2005

Assessment of strength-based functioning, behavioural problems, and adaptive functioning in adolescents with autism spectrum disorders and developmental disabilities

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Running head: STRENGTH-BASED FUNCTIONING

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

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Thesis submitted in partial fulfilment

of the requirements for Master of Arts

August 2005

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Your file Votre référence
ISBN: 978-0-494-15616-2
Our file Notre référence
ISBN: 978-0-494-15616-2

Acknowledgments

The writer would like to thank the principals, vice-principals, and special needs teachers of the seven public schools used for participant recruitment. A special thanks is also conveyed to the autism coordinator at Lakehead Regional Family Centre for her significant assistance in recruiting participants. The ethical review committees of the Lakehead Public School Board and Lakehead Regional Family Centre also warrant consideration for their assistance, as do Dr. Edward Rawana, Dr. Charles Netley, Dr. Nancy Johnston, Dr. Josephine Tan and Dr. John Jamieson for their insight and expertise. Great gratitude is also expressed to the primary caregivers of the adolescents who comprise the sample of this study. Lastly, the writer would like to express her sincere appreciation to her family for their unconditional support throughout the study process.

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Abstract

Autism Spectrum Disorders (ASD) are characterized by marked deficits in socialization. Along this spectrum, however, intellectual functioning varies. Individuals with low-functioning autism typically function in the moderate mental retardation range (IQ between 35-50), while higher-functioning individuals have average or above-average IQs. Because daily living skills (e.g., socialization) and cognitive functioning are important considerations in the diagnosis of autism spectrum disorders, much research has focussed upon these areas in comparing ASD individuals with those individuals with developmental disabilities (DD). However, minimal research focus has been allotted to the strengths of individuals diagnosed with these disorders as a differentiating feature. Specifically, very few studies have examined the connection between strengths, behavioural difficulties and adaptive functioning within these diagnostic groups. Comparison of individuals with these disorders with a sample of individuals with developmental disabilities may further strengthen the distinctness of these conditions based upon behavioural difficulties, IQ and adaptive functioning, as well as provide evidence of strengths potentially predictive of adaptive behaviour. Thus, the purpose of this investigation was to have primary caregivers (e.g., parents/guardians) complete two strength-based questionnaires, an adaptive measure and a behavioural checklist on adolescents with four different diagnoses. These diagnoses included Low-Functioning Autism (IQ below 70), High-Functioning Autism (IQ 70 and above), Asperger syndrome, developmental disability, and a control group with no formal diagnosis. The overall focus of this thesis was exploratory, however, some specific hypotheses were also tested. Results indicated different and unique profiles for each group in terms of strengths, adaptive functioning, and behavioural difficulties. Moreover, individuals with low-

functioning autism exhibited similar profiles to those with developmental disability, and individuals with high-functioning autism exhibited profiles similar to those with Asperger Syndrome. Specifically, individuals with low-functioning autism and developmental disability exhibited fewer strengths and adaptive functioning skills and greater behavioural difficulties, while those with high-functioning autism and Asperger Syndrome displayed greater strengths and adaptive functioning skills and fewer behavioural difficulties. Normal individuals also differed from the diagnostic groups in this respect, in that they exhibited far more strengths and adaptive functioning skills and fewer behavioural difficulties when compared to the diagnostic groups.

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

In a world where sociability is viewed as a necessity, individuals who deviate from this requirement are often deemed disabled. Such is the case for individuals diagnosed with Low-Functioning Autism (LFA), High-Functioning Autism (HFA) and Asperger Syndrome (AS). Within these Autism Spectrum Disorders (ASD), as they are commonly referred to, the focus is traditionally upon the person's deficits, those maladaptive features which interfere with his/her functioning. However, an alternate approach, involving examination of the individual's strengths, is beginning to garner research attention. For example, while it has long been acknowledged that individuals with Low-Functioning Autism typically perform within the mental retardation (MR) range (IQ range between 20 to 55 [American Psychiatric Association (APA), 2000]; in 25-75% of affected subjects; Bolte & Poustka, 2002), researchers are starting to question whether the higher-functioning forms of Autism Spectrum Disorder are best defined as disabilities or differences in cognitive style, citing behavioural and neurological factors analogous to those seen within typical development (Baron-Cohen, 2000). Furthermore, differences found between low-functioning autism, high-functioning autism, and Asperger Syndrome suggest that individuals with HFA possess stronger nonverbal than verbal skills, while the reverse is true for those with AS (Gillberg, 1998; as cited in Beebe & Risi, 2003). Despite the argument that such a finding is not truly common to either diagnosis, but is rather an oversimplification, this declaration is mostly built from studies involving self-report measures completed by the diagnosed individual, and may therefore not hold when such measures are completed by individuals who routinely observe the diagnosed person first-hand in social situations. Indeed, completion of psychometric

measures by significant others within the diagnosed person's life may reduce the bias inherent in some previous studies, and provide vital information concerning possible differences between these two conditions. In fact, significant positive correlations have been found between different family members' perception of the affected child's adaptive functioning (the ability to meet the social demands of daily living) (Glasberg & Harris, 1997).

The present study seeks to build upon such findings by administering a series of psychometric measures to primary caregivers (e.g., parents/guardians) of adolescents (e.g., ages 11-18 years) with autism spectrum disorders (LFA, HFA, and AS), and developmental disability (DD) in order to delineate differences and similarities between these diagnostic groups. Specifically, through administration of two strength-based measures (Behavioral and Emotional Rating Scale [BERS]; Epstein & Sharma, 1998; Strength Assessment Inventory [SAI]; Rawana, Cryderman, & Thompson, 2000), the present study seeks to identify strengths within LFA, HFA, AS, and DD which may be associated with adaptive functioning and behavioural problems.

The Behavioral and Emotional Rating Scale (see Appendix A) was used to assess the adolescent's strengths. This instrument is the first standardized, norm-referenced scale which examines strengths across a range of areas, with the intent of targeting strengths to be used in future treatment. The BERS contains 52 items encompassing five areas: (1) interpersonal strength (how others view the child); (2) family involvement (how the child interacts with family members); (3) intrapersonal strength (how the child views themselves); (4) school functioning (how the child functions at school); and (5) affective strength (how the child reacts to giving and receiving affection). A four-point Likert scale is used for item endorsement (0 = not at all like the child; 1 = not much like the child; 2 = like the child; 3 = very much like the child; Epstein &

Sharma, 1998).

