skills and physical attractiveness (Jessor et al., 1998). These researchers saw low self-esteem as a risk factor because it may hamper academic effort and lead to disengagement from other school activities, while leading the way to other activities accompanying poor self-image (such as drug use). It may be as Rutter (2000) suggests, that the relative strength of

the protective element is what corresponds to its role in both risk and protection. Alas, some researchers have described a process of protection whereby some protective elements create pathways to ongoing future protection (see Gore & Eckenrode, 1994). Perhaps self-esteem is one of these 'later' elements.

Gender differences may be found in the protective element of self-esteem as well. For example, Werner and Smith (1992) found that high self-esteem at age 18 was more predictive of adult successful adaptation for women than for men. Perhaps a similar pattern exists with children and adolescents. Since this sample is entirely male, perhaps self-esteem would appear more robust with a replication of the study with females.

IQ. One individual domain that was (surprisingly) not protective overall was IQ (above average intelligence). The extant literature overwhelmingly regards IQ as a protective element against multiple poor outcomes (e.g., Werner & Smith, 1982, 1992). Intelligent children may have better verbal and problem solving skills leading to positive engagement with others (especially classroom teachers), involvement with academic prosocial pursuits and sophisticated ego development and insight (Werner & Smith, 1992). In terms of Hirschi's control theory (1969), it was

believed that high verbal intelligence would result in greater rewards in school, leading to school bonding and involvement with the conventional social order (Kandel et al., 1988).

However, the very earliest views of intelligence held that high intelligence was associated with insanity or a propensity for adjustment problems (Lombroso, 1891, in Grossberg and Cornell, 1988). High intelligence may place some children at direct risk for adjustment problems. Results from the present study found an *interaction between IQ and group*, in that, for *internalizers*, high IQ was seen as a risk or 'vulnerability' factor.

Vulnerability factors are involved in interactive relations with stress or risk (in this case, *internalizing group*) in predicting adjustment (Luthar, 1991). In a vulnerability process, certain individuals with high levels of an attribute (i.e., IQ) are more susceptible to increasing risk or poor outcomes than those low on the attribute (Luthar, 1991). In the current study, internalizers who were bright had poorer reintegration success than internalizers who were not. There was *no effect of IQ* for the other two groups.

Though several researchers contend this finding (see Garnezy, Masten & Tellegen, 1984), other studies (see

Compas et al., 1995; Luthar, 1991; Masten, 1982) have been consistent with the present results. Given that IQ by itself does not function as a protective or vulnerability factor in the current study, it is not possible to simply accept that intelligence is negatively correlated with adjustment, even within internalizing students.

However, Hollingworth (1942) contended that highly intelligent children were prone to more social and emotional adjustment problems. This negative stereotype was largely refuted by Terman's (1973) longitudinal studies, demonstrating convincingly that highly intelligent children tended to be better adjusted than the norm on a wide range of variables. In general terms, one perspective on the intelligence debate pits intelligence and adjustment as positively correlated, while the other pits it as negatively correlated.

One possible explanation for this debate is that the relationship between IQ and adjustment for internalizing students is curvilinear, changing from positive to negative at some point within the gifted range and is specific to context (Grossberg & Cornell, 1988). A determination of the point at which IQ becomes a liability rather than an asset to healthy adjustment is difficult. Perhaps for internalizing students, this determination point is lower,

more acute or more influenced by stressful transitions, such as reintegration to school.

Another possible explanation for potential adjustment problems in some high IQ children is that they arise from the child's difficulties coping in a regular classroom. Children with abilities profoundly above mainstream children may simply become more internalized (anxious and nervous). Perhaps, however, adjustment problems are possible in high IQ internalizing children for all the same reasons they are in others.

The high IQ in an internalizing child is such a remarkable attribute that it may be falsely perceived as associated with any adjustment problem the child develops (Grossberg & Cornell, 1988). The 'contrast effect' (Grossberg & Cornell, 1988) of high IQ coupled with internalizing maladjustment has an ironic, compelling quality that draws attention and may lead to superstitious reasoning about a causal connection between them. Finally, a troubled child might emphasize his or her talents 'negatively' - for example affecting an over-intellectualized arrogant manner, creating a link between internalizing maladjustment and intelligence that is secondary, not primary.

Luthar (1991) reported interactions between risk and intelligence as 'vulnerability' mechanisms. Luthar studied risk and resilience in 144 inner-city ninth graders with a mean age of 15.3 years. The study asked respondents to self-report on 46-plus measures of life stress which included both uncontrollable events (such as 'parents separated') as well as more controllable events (such as 'failing a grade' or 'losing a job'). Intelligence was measured by the Raven's Standard Progressive Matrices (SPM; Raven, Court & Raven, 1977).