The Strength Assessment Inventory (see Appendix B) was also used to assess the adolescent's strengths. Like the BERS, this instrument measures strengths across a variety of domains, and operates under the assumption that children possess unique strengths to be utilized within treatment planning. The SAI is based upon the following definition of strength-based assessment, which comprises measurement of specific areas: "the measurement of those cognitive, emotional and behavioural skills, competencies and characteristics that are valued both by the individual and the community, and reflect the individual's positive connection to the community's values and belief system" (Rawana, 2004a, p. 5). The SAI contains 50 items, encompassing seven areas: (1) personal and physical care; (2) family circumstances/parenting; (3) education; (4) peer relations; (5) leisure/recreation; (6) attitudes/orientation; and (7) personality/behavior characteristics. A four-point Likert scale is used for item endorsement (0 = not at all like the child; 1 = not much like the child; 2 = like the child; 3 = very much like the child; Rawana et al., 2000).

Using these measures to target strengths may allow one to develop a strength-based profile, predictive of whether an individual will behave adaptively within daily life situations. However, little research has focussed upon the relationship among strengths, adaptive functioning and behavioural problems within these diagnostic categories. Therefore, of particular interest for the present study, is the question whether strength differentially affects adaptive functioning within each of these categories. Strengths, as mentioned earlier, refer to behavioural, cognitive, and emotional characteristics, competencies, and skills, which are valued by the individual as well as society (Rawana, 2004a); while, adaptive functioning refers to the application of these strengths

to daily life. The present study seeks to investigate whether a differential relationship exists between these variables for each diagnostic group under examination, as no research currently exists which investigates these relationships.

The use of psychometrically-sound instruments (the Child Behavior Checklist [CBCL; Achenbach, 1991, 2001] and the Adaptive Behavior Assessment System-Second Edition (ABAS-II; Harrison & Oakland, 2003) will provide a comprehensive account of the individual's presenting issues, so as to provide a clear picture of strengths within adolescents with different mental health symptoms.

The Child Behavior Checklist-Parent-Report Form (see Appendix C) was used to assess current presenting issues within the adolescent. The CBCL is used to assess skills and difficulties for children ages 4 to 18 years. The 112 checklist items included in the measure reflect daily activities, relationships, and academic functioning. A three-point Likert scale is used for item endorsement (0 = not true; 1 = somewhat true; 2 = very true). The problem subscales are divided into the following eight areas: (1) withdrawn; (2) somatic complaints; (3) anxious/depressed; (4) social problems; (5) thought problems; (6) attention problems; (7) delinquent behavior; and (8) aggressive behavior. From these eight subscales, both externalizing and internalizing subscale scores are derived (Achenbach, 2001).

The Adaptive Behavior Assessment System-Second Edition (see Appendix D) is a comprehensive, norm-referenced measure of adaptive skills for individuals aged birth to 89 years, that may be used for adaptive skill assessment, identification of strengths and weaknesses, as well as for longitudinal follow-up documentation. This measure may be used for individuals with a number of disabilities, disorders, and health conditions, such as developmental

disabilities. The ABAS-II- Parent Form assesses adaptive functioning for individuals ages 5 to 21 years across multiple settings, allowing for a thorough assessment of daily functional skills. This form contains 232 items, with 21-25 items per skill area. The 10 skill areas are as follows: (1) communication; (2) community use; (3) functional academics; (4) home living; (5) health and safety; (6) leisure; (7) self-care; (8) self-direction; (9) social; and (10) work (Harrison & Oakland, 2003).

Strength-based assessment is theoretically grounded within the field of Positive Psychology. It has a fairly strong empirical base which supports its use in delineating possible differences among autism spectrum disorders and developmental disabilities. Strength and relevant variables have been assessed with different clinical populations. For example, through administration of the SAI, strengths have been found to be associated with reduced behavioural difficulties in young offenders, and children within a Day Treatment Program respectively (Gomes, 2002; Welsh, 2003).

The Importance of Strengths

Although the topic of psychological strength may be as old as humankind (Lopez, Synder, & Rasmussen, 2003), only recently has this area begun to attract significant research attention. Indeed, most practitioners have been trained to operate under the rhetoric of the diagnostic model. This "entrenched paradigm of practice for all of the helping professions" (Clark, 1998, p. 1), involves a series of procedures to assess and diagnose individuals with mental health problems. Opponents of this approach argue that a focus upon problems has redirected practitioner interest nearly entirely to the negative. Specifically, these individuals argue that attention is given to abnormal, absent, and incorrect aspects of the client's functioning,

at the expense of strengths and healthy patterns of functioning (Clark, 1998).

This has traditionally been the case for adolescents, who, after being referred for specialized services, are often labelled in terms of their presenting deficits, problems, and pathologies. Thus, deficit-oriented terms, like "autistic" and "developmentally disabled" are typically employed to describe such adolescents (Epstein, Rudolph, & Epstein, 2000). However, as argued by Epstein et al. (2000), education and social service plans based upon deficits "...direct the attention of professionals to only one view of the child: ...what a child does poorly" (p. 50). This notion is exemplified by Kral (1989): "If we ask people to look for deficits, they will usually find them, and their view of the situation will be colored by this. If we ask people to look for successes, they will usually find it, and their view of the situation will be colored by this" (p.32; as cited in Epstein et al., 2000, p. 50).

Reasons for this negative bias include viewing the client's problems in a negative light, resulting in negative inferences into cause and effect, and the tendency for those detached from the situation (e.g., psychologists) to perceive more negatives in a difficult situation than those directly affected (e.g., clients) (Lopez et al., 2003). More and more, however, practitioners are beginning to depart from the colouration of the deficit model, in favour of a strength-based view.

Positive Psychology

The strength-based view is closely related to the area of positive psychology. According to a clinical behaviour analytic perspective, "...positive psychology encompasses an individual's ability to behave effectively within multiple physical-social environments" (Follette, Linnerooth, & Ruckstuhl, 2001, p. 104). This involves maximization of positive consequences and minimization of their aversive counterparts. In this regard, a positive environment that elicits and

reinforces positive behaviour is required to maintain optimal behaviour over time. Thus, the goal for this realm of psychology "...is to understand the factors that promote human well-being and to gain control over them" (Follette et al., 2001, p. 104). To accomplish this feat, fundamental behavioural principles may be applied to research involving positive human behaviour so that control over adaptive functioning may be increased. The intent of a positive approach is therefore to create positive functioning when absent, and enhance existing positive functioning (Follette et al., 2001).

Several other definitions of positive psychology exist. For example, Sheldon and King (2001) define this term as:

> ...nothing more than the scientific study of ordinary human strengths and virtues...it revisits 'the average person' with an interest in finding out what works, what is right, and what is improving. It asks, 'what is the nature of the effectively functioning human being, who successfully applies evolved adaptations and learned skills? And how can psychologists explain the fact that, despite all the difficulties, the majority of people manage to live lives of dignity and purpose?' Positive psychology is thus an attempt to urge psychologists to adopt a more open and appreciative perspective regarding human potentials, motives, and capacities (p. 216).

Lopez et al. (2003) identify four critical issues to be addressed in the "...scholarly pursuit of optimal human functioning" (p.7):

1. Contextualize the examination of human strengths, healthy processes, and fulfillments.
2. Balance the examination of hypotheses about strengths with testing hypotheses about weaknesses.
3. Use/develop measurement procedures that account for the dynamics of healthy processes.
4. Consider the universality of human fulfillments (Lopez et al., 2003, p. 7).

However, as reported by Sheldon and King (2001), psychologists possess little knowledge about human thriving and the manner through which it may be fostered due to the allotment of inadequate resources and an inability to recognize the value of such inquiries. The authors state

that this "...negative bias, once identified, can be found lurking almost everywhere in theoretical psychology" (Sheldon & King, 2001, p. 216). Nonetheless, as stated by Lopez et al. (2003), "...human strengths are 'real' and detecting these strengths is an important part of good science and practice"(p. 4). The assessment of strengths therefore represents an important line of inquiry.

Strength-Based Assessment

According to Epstein and Sharma (1998), "strength-based assessment is defined as the measurement of those emotional and behavioral skills, competencies, and characteristics that create a sense of personal accomplishment; contribute to satisfying relationships with family members, peers, and adults; enhance one's ability to deal with adversity and stress; and promote one's personal, social, and academic development" (p. 3; as cited in Epstein, 1999, pp. 258-259).

This approach stresses an ecological orientation and assesses the individual's functioning across a broad spectrum (e.g., educational, family, health, legal, psychological, safety and social areas). Within this spectrum, even the most challenged individual is viewed as having "...unique talents, skills, and life events as well as specific unmet needs" (Epstein, 1999, p. 258) that can form the foundation for subsequent treatment.

Strength-based assessment is predicated upon several basic assumptions, according to Epstein and Sharma (1998) including:

1. Every child has strengths that are unique to the individual.
2. A child is influenced and motivated by the way significant individuals in his or her lives respond to them. Moreover, a child's motivation is enhanced when adults and peers point out his or her strengths.
3. Failure of a child to demonstrate an emotional or behavioral strength does not mean a deficit. Rather, it means that the child has not received the necessary experiences to master the skill.

The testing of these three assumptions to the four diagnostic groups essentially forms the core

of possible implications of the present study. From the first assumption, one wonders whether unique strengths may also be observed within different diagnostic categories. In essence, will an adolescent with LFA have different strengths than one with AS? The present study hypothesizes that a different and unique strength profile will exist for each of the diagnostic groups investigated.

In regards to the second assumption, the present study seeks to confirm whether primary caregiver awareness of their adolescent's strengths is associated with better adaptive functioning (e.g., within the school environment), and fewer behavioural difficulties. Indeed, primary caregiver awareness of such strengths may encourage the adolescent to apply these strengths to daily living, thereby functioning in an adaptive manner. Administration of the BERS, SAI, CBCL, and ABAS-II to primary caregivers of adolescents with ASDs and DD will allow for such a confirmation to be made. For instance, high scores upon the SAI subscale of leisure/recreation (indicating engagement in positive leisure activities by the adolescent) may be related to better adaptive functioning within the adolescent.

The third assumption will be addressed through examining primary caregiver ratings (e.g., on the SAI), upon their adolescent regarding activities in which they engage. It is hypothesized that a high correlation will be found between primary caregiver ratings of engagement in positive activities by their adolescent, and the adolescent's strengths.

From these assumptions, strength-based assessment offers many advantages to administrators, children and families, as well as direct service providers: (1) it identifies positive factors and expectations for the child; (2) it provides empowerment for both child and family to assume responsibility for life events and decisions; (3) it lists the child's competencies and skills

acquired in the service process; and (4) it results in a positive and collaborative parent-professional relationship (Epstein, Dakan, Oswald, & Yoe, 2001).

In order to attain these advantages, the practitioner must be sensitive to contextual or environmental factors that may determine the manner in which strength is nurtured and demonstrated. Thus, as stated by Lopez et al. (2003), "researchers should attempt to capture the essence of the interplay between the person and the environment" (p. 8). A crucial environmental consideration for adolescents is the familial system. The strengths perspective attempts to establish a positive familial relationship built upon trust through recognition of inherent family strengths and consideration of the family's expert knowledge about the affected individual (Prelock et al., 2003). The present study seeks to evaluate caregiver ratings of their adolescent's strengths, with regards to the four different clinical groups. It is important to note that strength-based assessment is not restricted to the discipline of psychology. It is also discussed in the social work discipline. There, it is referred to as the "strengths perspective". The central tenet of the strengths perspective is exemplified in the following challenge:

> At the very least, the strengths perspective obligates workers to understand that, however downtrodden or sick, individuals have survived (and in some cases even thrived). They have taken steps, summoned up resources, and coped. We need to know what they have done, how they have done it, what they have learned from doing it, what resources (inner and outer) were available in their struggle to surmount their troubles. People are always working on their situations, even if just deciding to be resigned to them; as helpers we must tap into that work, elucidate it, find and build on its possibilities (Saleebey, 1992; as cited in De Jong & Miller, 1995, p. 735).

Although the literature on strengths regarding ASD and DD groups is almost nonexistent, research upon other clinical populations has been conducted. For example, recent investigations have discovered that promoting strengths accomplishes an outcome synonymous with that

achieved by the deficit approach, although the former approach is associated with further benefits, such as initiative, building resources, and leadership (Larson, 2000). Areas of recent exploration include, the application of strength-based assessment to infant mental health (Perez, Peifer, & Newman, 2002), previously imprisoned youth (Cillo, 2002), special needs children (DuBose, 2002), offender populations (Ward, 2002), and to intellectually gifted/learning disabled children (Weinfeld, Barnes-Robinson, Jeweler, & Shevitz, 2002).

In regards to special needs children, a family-centred strength-based assessment and care plan was effectively applied to an eleven-year-old Latina female with cerebral palsy to remedy her explosive episodes at school. Using the Comprehensive Evaluation Diagnosis Referral and Re-evaluation Process (CEDARR), the child's family was able to utilize compensatory methods to effectively benefit her needs (DuBose, 2002).