Results from this research found that at low stress levels, intelligence was positively related to competence for school grades and classroom assertiveness. However, when the stress was high, the intelligent children appeared to lose their advantage and demonstrated competence levels (school grades and assertiveness) more similar to those of less intelligent children. The children in this sample viewed as 'resilient' that had experienced stressful life events also had significantly higher levels of reported psychopathology, primarily evidenced by increased depression and anxiety. Thus, one could infer that the intelligent children who appeared less competent under high levels of stress had symptoms similar to internalizers within this current study.

In a longitudinal study, Block and Gjerde (1994) examined the role of gender differences in personality characteristics in the manifestation of depression at age 18. Results indicated that females with high depressive symptoms at age 18 performed significantly higher on performance IQ subscale and full IQ scale as assessed at age 4. At age 14, these bright girls reported feelings of vulnerability, anxiety, somatization, concern with adequacy, rumination and feelings of little meaning in their lives (Block & Gjerde, 1994).

Perhaps intelligent children are highly sensitive to criticism, and may ruminate on adversity, stress or transition (Beck, 1976). Resilience has been seen as being interspersed with setbacks under certain circumstances (Felsman & Vaillant, 1987). Life stress or transitional events (such as school reintegration) are significant circumstances primarily as a function of the child's appraisal of them. Internalizing children are known to catastrophize thoughts and practice negative self-talk (Beck, 1976). These cognitive processes may inhibit a child's ability to develop active coping strategies.

For example, Steinhausen and Metzke (2001) found that performance stress served as a risk factor for internalizing problems for boys and girls. Some researchers

have suggested intelligent children may have higher levels of sensitivity to their environments, in particular under stressful conditions (Zigler & Farber, 1985). This greater sensitivity might account for more susceptibility to stressors for brighter children as opposed to those who are less intelligent.

The sample of bright children who were 'vulnerable' in this current sample to negative outcomes, were only those in the internalizing group. The question becomes: Did the child's IQ create an adjustment problem which included internalizing symptoms? What then about the internalizers who were not bright? Perhaps children who are bright may have a greater susceptibility to internalizing problems (see Hollingworth, 1942; Luthar, 1991), and then their giftedness creates problems for them during times of performance stress (such as reintegration) (Steinhausen & Metzke, 2001). Then, the bright children who already have susceptibility to internalizing problems are exasperated by the stress, and their IQ then functions as a *vulnerability mechanism*. Under this extreme stress, bright internalizers might become more reticent, obsessive, and withdrawn, or refuse to attend school, creating significant reintegration problems (Beidel, 1998).

Other high IQ children might react differently to the extreme stress of reintegration, acting 'outwards' or even utilizing new found skills learned in treatment to adapt to the stress. These children may then be treated differently by school personnel, in ways that ultimately are conduits to greater future adaptation.

Additionally, Luthar (1991) suggested that intelligence may be protective with regard to some areas of competence but not others. While intelligence may be protective against disruptive behaviours in the classroom (Masten et al., 1988), it may function as a vulnerability factor for other domains of competence such as assertiveness or achievement. Additionally, most studies on IQ as a protective factor have been on younger children, and Luthar (1991) contends that in older children and adolescents, increasing freedom from home and school may lead to a lower investment in school and to the use of talents in areas other than academic achievement.

The final possible explanation for this finding may be that the sample of bright internalizing students in this study simply 'over thought' the process of reintegration (Grossberg & Cornell, 1988). The potential absence of an appropriate school program, lack of intellectual peers or possible discrimination by family members, teachers, peers

or others to the child's intelligence, may simply have made a stressful time for an internalizing student 'that much worse'. It may not be the high intelligence of internalizers, but rather the consequences of high intelligence in some social environments which may have had a negative effect on adjustment (Grossberg & Cornell, 1988). Familial factors within the internalizing child's life, such as attachment to parents, could potentially be a moderator of the possible negative role of high intelligence (Grossberg & Cornell, 1988).

Attachment. Within the familial domain of this sample, effects of attachment but not family support on reintegration success for all students were found. Attachment was not found to be more significantly protective for externalizing problems. Attachment to at least one significant adult figure has been found in extant studies to be the single most important predictor of positive child outcome (Jenkins & Smith, 1990; Rutter, 1990, 2000). These results extend that finding. The only truly valid way to measure attachment, however, may be to use either rigorous self-report measurements with good psychometric data (see the *Parental Bonding Index*, Parker, Tupling & Brown, 1979) or naturalistic observations of

parent-child relations under stress, as some researchers have suggested (Schneider, Atkinson & Tardif, 2001).

Despite this measurement shortcoming and this study's inability to utilize either alternate measurement, relative attachment did seem to be protective for students. Attachment to parents may also be a 'lower order' protective factor predicting higher order mechanisms and factors (i.e., problem-solving skills, bonding to school) (Rutter, 1990). Sroufe (1988) implored theorists to respect the boundaries of attachment theory in predictions of resilience in later life. He argued for limiting attachment resilience to domains such as inner confidence, self-worth, and intimacy and closeness in interpersonal relationships (Sroufe, 1988).

Extant literature (e.g., Borum et al., 2002; Masten & Powell, 2003) cite warm and affectionate relationships with parents who "encourage and recognize a youth's competence, and convey an attitude of affection and acceptance" (Borum et al., 2002, p. 97) as strong protective factors for a host of negative child outcomes. Attachment difficulties, as measured by insecure, anxious or disorganized attachments (Ainsworth, Blehar, Waters & Wall, 1978) have been associated with serious delinquent and maladaptive behaviour (e.g., Levy & Orlans, 2000; Rubin, Bukowski &

Parker, 1998). Conversely, healthy attachment has been associated with insulation from antisocial and violent behaviour in childhood, adolescent and into adulthood (Fonagy, Target, Steele & Steele, 1997).

Results from studies suggest that healthy attachment to one's caregiver is the building block to all other social interactions and relationships in an individual's life (e.g., Bowlby, 1969; Rutter, 1988). For example, Bowlby (1969) proposed that children in infancy construct models of the world, significant persons within it, and the self. These 'internal working models' are states of mind that guide behaviour, becoming more sophisticated with age, and are then applied to the child's broadening social world (Bowlby, 1969). Models of others' behaviour (including the child's motivational attributions of others) also originate in this working model. These internal models are 'brought' from the home to school and may resist change even when they do not reflect accurately the reality of new playmates and adults (Schneider et al., 2001).

In the current study, children with strong and healthy attachments to parents may well have experienced less childhood fear and withdrawal, and more confident engagement with others in their daily school interactions, over those without this protective factor (see Manassis et

al., 1995, in Manassis, 2001; Rutter, 1988). For the externalizers and mixed group, attachment to parents was not significantly more protective. Measurement issues may have affected this finding, as discussed previously. In so much as it is a valid result, one can only speculate that for this group of children, within such a highly intensive, intrusive and supportive milieu, attachment to parents may not have been as relevant as the day-to-day experiences and interactions at school (Gutman & Midgley, 2000). These interactions were always 'seasoned' by the child's dosage of 'likeability', and as mentioned, this individual characteristic was more strongly significant for these youngsters.

Family support. A related construct, family support, was not identified as significantly important protection for students in this sample. Most of the resilience literature cites family support as important to successful school outcomes, especially for internalizing problems (e.g., Perkins & Borden, 2003). However, others suggest 'other adult' and peer support to be more significant (e.g., Dekovic, 1999).

Many parents of children with significant psychopathology become frustrated, disengaged, suspicious, disenfranchised or marginalized (Gutman & Midgley, 2000).

They may find it difficult to accept criticism of their parenting skills, advice on interventions, or even praise and support from interested professionals. Parents may feel "poked and prodded" to the infinitum when their child has extreme difficulty. Parents may also feel negative, alienated and impotent (Gutman & Midgley, 2000), and may face barriers that limit the time and energy needed for active involvement (McLloyd, 1993). Teachers and school personnel also have the power to encourage or deter parental involvement by their own beliefs and attitudes (e.g., Gutman & Midgley, 2000).

Likewise, the absence of family support may have caused or contributed to the child's difficulty in the first place (Rutter, 1990, 2000). Regardless of the dynamic, if family support is not as critical to a child's outcomes, there may be better prognoses for children who do not have it. This assumes, one suspects, that the child is receiving support and all the accompanied goodness it brings, from other relevant sources (such as teachers, coaches, friends, clergy, and neighbours) (Brison et al., 1999).

In the current study, given the average age of children as around 13 years, the impact of family support may have been evident prior to the study period. As

children reach middle childhood, there is a trend to seek support from non-parental adult figures (Becker & Luthar, 2002). Older children may seek out and be more protected by support within their broader social/contextual environments. Within these environments, this study found extracurricular activities and 'other support' to be strongly protective.

Extra-curricular activities. Children who were enrolled in positive pro-social activities had more successful school reintegration, regardless of type of behavioural problems. This finding converges with previous research (e.g., Eccles & Barber, 1999) that suggests, among other things, that extracurricular activities are related to educational attainment, protection from delinquency and mental health problems, and long-term adult successful employability. This study contributes to the research by extending the operational definition used in this design. 'Activities' were extended to include after-school part-time employment, co-op placements, volunteer opportunities, attendance at religious/spiritual events, and participation in regular after-school clubs, sports, youth groups or camps.

Children with severe behavioural and emotional problems who gain mastery, confidence, problem-solving,

conflict-resolution and life skills, and friendship opportunities through these activities seem strongly advantageous over others (e.g., Eccles & Barber, 1999). During these activities, these profoundly troubled children can experience normal play, leisure and development. Peer and adult contact of a pro-social nature in these activities may allow practice of valuable behaviours such as "helping, cooperating, negotiating, appropriately expressing emotions and recognizing other's feelings" (Borum et al., 2002, p. 93). Opportunities also exist for informal practice of adaptive skills and task mastery (Lipsey & Derzon, 1998).