According to the strengths perspective, in dealing with an adolescent, the initial step involves believing in his/her strengths and past successes to eliminate maladaptive behaviour, while, the next step is to develop methods to apply these strengths to required behavioural change (Clark, 1998). Using these guidelines, strength-based assessment has been applied effectively to both adolescents and their families (e.g., Cade & O'Hanlon, 1993; O'Hanlon & Weiner-Davis, 1989; Rawana, 2004).

Indeed, the use of empowerment training (e.g., the use of positive self-talk) was found to aid custodial grandparents in building existing strengths to deal with their own difficulties, as well as become advocates for other custodial grandparents (Cox, 2002).

Strength-based assessment has also been applied to the evaluation of children's mental health programs. In this context, one widely used measure of strength is the aforementioned Behavioral

and Emotional Rating Scale (BERS; Epstein & Sharma, 1998). The BERS has been found to possess acceptable concurrent criterion related validity with the CBCL (Harniss, Epstein, Ryser, & Pearson, 1999). Specifically, a study using 95 students (aged 10-19 years) with emotional and behavioural disorders, found moderate to high correlations between the BERS and the five competence scales, the Externalizing scales, and the Total Problem score of the CBCL-Teacher Report Form (Harniss et al., 1999). Furthermore, the BERS was found to adequately differentiate between nondisabled, learning disabled, and emotional and behavioural disordered students (Reid, Epstein, Pastor, & Ryser, 2000). Due to its strong psychometric properties, the BERS can be employed in the identification, planning, and evaluation of strength-based findings (Welsh, 2003).

For example, the Central Nebraska Initiative for Families and Youth gathered a variety of information on 80 children and families with strengths and serious emotional challenges, using such measures as the BERS and CBCL. Information was gathered at intake and at six month intervals. Results indicated that the overall strength quotient, as measured on the BERS improved, on average, from 99.4 to 111.5, while functional impairments decreased over these six months (Epstein et al., 2001). Similarly, Gomes (2002) applied strength-based assessment (BERS; Strength Assessment Inventory [SAI]; Strengths and Difficulties Questionnaire [SDQ]; Goodman, 1999) to a young offender sample, and found higher levels of strength to be associated with lower levels of difficulty overall, although youth did not change significantly in strength or difficulty levels over a two-month period. Furthermore, a decrease in difficulty level occurred only for open custody youth, who reported "...fewer feelings of alienation from their significant worker, had lower self-efficacy for aggression, and higher self-efficacy for the inhibition of

aggression" (Gomes, 2002, p. iii).

A lesser known strength assessment tool is the Strength Assessment Inventory (SAI; Rawana et al., 2000). This instrument was derived from the Ministry of Community and Social Services Risk/Need Assessment Form used with all young offenders within Ontario, Canada. Although only recently psychometrically evaluated, the SAI demonstrated adequate construct validity with the BERS (Welsh, 2003).

Similarly, the Family and Parenting Strength Checklist (see Appendix E) which applies to primary caregivers' evaluation of their own strengths, is based on a style of parenting which "...capitalizes on the strengths that exist both within each parent, between parents, and between each parent and the child" (Rawana, 2004b, p. 1). This Strength Checklist integrates the means through which primary caregivers influence their child (observational learning; modelling; consequences [e.g., positive reinforcement]) so that the adolescent may internalize the family culture and use it adaptively to meet the challenges of daily living. These challenges of daily living are divided into the following nine areas: (1) personal and physical care; (2) family functioning; (3) parenting practices; (4) school functioning; (5) leisure/recreation; (6) peer relations; (7) personality functioning; (8) evolving sense of identity; and (9) attitudes/orientation (Rawana, 2004b). However, the present investigation will not utilize this measure, as it examines potential clinical issues within the adolescent's family which do not represent the focus of this study.

As mentioned earlier, using these measures, research has indicated that within a young offender population, self-reported strengths by these individuals were associated with fewer reported problems (Gomes, 2002). Furthermore, children in a Day Treatment Program were

found to have fewer behavioural problems if strengths were high (Welsh, 2003). However, one wonders whether similar results will be obtained for children and adolescents with autism spectrum disorders and developmental disabilities. Furthermore, one wonders whether a relationship exists between strengths and adaptive behaviour. Therefore, the present study will be exploratory in nature in looking at specific clinical populations of adolescents.

Adaptive Functioning

Adaptive functioning, "...refers to the individual's ability for meeting the demands of everyday life, one might call this 'street smarts' " (Volkmar, 2003, p. 109). Furthermore, adaptive behaviour is defined as "the effectiveness or degree with which individuals meet the standards of personal independence and social responsibility expected for age and cultural group" (Grossman, 1983; as cited in Perry & Factor, 1989, p. 41). Thus, in contrast to strengths, which measure behavioural, cognitive, and emotional characteristics, competencies, and skills, which are valued by the individual as well as society (Rawana, 2004a), adaptive functioning refers to the application of these strengths to daily life. Adaptive functioning is an important representation of the manner by which individuals with ASD and DD cope with daily societal demands. Due to their disabilities, these groups possess some difficulties in adaptive functioning. Indeed, difficulties in adaptive functioning are reflected in DSM-IV-TR criteria of autism, Asperger Syndrome, and developmental disability (APA, 2000).

To date, very few studies have examined the relationship between strength and adaptive functioning, particularly with regard to ASD and DD populations. However, a recent study simultaneously investigated the effects of child, family, and intervention characteristics on stress associated with parenting a child with ASD. Specifically, the effects of the child's adaptive

functioning, family functioning strengths, and centeredness of the child's educational program upon parenting stress were examined. Results indicated that both the child's degree of adaptive functioning, and the family's strength level were predictive of parental stress, such that child and family strengths buffered the effects of child adaptive functioning on stress related to parenting (Everett, 2001). The present study anticipates a similar positive relationship among strengths and adaptive functioning, such that more strengths will be associated with greater adaptive functioning within the four diagnostic categories under investigation.

The Measurement of Adaptive Functioning in Children with Autism Spectrum Disorders

Several psychometrically sound instruments have been developed to measure adaptive functioning. One such measure is the Vineland Adaptive Behavior Scales (VABS; Sparrow, Balla, & Cicchetti, 1984), which assesses adaptive behaviour within the following four domains: (1) communication; (2) daily living; (3) socialization; and (4) motor skills. The motor skills domain is used for children under six years of age, and a two-part maladaptive behavior domain is optional for children five years of age and over (Perry & Factor, 1989).

Much research with individuals with autism spectrum disorders has suggested that level of adaptive functioning may act as a critical determinant as to whether the diagnosed individual will be capable of functioning on an independent level in the future. Several studies have investigated both the nature and pattern of adaptive behaviour within lower-functioning individuals with autism, relative to their nonautistic counterparts (Kopp, 2003). For example, in 27 individuals with autism, Freeman et al. (1999) found an relationship between IQ and adaptive functioning, based upon a correlation ($r = .72$) between WISC-R full-scale IQ scores and the composite score of the VABS. Schatz and Hamdan-Allen (1995; as cited in Bolte & Poustka, 2002), on the other

hand, found a rise in IQ to be associated with a minor rise in adaptive skills within autism, compared to those with developmental disability without autism. The researchers also found a stability of differences in adaptive behaviour from childhood to adolescence among groups, thus supporting the use of an adolescent sample within the present investigation (Hamdan-Allen, 1995; as cited in Bolte & Poustka, 2002).

Another study with 497 autistic children, found higher correlations between IQ and adaptive functioning for lower-functioning children than their higher-functioning counterparts (Vig & Jedrysek, 1995; as cited in Liss et al., 2001). Thus, it appears that adaptive skill level in autism is related to symptomatology (e.g., IQ level). However, it has been found that certain adaptive skills, like peer conversation initiation ability, are connected to cognitive skills, but not to autistic symptom severity. Therefore, certain cognitive abilities, like receptive and expressive language development, may play a more powerful role than symptom severity in adaptive behaviour development (Liss et al., 2001).

In perhaps the first study to examine the manner in which certain autistic behaviours are related to adaptive skill development, Liss et al. (2001) found that autistic children were more impaired in socialization and daily living domains of adaptive functioning than IQ-matched children without autism. Furthermore, high-functioning autistic children were more impaired in these areas than those that were lower-functioning. Thus, the researchers speculated that as autistic children achieve higher cognitive skills, their adaptive skills do not rise accordingly. The relationship among adaptive behaviour and IQ was also found to be strongest in those with LFA, while a correlation between adaptive functioning and autistic symptomatology was found for those with HFA. Therefore, it was concluded that at lower levels of functioning, adaptive

functioning is more related to cognitive factors, which interfere with basic skill development. At higher levels of functioning, however, negative behaviours related to autism may impede adaptive skill development (Liss et al., 2001).

A more recent study examined the relation among adaptive behaviour and general cognitive level in persons with autism or Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) with and without comorbid developmental disability. Using the screening version of the VABS and the WISC-R, results indicated that within higher-functioning individuals, IQ and adaptive behaviour level differed significantly, while lower-functioning subjects had fairly comparable IQ and adaptive functioning. Furthermore, a higher correlation was found between IQ and single adaptive behaviour areas within non-developmentally disabled individuals, with the communication domain displaying the greatest predictive power. Therefore, the researchers concluded that the presence of a qualitative reduction in intelligence mediates the relationship between adaptive and cognitive function within autistic disorders (Bolte & Poustka, 2002).

In sum, research has shown that autistic individuals possess deficits in adaptive functioning of greater severity than their deficits in general intelligence. Furthermore, this discrepancy is most evident in the socialization domain, and intelligence appears to have the greatest relation to adaptive functioning at lower levels of skill development (Liss et al., 2001).

Adaptive Functioning Specifically in Children with High-Functioning Autism and Asperger Syndrome

In regards to HFA, use of the Vineland Scales indicated that the adaptive functioning of children with this condition appears to be more in tune with their verbal, as opposed to nonverbal skills (Hanzel, 2003). Using the revised Leiter International Performance Scale (Leiter-R), the

patterns of strengths and weaknesses of cognitive functioning, based upon the nonverbal ability factors of fluid reasoning and broad visualization from Horn-Cattell's intelligence theory, were explored with autistic children. Twenty children with HFA matched on age and gender were compared to 20 normal children. The Wechsler Intelligence Scale for Children-Third Edition (WISC-III), the Nonverbal Reasoning factor of the Differential Abilities Scale (DAS), and the Visual Processing factor of the Woodcock-Johnson-Revised Cognitive Battery (WJ-R) were administered to assess IQ. The Scale of Independent Behavior-Revised (SIB-R) and the VABS were administered to provide a supplemental analysis of the relationship between adaptive functioning and IQ. Results indicated that children with HFA had strong fluid reasoning and visualization skills (Hanzel, 2003).

With regards to AS individuals, administration of another adaptive measure found that children and adolescents (ages 6 to 20 years) differed on parental reports of adaptive behaviour dimensions, such as imagination and creative abilities, with AS individuals scoring higher on these dimensions (Ozonoff et al., 2000). For example, AS individuals scored higher upon the Vocabulary and Comprehension subscales of the WISC-III (Ozonoff et al., 2000).

A further strength of children with AS involves the tendency for above average reading levels within entry to elementary school (Blacher et al., 2003). However, Myles et al. (2002) found that children with this condition displayed independent and silent reading levels below grade level, and had difficulties answering inferential reading comprehension questions.

The VABS has also provided significant evidence attesting to the dynamic nature of the adaptive functioning profile for disorders diagnosed early in life. For example, a recent study, using a large sample of 210 subjects with autism, examined how VABS and intelligence test

scores in this autistic sample changed with age using human growth modelling statistics. Although limited by a reliance upon changing diagnostic criteria, the researchers found that "...the natural course of autism is one of improvement in adaptive skills" (Freeman et al., 1999, p. 383). Specifically, while individual growth curves for communication and daily living skills were related to initial IQ (as measured by the Wechsler Preschool and Primary Scales [WPPSI-R; Wechsler, 1989]; the Wechsler Intelligence Scales for Children-Revised [WISC-R; Wechsler, 1991] or Third Edition [WISC-III; Wechsler, 1974]; and the Wechsler Adult Intelligence Scales-Revised [WAIS-R; Wechsler, 1981], improvement in socialization was not so related. Furthermore, initial Nonverbal IQ, as measured by the Wechsler scales, was found to be the best predictor of growth in communication skills. The researchers therefore concluded that improvement occurs within all areas of adaptive functioning, with social skill improvement being independent of cognitive abilities (Freeman et al., 1999). This finding attests to the notion that biological disorders may have an adaptive functioning profile which alters with development. Indeed, the symptomatic profile of autism spectrum disorders may alter with the individual's development, such that a diagnosis of low-functioning autism may change to a higher-functioning variety of autism (high-functioning autism or Asperger Syndrome) as the individual ages. This change in symptomatology may therefore also be accompanied by a change in adaptive behaviour.