Other support. Also within this social/contextual domain, support from others was protective for reintegration success. As mentioned, support from other peers and non-familial adults has been found in the literature to become very important in middle childhood (Gutman & Midgley, 2000). As children and adolescents become more autonomous, it is developmentally appropriate for them to seek assistance in their more distal environments than from the immediate family.

The majority of students in the current sample were rated positively for this protective factor. Most referrals to the program were supported by multiple agency

involvement and a child may have been 'supported' by all of the following: teacher, educational assistant, former teacher, future teacher, counsellor, psychologist, social worker, youth worker, and friends. In the earlier study of the program, Brison, Rubino and Cordick (1999) reported that "inter-agency support played a major role in the success of the junior children in the study. Mental health workers were more active and productive at this level than was the case with the intermediate class" (p. 7). It was also reported that the staff of the program had access to an extensive network of friends and relatives of the child in the community, and often received feedback from them on the outcomes of the program (Brison et al., 1999).

Support from others has been seen in the literature on coping, skill development, and emotional and physical well being (e.g., Cauce et al., 1992; Masten & Powell, 2003).

Children and youth with greater social support may be provided emotional and concrete assistance during stressful periods (Borum et al., 2002). Social support may also be protective in that it brings individuals to a child's genogram who may discourage anti- or non-social activities, give positive feedback and open up further opportunities for a child (Rutter, 1990). Werner and Smith (1992) reported that social support networks in a child's life

serve to reward the child's competencies and determination, and provide a belief system by which to live.

Issue of age. It was predicted that certain interactions between individual, familial and social contextual protective factors would be found. In terms of internalizers, none of the predicted hypotheses were supported. It may be that since internalizers in this study were significantly older than the other two groups, their developmental needs for certain protective factors and processes might be different. For example, a younger sample of internalizing children may have been more protected by self-esteem or possibly even IQ than was evident in this study.

Similarly, given the developmental appropriateness of the use of 'other' support over that of family, it seems possible that these older internalizers may, to a certain extent, have 'grown out of' their family protective requirements. For the middle-childhood-aged externalizers, attachment to family was not particularly protective, for perhaps the same developmental reasons. Attachment to peers and others may have been more important at that age than attachment to parents or caregivers. However, the literature on adolescence cautions against the withdrawal of parental support and involvement during periods when

adolescents need it as much as ever (Rutter, 2000). A 'perceived lack of need' by adolescents for parental support need not be met with a total abandonment of it. As with most parenting, supporting a young teenager is a 'delicate dance'.

Caveats and Directions for Future Research

There are some limitations and caveats to be considered in the interpretation of results from this study. These surround issues of *internal validity*, *external validity*, *measurement* and *statistical analyses*. Each of these will be discussed in turn.

In terms of *internal validity*, given the correlational nature of this design, causation must not be implied. Rather, results may be the product of reverse causation, third-variable causation, or reciprocal/circular causation. In general terms, all significant findings could have alternate explanations. For example, with regard to total protection and reintegration, perhaps successful reintegration contributed to increased protection rather than the reverse.

Alternatively, a confound may have existed which affected both protection and reintegration success (such as socio-economic status, or marital agreement among parents) (Coie et al., 1993; Zimmerman & Arunkumar, 1994). It is not

possible to "conclusively ferret out those aspects of the program responsible for success or failure" (Brison et al., 1999, p. 2). Given that not every piece of information could possibly have been collected, there may have been certain information that would help make better sense of the findings. Some of these potential confounds (such as age and total protection) were controlled for to increase internal validity.

Because the literature (see Luthar et al., 2000) cautions against the use of global outcomes in resilience literature, and *external validity* is threatened by a lack of generalizability, it is important to limit the results of this study to 'educational resilience' in mental health students. Given that girls were excluded from the analyses, caution around interpreting findings across gender is also obvious. It is also prudent to realize that resilience in one area does not imply inoculation in another. Human adaptation is composed of the "interplay between the context/ecology and the developing organism" (Perkins & Borden, 2003, p. 384). When the context or situation changes, so may one's resiliency (Zimmerman & Arunkumar, 1994).

Brison et al. (1999) reported that when integration outcomes are collected after the students have been back in

community school for only a short period of time, they may not reflect subsequent breakdowns or failures. Though conclusions may be made about the short-term academic outcomes of boys in this study, caution should be given to extending these to other domains (such as avoiding trouble with the law, health-compromising behaviours, or family adjustment) (Luthar et al., 2000). For example, the internalizers-by-IQ interaction finding might not hold for friendship success, employment access or family relations.