A recent meta-analysis suggests that children and adolescents with AS outperform their HFA counterparts on measures of cognition and adaptive behaviour. According to these findings, a report of lower scores upon adaptive measures was associated with better overall performance of adaptive behaviour abilities (e.g., communication, self-care skills, social appropriateness, and

emotional self-regulation), in children and adolescents with AS. In contrast, a report of high scores upon adaptive measures was associated with greater impairment in adaptive behaviour functioning within those with HFA (McLaughlin-Cheng, 1998). Although tainted by an unrepresentative and small sample, this study adds fuel to the growing notion that HFA and AS may not include the same types of cognitive and behavioural impairments. Further differences between these two conditions centre around imagination, with AS individuals exhibiting better creative abilities than those with HFA (Ozonoff, South, & Miller, 2000). Individuals with AS have also been found to display better outcome. In a two-year longitudinal study, AS children were found to have better communication and social skills, language abilities, and less autistic symptoms than those with HFA. These results were speculated to derive from the earlier development of language within AS (Szatmari et al., 1997; as cited in Kim et al., 2000).

Adaptive Functioning in Children with Developmental Disabilities

Further research on adaptive functioning has focussed more closely upon individuals with developmental disabilities. One such study found low correlations among intelligence and adaptive behaviour in 99 children with mental retardation, suggesting that these constructs are distinct psychological entities (Platt et al., 1991; as cited in Bolte & Poustka, 2002).

Another study found level of responsiveness to social stimuli was related to cognitive level only for developmentally disabled and low-functioning autistic children, but not for language-impaired or high-functioning autistic children (Bacon et al., 1998; as cited in Liss et al., 2001). With findings such as this, many researchers have concluded that "...at lower levels of functioning, IQ is the rate-limiting factor for the development of adaptive skills. At this level, both IQ and adaptive behavior may measure similar skills, perhaps the ability to understand and

master simple tasks" (Liss et al., 2001, p. 220).

Adaptive Behaviours in Children with Autism Spectrum Disorders versus Developmental Disabilities

Thus, adaptive behaviour should be considered within a developmental context, as the skills and abilities assessed vary according to age and intellectual level. In an effort to differentiate between autistic children and nonautistic developmentally disabled children, the VABS and the Stanford-Binet Intelligence Scale (4th ed.) (SB-IV; Thorndike, Hagan, & Sattler, 1986) were administered to these children, who were of comparable age and IQ. Results confirmed the hypothesis that autistic children would exhibit significantly more impairment in adaptive behaviour than nonautistic developmentally disabled children of the same intellectual level. Furthermore, autistic individuals were significantly more impaired in verbal reasoning as well as socialization and communication skills. Although differences between these two groups were also found upon the SB-IV (e.g., verbal reasoning), none were as striking as those found on the VABS, indicating that differences in adaptive behaviour are more salient than those within intellectual functioning. These findings support the use of the VABS within the differential diagnosis of autism and developmental disabilities (Carpentieri & Morgan, 1996). However, it remains to be seen whether similar findings will be obtained for other measures of adaptive behaviour, such as the ABAS-II.

Similarly, Gillham et al. (2000) administered the VABS to children (ages 4 to 13 years) with autism, PDDNOS, and other Developmental Disorders (DD). Results indicated that deficits within adaptive behaviour in socialization and daily living skills could serve as a differentiating factor between children with autism and those with other developmental disorders. Based upon

this finding, the researchers concluded that, "...an impairment in socialization is more central to autism than the presence of unusual or deviant behaviors" (Gillham et al., 2000, p. 276).

In another comparison of autism and developmental disabilities, the VABS was used to assess adaptive behaviour in adolescents and young adults with Down syndrome (n = 16) and autism (n = 16). Results showed that, when matched for verbal mental age, the groups did not differ in adaptive behaviour. However, older individuals with Down syndrome displayed more skills in all measured domains. Such was not the case for autistic individuals, suggesting greater variability in achievement within this group. Pearson correlations also revealed that higher verbal and nonverbal intelligence were related to more adaptive skills. Furthermore, both developmentally disabled and autistic groups displayed a pattern of adaptive behaviour at or above verbal mental age level, with the exception of communication and socialization for the autistic group, when compared to nonverbal mental age. Thus, "...individuals with Down syndrome were as advanced as the average individual of similar mental age who had no disabilities" (Loveland & Kelley, 1988, p. 90). However, those with autism, although comparable to those of similar verbal mental age, were less advanced in communication and socialization than those of similar nonverbal mental age, indicating that verbal mental age is a better predictor of adaptive skills within autistic individuals (Loveland & Kelley, 1988).

In sum, while adaptive scales, such as the Vineland have proven useful in delineating possible differences between autism spectrum disorders and developmental disabilities, further study is needed using other measures that would contribute to the differences and similarities among these groups (Gillham et al., 2000). Furthermore, additional research is needed to determine the relationship between strengths, adaptive functioning and behavioural problems. It is hypothesized

that strength will differentially affect adaptive functioning and behavioural problems within each of the diagnostic categories under investigation.

Adolescence

As indicated by the aforementioned studies, the importance of examining an adolescent population is supported by the notion that the individual's strengths, behavioural difficulties, and adaptive functioning may be relatively stable during this developmental period, as opposed to the pre-adolescent stage. Furthermore, the diagnosis of ASD and DD may be firmly entrenched by this time, as several diagnoses are not completed until late childhood (e.g., age 9 or 10 years). Therefore, examination of this developmental stage will hopefully provide a measure of stability in the reported findings. Furthermore, examination of an adolescent sample may prove particularly useful for outcome within HFA individuals, as this diagnostic group may be especially vulnerable to adjustment difficulties because their intellectual attainment typically encourages greater expectations within communicative and social competence. The present study therefore seeks to better understand the unique strengths of this population, so that unrealistic expectations are not applied to these individuals.