Measurement issues in this study primarily involve the use of as yet unstandardized instruments with relatively little known psychometric properties. Though the SAVRY Protective Factors Scale shows promising potential as a measurement of the most empirically supported protective factors, it is not meant as a stand-alone scale and lacks replication in study. The study was also limited by its exclusive use of reintegration as an outcome measurement. The use of other outcome variables, (such as "teacher reports of behavioural problems at new school within six months") is clearly warranted in future research. Certainly increasing the width, scope and length of this study, using multiple prospective measures from multiple informants, (i.e., including Parent Connors' behaviour reports), and

adopting repeated measures would add dramatically to the reliability, validity and strength of the study design.

The use of the reintegration index as the measure of outcome may have been affected by a reactivity response, i.e., children reacting (with anxiety in particular) to the reintegration process. As well, it is not possible to separate the program effects from the natural history of the child's mental health problems. That is, there may be a natural 'flow' for some or all problems from crisis to remission even without any intervention (Brison et al., 1999). Other outcome measures such as community delinquency, use of mental health services, long-term outcome and family disruption were not measured. Additionally, there are limits with retrospective designs. Though staff and administrators of the program were available for interview to confirm findings, a reliance on valid, present and complete documentation occasionally created difficulty. A prospective design would extend these findings in the future.

As well, in the current study, only some potential resilient personality traits were explored as protective factors. In future research, additional constructs could be included, such as problem solving skills, athleticism, physical attractiveness, part-time employment or

religiosity. Efforts to reduce *statistical analyses* problems such as this, and the use of conservative tests and multivariate procedures always have certain trade-offs. Future replications of this study could include the excluded variables to allow them more scrutiny without sacrificing statistical integrity.

The present findings converge with much of the previous work in resilience. These results help to clarify the role of protective factors as compensatory versus moderator variables. All of the protective factors which were significant across the behavioural groups functioned as *compensatory mechanisms*. These factors are critical in that many are the focus of treatment programs, such as the one in this study. Intervention programs that focus on enhancing protections such as bonding to school, positive attitudes, self-esteem and mastery, and facilitate children's resources/supports and participation in other activities, can be assured that their efforts may result in substantially better outcomes than even the reduction of risk. Protective processes such as those described may in fact regulate a child's actions and experiences in school over and above the influence of family, genetic, constitutional or environmental risk (Connell, Spencer, & Aber, 1994).

Mental health educational programs such as the Dalhousie program which focus on reducing behavioural problems and promoting positive behavioural and attitudinal change in children may reduce the need for costly and intrusive treatment services in the future (Conoley & Conoley, 1991). Brison and colleagues (1999) also reported that a strong academic program is a necessary part of the overall therapeutic program. Mental health considerations "often have a negative impact on school learning. However, repeated failure in school can intensify already existing mental health problems...concerted attempts are made to show that academic subjects can be mastered" (Brison et al., 1999, p. 2). Finally, it was reported that "Children's Aid Societies have indicated that the need for residential placements, both child welfare and mental health, has decreased as a result of the Dalhousie School programs" (Brison et al., 1999, p. 5).

This research also contributes to the existing literature as it is the first to demonstrate the use of the SAVRY Protective Factors Scale as a stand-alone instrument. This study also is one of the only to combine the evaluation of *comorbidity* with *resilience*, especially within a specialized treatment sample in rural Ontario. As well, although the study did not set out to exclude girls,

it seemed that being a girl was a protective factor on its own. Overall, girls were just not being identified as in need of this intrusive educational treatment program. As others have suggested, being female is a protective factor (Tiet et al., 2001; Werner & Smith, 1982). This study provides evidence that most girls in that catchment's area of Eastern Ontario do not have educational/behavioural problems (either internalizing, externalizing, or mixed) of sufficient severity to warrant a referral to this intrusive program.

Future research may be developed in multiple areas. Longitudinal studies of multiple risk and protective processes in childhood psychopathology, especially for comorbid disorders is required. Examining gender, cultural, religious, and racial variables for comorbidity and resilience is also important. Researchers should focus efforts on more sophisticated mechanisms and processes underlying the transmission of developmental psychopathology. Studies on prevention/intervention, in particular with comorbid problems, would be valuable to the real-life clinical applications of this study.

It seems clear that many children are experiencing the profound and disabling effects of childhood emotional and behavioural problems. These mental health issues, if left

undetected and unaddressed, through ineffective or absent interventions may lead to a number of truncated developmental attainments in millions of North Americans (Kessler, Foster, Saunders & Stang, 1995). Many existing intervention programs focus only on attenuating disruptive behaviours, and little on internalizing problems, comorbid issues and protective factors. Effective mental health programs are, however, a significant pathway to long-term productivity and employability (Knitzer, 1999). A multi-systemic, strengths-based approach to these problems is critical. As research informs policy, reform in children's services should serve to improve not just the immediate outcome, but also to create a 'cycle of continuous improvement' (Becker & Luthar, 2002).

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Appendix A

Individual and Psychosocial Protective Factors

Individual/Temperamental Characteristics of the Child

- Being female (e.g., Tiet et al., 2001; van Lieshout, Scholte, van Aken, Haselager & Riksen-Walraven, 2000; Werner & Smith, 1982)
- Easy temperament type (e.g., Macgowan, Nash & Fraser, 2002; Masten & Coatsworth, 1998; Rutter, 1985b, 1999; Smith, 1995; van Lieshout, et al., 2000; Werner & Smith, 1982, 1992)
- Independent, outgoing toddler (e.g., Werner & Smith, 1982, 1992)
- Positive responsiveness to others (e.g., Borum et al., 2002; Kumpfer, 1999; Kussin, 2002; Masten & Powell, 2003; Werner & Smith, 1992)
- Adaptability to environmental change (e.g., Borum et al., 2002; Rutter, 1974; Werner & Smith, 1992)
- Capacity to self-soothe or be soothed by others after stressful event (e.g., Borum et al., 2002; Macgowan, et al., 2002)
- Calm mood states (e.g., Borum et al., 2002; Macgowan et al., 2002)
- Self discipline (e.g., Kussin, 2002; Macgowan et al., 2002)
- Physical attractiveness (e.g., Kumpfer, 1999; Rutter, 1974)

Social Skills of the Child

- Good social skills (e.g., Bowen & Flora, 2002; Garnezy, 1983; Rutter, 1974; Winfield, 1994)
- Seen as likeable (e.g., Bowen & Flora, 2002; Garnezy et al., 1984; Kumpfer, 1999; Macgowan et al., 2002; Masten & Powell, 2003; van Lieshout et al., 2000; Werner & Smith, 1992; Wyman et al., 1993)
- Has a good sense of humor (e.g. Bowen & Flora, 2002; Garnezy, 1983; Masten, 1986; Werner & Smith, 1992)
- Demonstrates empathy and nurturance (e.g., Bowen & Flora, 2002; Ceconello & Keller, 2000; Kussin, 2002; Luthar & Zigler, 1991; Macgowan et al., 2002; Werner & Smith, 1992)
- Demonstrates sociability, cooperativeness, kindness, and generosity (e.g., Bowen & Flora, 2002; Macgowan et al., 2002; Rutter, 1974; Werner & Smith, 1992)

- Personal efficacy/competency (e.g., Kim & Cicchetti, 2003; Masten & Powell, 2003)
- Sense of adventure and freedom from distressing habits (e.g., Werner & Smith, 1992)
- Gets along with and attachment to peers (e.g., Bowen & Flora, 2002; Dekovic, 1999; Garmezy et al., 1984; Macgowan et al., 2002; Offord et al., 1992; Werner & Smith, 1982, 1992)
- Gets along with adults (e.g., Bowen & Flora, 2002; Garmezy et al., 1984; Macgowan et al., 2002; Werner & Smith, 1982; Wyman et al., 1993)

Child Competencies

- Above average intelligence and cognitive abilities (e.g., Borum et al., 2002; Dubow & Luster, 1994, in Dubow & Reid, 1994; Garmezy, 1983; Grossberg & Cornell, 1988; Kandel et al., 1988; Kumpfer, 1999; Masten & Powell, 2003; Rutter, Tizard & Whitmore, 1970, 1981; Terman & Merrill, 1973; Tiet et al., 2001; Werner & Smith, 1982, 1992)
- Good problem-solving abilities (e.g., Bowen & Flora, 2002; Felsman & Vaillant, 1987; Garmezy, 1983; Kussin, 2002; Luthar, 1991; Masten et al., 1990; Masten & Powell, 2003; Werner & Smith, 1982, 1992)
- Competence in communication skills (language) (e.g., Perkins & Borden, 2003)
- Good reading abilities (e.g., Borum et al., 2002; Buchanan & Flouri, 2001; Werner & Smith, 1982, 1992)
- Good school student (e.g., Dekovic, 1999; Felsman & Vaillant, 1987; Macgowan et al., 2002; Quinton & Rutter, 1988; Werner & Smith, 1982)
- Academic success and grade point average (e.g., Dekovic, 1999; Gutman & Midgley, 2000)
- Strong commitment and bonding to school (e.g., Becker & Luthar, 2002; Borum et al., 2002; Buchanan & Flouri, 2001; Gutman & Midgley, 2000; Hawkins et al., 2001; Hawkins, Doueck & Lishner, 1988; Herrenkohl et al., 2000; Hoge, Andrews & Leschied, 1996; Jessor et al., 1998; Laurie & Kelly, 2002; Morrison, Robertson, Pico & Fitzpatrick, 2003; Rutter, 1974; Tiet et al., 2001; Walker, 2001)
- Good reasoning, planning and delay of gratification (e.g., Borum et al., 2002; Jessor, 1991; Kumpfer, 1999; Macgowan et al., 2002)
- Active coping skills (e.g., Dekovic, 1999; Steinhausen & Metzke, 2001)