Behavioural Difficulties

Any consideration of strengths and adaptive measures should also consider behavioural difficulties, thus, it is toward this consideration which we now turn. Very few studies have established a relationship between strengths and behavioural difficulties. However, a recent study examined the relationship among child strengths and functional impairment (similar to behavioural problems, refers to difficulty in important areas of activity, such as family, school, work, recreational; APA, 2000), specifically whether youth with high degrees of functional

impairment also display strengths. A large sample of children of different ages, ethnicities, genders, and races (N = 1, 838) was examined using the BERS (Epstein & Sharma, 1998). Results indicated a moderate association between child strengths and functional impairment, such that "...children with even the most severe functional impairment were rated as having average or near average strengths" (Walrath, Mandell, Holden, & Santiago, 2004, p. 1). With the exception of gender, this relationship did not differ according to any demographic variables (Walrath et al., 2004).

However, very little research has been conducted on the relationship between strengths and functional impairment on ASD and DD. In reviewing the following research, it is important to note that due to the similarity between LFA and HFA, the findings related to HFA, with the exception of cognitive factors, should also be applicable to LFA. For the autism spectrum disorders, behavioural difficulties will be subdivided into four areas, based upon diagnostic criteria: (1) social deficits; (2) communication impairments; (3) restricted repetitive and stereotypied behaviour, interests, and activities; and (4) cognitive and developmental factors.

Assessment of Behavioural Difficulties

The CBCL is a widely used measure in the assessment of child and adolescent mental health. However, few studies have applied the CBCL in the assessment of autism spectrum disorders. Nevertheless, there are some studies which did use it in the assessment of ASD. These studies indicate that a general behavioural pattern may be identified (Duarte, Bordin, de Oliveira, & Bird, 2003). For example, using a sample of 204 preschool males, presenting with a range of developmental and psychiatric disturbances, including autism (n = 79), an item factor analysis on the CBCL was conducted. From this analysis, eight factors emerged, one of which was

Autistic/Bizarre. A cluster analysis of these factors resulted in the early separation of autistic boys from other disturbed preschoolers (Rescorla, 1988; as cited in Duarte et al., 2003). Another study found that German autistic children displayed high CBCL scores on the narrow-band scales of Attention, Social, and Thought Problems (Bolte, Dickhut, & Poustka, 1999; as cited in Duarte et al., 2003).

A more recent study on the CBCL's applicability to autism assessment used the Brazilian version of the CBCL, as well as a diverse sample, composed of 36 children with autism and related conditions, 31 children with other psychiatric disorders (OPD; including Attention Deficit Hyperactivity Disorder [n = 14], Depressive Disorder [n = 19], Conduct/Oppositional Defiant Disorder [n = 4], Separation Anxiety/Obsessive Compulsive Disorder [n = 3]), one unknown diagnosis, and 34 school children. All children ranged in age from 4 to 11 years. Results indicated that neither the CBCL's global measure (Total Problems), nor the Internalizing scores differentiated autistic from OPD children. Similarly, Externalizing scores did not differentiate autistic from school children. However, both the Thought Problems and Autistic/Bizarre scales did differentiate autistic and school children, with the Thought Problems scale having perfect specificity. Furthermore, the Thought Problems, Autistic/Bizarre, and Aggressive Behavior scales distinguished autistic from OPD children, with the Autistic/Bizarre and Aggressive Behavior scales being the best discriminators (Duarte et al., 2003). With findings such as these, a DSM Pervasive Developmental Disorders (PDD) scale for the CBCL preschool version has recently been proposed (Achenbach & Rescorla, 2001; as cited in Duarte et al., 2003).

Low-Functioning Autism, High-Functioning Autism, and Asperger Syndrome

Social Deficits. Challenging behaviours have been reported to occur frequently with autistic children. For example, Dunlap, Robbins, and Darrow (1994) asked parents of autistic children to provide information about the frequency and topography of their child's challenging behaviours. Although restricted by a small sample, results indicated that nearly 40% of parents reported their child often engaged (at least once a day) in some type of destructive behaviour, with self-stimulation being the most frequently reported challenging behaviour (61%), and tantrums and withdrawing being reported at 23% and 38%, respectively. Furthermore, destructive behaviours were reported most often in adolescents (over 60%), and least often in elementary-aged children. Withdrawing was the most frequently reported behavioural difficulty in adolescents, and tantrums were most often reported within preschool children (Dunlap et al., 1994).

Similarly, adolescents with HFA and AS show severe impairment within social interaction, as evidenced in "...poor use of nonverbal communication, lack of social or emotional reciprocity, poor use of time and space in social interactions, limited social play and recreational skills, and generally poorly developed social relationships" (Beebe & Risi, 2003, p. 371). Numerous explanations have been proposed to account for these social ineptitudes. These include an "underdeveloped 'theory of mind' or 'mindblindedness' " (an impaired ability to infer others' mental states and use this information in interpretation and prediction of behaviour) (e.g., Howlin, Baron-Cohen, & Hadwin, 1999; as cited in Beebe & Risi, 2003), difficulties with "executive functioning" (e.g., Ozonoff, 1998; as cited in Beebe & Risi, 2003), and a "lack of 'central coherence' " (selective attendance to specific details at the expense of underlying connected meaning) (e.g., Frith, 1989; as cited in Beebe & Risi, 2003).

Many individuals with HFA and AS are often aware of their social difficulties by adolescence (Stoddart, 1998; as cited in Beebe & Risi, 2003), and have a desire for interpersonal contact and acceptance (Eliasoph & Donnellan, 1995; as cited in Beebe & Risi, 2003). However, these individuals do not possess the necessary skills to accomplish such feats, but are subject to rejection and exploitation (Howlin, 1999; as cited in Beebe & Risi, 2003). Furthermore, many adolescents with these conditions are fraught with frustration that derives from an inability to secure or maintain a job suited to their academic or intellectual skills. As a result of their social difficulties, individuals with HFA and AS may experience depression and anxiety, particularly within unstructured, rapidly shifting, highly emotional, or socially taxing situations (e.g., lunch periods), potentially leading to maladaptive actions (e.g., abrupt withdrawal, increased stereotyped, verbal or physical aggression) (Beebe & Risi, 2003).

Communication Impairments. Although individuals with HFA exhibit early language deficits not found in AS, both groups have been found to perform within the normal range on psychometric measures of language. Within such cases, communication may be best envisioned as deviant, as opposed to delayed (though both forms may reside within the same individual) (Beebe & Risi, 2003). The deviant communication patterns typically observed in HFA and AS are as follows: "...paralinguistic aspects of speech (e.g., prosody, rhythm, timing), nonverbal paralinguistic communication features (e.g., gestures, facial expression, eye gaze) and communication pragmatics (e.g., dealing with nonliteral communication such as analogies or figures of speech, and understanding the needed communication quantity, quality, relevance, and level of clarity/detail for a given situation)" (Twachtman-Cullen, 1998; as cited in Beebe & Risi, 2003, p. 372). Echolalic speech may also be present, although to a lesser degree than that seen in

lower-functioning autism (Howlin, 1999; as cited in Beebe & Risi, 2003). The theories of mindblindness, executive functioning, and central coherence are also relevant to explaining language impairments (Beebe & Risi, 2003).