- Athleticism (e.g., Eccles & Barber, 1999; Garmezy, 1983; Kumpfer, 1999; Rutter, 1974)

Protective Perception (attitudes, values, beliefs)

- Child-perceived competency, realistic self-esteem (e.g., Borum et al., 2002; Bowen & Flora, 2002; Dekovic, 1999; Gutman & Midgley, 2000; Macgowan et al., 2002; Masten & Powell, 2003; Perkins & Borden, 2003; Rutter, 1987; Seifer, Sameroff, Baldwin & Baldwin, 1992; Steinhausen & Metzke, 2001; Werner & Smith, 1992; Wyman et al., 1993)
- Internal locus of control (e.g., Dekovic, 1999; Garmezy, 1983; Grossman et al., 1992; Luthar & Zigler, 1991; Macgowan et al., 2002; Werner & Smith, 1992; Wills, Gibbons, Gerrard & Brody, 2000)
- Ego development (e.g., Luthar, 1991; van Lieshout et al., 2000)
- Realistic hopes and expectations for the future (e.g., Gutman & Midgley, 2000; Masten & Powell, 2003; Perkins & Borden, 2003; Steinhausen & Metzke, 2001; Werner & Smith, 1992; Worrell & Hale, 2001; Wyman et al., 1993)
- Aspirations for college (e.g., Worrell & Hale, 2001)
- Independent mindedness (e.g., Macgowan et al., 2002; Werner & Smith, 1992)
- Inner faith (e.g., Bowen & Flora, 2002; Christian & Barbarin, 2001; Werner & Smith, 1992)
- Positive attitude towards intervention and authority (e.g., Andrews & Bonta, 1994; Borum et al., 2002; Bowen & Flora, 2002; Hoge et al., 1996; Loeber & Farrington, 1998; Macgowan et al., 2002)
- Intolerant attitudes toward deviance (e.g., Hawkins et al., in Tonry & Farrington, 1995; Jessor et al., 1995)
- Perception of strong sanctions for transgressions (e.g., Jessor et al., 1995)
- Sense of usefulness and belonging to a community (e.g., Garmezy, 1983)

Aspects of the Home Environment

- Socioeconomic advantages (e.g., Kumpfer, 1999; Masten & Coatsworth, 1998)
- Low family stress (e.g., Kumpfer, 1999; Masten & Coatsworth, 1998)
- Orderly household environment (e.g., Kumpfer, 1999; Masten & Coatsworth, 1998)
- First-born child (e.g., Werner & Smith, 1982)
- Smaller families with fewer than four children (e.g., Alles-Jardel, Malbos & Sanhes, 2000; McNeal, 1997, in Perkins & Borden, 2003)

- Parent with high school education or better (e.g., Rumberger, 2001, in Perkins & Borden, 2003; Werner & Smith, 1982, 1992)
- Parent consistently employed (e.g., Kussin, 2002; Werner & Smith, 1982)
- Parental religiosity (e.g., Christian & Barbarin, 2001)
- Regular church involvement (e.g., Bowen & Flora, 2002; Dekovic, 1999; Werner & Smith, 1982)
- Strong family cohesion (e.g., Garnezy, 1993; Grossman et al., 1992; Tiet et al., 2001; Velasquez et al., 2002)
- Family systems maintenance (e.g., Jackson, Sifers, Warren & Velasquez, 2003)
- Mentor and family support (e.g., Bowen & Flora, 2002; Christian & Barbarin, 2001)
- Alternate caretakers available to the family (e.g., Bowen & Flora, 2002; Seifer et al., 1992; Werner & Smith, 1982)
- Child-centered parenting (e.g., Kokko & Pulkkinen, 2000; Perkins & Borden, 2003; Steinhausen & Metzke, 2001)
- Rules, routines, curfews, parental monitoring and family rituals (e.g., Bowen & Flora, 2002; Dekovic, 1999; Felsman & Vaillant, 1987; Loeber & Stouthamer-Loeber, 1986; Tiet et al., 2001; Werner & Smith, 1982; Wyman et al., 1993)
- Discipline with discussion and fair punishment (e.g., Baumrind, 1971, in Steinhausen & Metzke, 2001; Bowen & Flora, 2002; Seifer et al., 1992; Wyman et al., 1991, 1993)

Parent-Child Relationship

- Secure mother-infant and parent-child attachment (e.g., Borum et al., 2002; Dekovic, 1999; Fitzpatrick, 1997; Hawkins et al., 1992; Masten & Powell, 2003; Perkins & Borden, 2003; Rutter, 1974; Werner & Smith, 1982, 1992)
- Child perception that parent cares (e.g., Bowen & Flora, 2002; Masten & Powell, 2003; Werner & Smith, 1982; Wyman et al., 1993)
- Warm and positive relationship with a parent (e.g., Anthony & Cohler, 1987; Bowen & Flora, 2002; Buchanan & Flouri, 2001; Masten & Powell, 2003; Rutter, 1975; Seifer et al., 1992; Werner & Smith, 1982; Wyman et al., 1991, 1993)
- Parents who direct child's education, are involved in child's day-to-day tasks, are aware of child's interests/goals, with positive expectations of their child, and who have a supportive spouse/extended family (e.g., Becker & Luthar, 2002; Buchanan & Flouri, 2001;

Gutman & Midgley, 2000; Masten & Powell, 2003; Rutter, 1990; Steinhausen & Metzke, 2001)

- Maternal empathy (e.g., Bowen & Flora, 2002; Cecconello et al., 2000)

Social Support Network/Contextual Factors

- Adult mentor outside of the home (e.g., Cohen & Wills, 1985; Freedman, 1989; Garmezy, 1993; Grossman & Resch, 1995; Masten & Coatsworth, 1999; Perkins & Borden, 2003; Rutter, 1987; Tierney, Werner & Smith, 1982, 1992)
- Attachment to any significant pro-social adult (e.g., Becker & Luthar, 2002; Garmezy, 1985; Rutter, 1990; Werner & Smith, 1982)
- Pro-social peer support, friendships and acceptance (e.g., Becker & Luthar, 2002; Christian & Barbarin, 2001; Dekovic, 1999; Eccles & Barber, 1999; Garmezy, 1993; Harter, 1990; Rutter, 1985, 1999; Seifer et al., 1992; Steinhausen & Metzke, 2001; Werner & Smith, 1982)
- Prosocial, vocational involvement and extracurricular activities (e.g., Borum et al., 2002; Bowen & Flora, 2002; Eccles & Barber, 1999; Felsman & Vaillant, 1987; Hoge et al., 1996; Kumpfer, 1999; Masten & Powell, 2003; Simourd, Hoge & Leschied, 1994; Werner & Smith, 1992)
- Church group (e.g., Anthony, 1974; Borum et al., 2002; Dubow & Reid, 1994; Eccles & Barber, 1999; Masten & Powell, 2003; Werner & Smith, 1992)
- Positive use of leisure time (e.g., Bowen & Flora, 2002; Carnegie Corporation of New York, 1992; Eccles & Barber, 1999; Luthar, 1991; Rae-Grant et al., 1989)
- Quality schools with reduced classroom size, more 'able students per identified children', purposeful leadership by principal, involved teachers & effective classroom management (e.g., Becker & Luthar, 2002; Comer, 1988; Entwisle, 1990; Haynes & Comer, 1996; Jessor, 1991; Masten & Powell, 2003; Maughan, 1988; Pittman & Haughwout, 1987; Rutter, 1979, 1987)
- High standards for school achievement, opportunities for significant student responsibilities, decision making, and life skills training (e.g., Kussin, 2002; Rutter, 1979, 1987; Smith et al., 1995; Werner & Smith, 1982)
- Quality of social services and healthcare (e.g., Masten & Powell, 2003)
- Neighbourhood resources and strong support outside the home (e.g., Garmezy, 1993; Masten et al., 1990; Masten & Powell, 2003; McClendon, 2003)

- Communities with a high level of participation and collective success in meeting challenges/crises (e.g., Kussin, 2002)

Appendix B

Examples of Items From the CTRS: R-L (Conners, 1997) in Each Domain

Domain	Item(s)
A. Oppositional	"defiant", "argues with adults", "sassy"
B. Cognitive Problems/Inattention	"forgets things he/she already learned," "lacks interest in schoolwork"
C. Hyperactivity	"restless in the squirmy sense", "has difficulty waiting his/her turn"
D. Anxious-shy	"is an emotional child", "shy, withdrawn", "feelings easily hurt"
E. Perfectionism	"seems over-focused on details", "is a perfectionist"
F. Social Problems	"does not know how to make friends", "appears to be unaccepted by group"
G. Psychosomatic	"stomachaches", "headaches"
H. Conners' ADHD Index	"disturbs other children", "cannot remain still"
I. Global Index: Restless-Impulsive	"fidgeting", "excitable, impulsive"
J. Global Index: Emotional Lability	"temper outbursts; explosive, unpredictable behaviour", "mood changes quickly and drastically"; "cries often and easily"
K. CGI: Total (general problem behaviour)	"fidgeting", "disturbs other children"
L. DSM-IV: Inattentive	"fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities"
M. DSM-IV: Hyperactive-Impulsive	"talks excessively", "runs about or climbs excessively in situations where it is inappropriate"
N. DSM-IV: Total	"talks excessively", "has difficulty waiting his/her turn"