Restricted Repetitive and Stereotypied Behaviour, Interests, and Activities. Cognitive and behavioural rigidity is a common characteristic of adolescents with HFA and AS. Strict adherence to routine and great difficulty with unexpected change can make transitions between activities very stressful. Stereotypies experienced by adolescents with HFA and AS tend to be more complex and cognitively sophisticated than those displayed in their lower-functioning autistic counterparts (Howlin, 1999; as cited in Beebe & Risi, 2003). However, without clearly defined training and a supportive environment, such sophistication is seldom adaptive in daily life.

Furthermore, adolescents with HFA and AS may acquire extensive factual knowledge concerning a circumscribed area of interest, while neglecting other possible interests, and in the absence as to the manner in which facts interrelate upon a higher level. Although some of these excessive interests may harbour superficially age-appropriate content, they remain maladaptive in quality and intensity. Verbally, routines may be present (e.g., incessant repetitive questions) which may transfer to large systems (e.g., family) (Howlin, 1999; as cited in Beebe & Risi, 2003). Executive dysfunction has been cited as a possible explanation for these rigid and stereotyped behaviours and interests (Ozonoff, 1998; as cited in Beebe & Risi, 2003).

Cognitive and Developmental Factors. Adolescents with HFA and AS display IQs ranging from normal to superior, while those with LFA typically have an IQ between 35 and 50 (McLaughlin-Cheng, 1998). Furthermore, both conditions display similar cognitive features in

childhood, so that a diagnosis of autism in earlier years may change to AS as the child grows older (Wing, 1988; as cited in Gillberg, 1989).

Developmental Disability

Within the approximately one percent of the population that are developmentally disabled, it has been stated that several of these individuals may possess the same conditions which affect the general population (e.g., adjustment reactions, behavioural disorders, neuroses, personality disorders, psychoses; Grizenko, Cvehc, Vida, & Sayegh, 1991). Although it is generally accepted that emotional disorders occur more frequently in the developmentally disabled population, opinion differs as to whether the disorders observed within this population are similar (e.g., Philips, 1975) or different (e.g., Gualtieri, Matson, & Keppel, 1989) from those observed within non-developmentally disabled individuals. For example, some consider emotional detachment to represent the most common behaviour observed within institutionalized developmentally disabled individuals (Donaldson & Menolascino, 1977; as cited in Grizenko et al., 1991).

The prevalence of behavioural difficulties within the developmentally disabled ranges from 11-25% (Corbett, 1979; Lund, 1985; as cited in Grizenko et al., 1991), with the amount of psychiatric illnesses ranging from 14% in community samples to between 35-59% in hospitals (Donoghue & Abbas, 1971; Gostason, 1985; Leck, Gordan, & McKeown, 1967; Primrose, 1971; Williams, 1971; as cited in Grizenko et al., 1991). Gualtieri et al. (1989; as cited in Grizenko et al., 1991) outlined three reasons to account for the high prevalence rate and severity of psychiatric disorders among developmentally disabled individuals: "(1) the neurological damage causing the mental retardation may also affect behavioural and emotional responses; (2) the

environment these patients live in poses challenges and threats that may exceed the patient's comprehension or ability to adapt; and (3) psychiatric care is often inadequate, and few psychiatrists are trained to deal with the specific needs of the mentally retarded, and still fewer have chosen to specialize in the field" (p. 712).

In the first study to use standardized behavioural measures for comparing the frequency and severity of behavioural difficulties of developmentally disabled individuals with clinical non-developmentally disabled subjects and different diagnostic subgroups of developmentally disabled individuals, the behavioural profiles of 176 (107 males and 69 females) developmentally disabled individuals from two reception centres and nine group homes were assessed using the Revised Child Behavior Profile (RCBP; Achenbach & Edelbrock, 1983; as cited in Grizenko et al., 1991). Results indicated that males with moderate developmental disability displayed significantly higher scores on the aggressive subscale than those with severe developmental disability. Similarly, although not statistically significant, females with moderate developmental disability had higher scores on the anxious obsessive subscale than their severe developmentally disabled counterparts. Furthermore, males with Down syndrome had markedly lower raw scores upon the immature, aggressive, and hyperactive subscales, and lower internalization, externalization, and total T scores, while autistic and PDD males displayed higher raw scores upon the uncommunicative, obsessive-compulsive, hostile withdrawal, and hyperactive subscales, as well as on internalization and total T scores. Females with Down syndrome had lower schizoid and immature hyperactive raw subscale scores, while those with autism and PDD had higher schizoid and internalization T scores (Grizenko et al., 1991).

The researchers also found that adolescents with developmental disability did not show more

behavioural difficulties than developmentally disabled children or adults. However, the finding that moderately developmentally disabled individuals have more behavioural problems must be interpreted with caution, as the sample solely consisted of individuals from residential settings, where behavioural problems are common. Indeed, other studies have shown that the most severely developmentally disabled and the least severely developmentally disabled exhibit fewer behavioural problems than those with moderate developmental disability (Hill & Bruininks, 1984; as cited in Grizenko et al., 1991). Other researchers report, however, that level of maladaptive behaviour is inversely proportional to intelligence level (e.g., Gostason, 1985; as cited in Grizenko et al., 1991). Lastly, Grizenko et al. (1991) found that 10.2% of their sample had a DSM-III-R Axis I disorder (e.g., anxiety disorders, depression, schizophrenia). The researchers therefore concluded that etiology is the most predictive variable of developmental disability, and overall, developmentally disabled patients in residential centres show behavioural difficulties similar in degree to those of a clinical population composed of non-developmentally disabled children (Grizenko et al., 1991).

Overall Diagnostic Issues that may be clarified by Strengths, Adaptive Measures and Behavioural Profiles

As previously alluded to, considerable controversy exists concerning the diagnostic features of autism spectrum disorders. Debate surrounding the identification of these conditions has persisted since Hans Asperger coined the term "Asperger Syndrome" in 1944 (Asperger, 1944; as cited in Gillberg & Coleman, 1992), and with the publication of the DSM-IV-TR (APA, 2000), such disagreement is unlikely to disappear any time soon. Thus, it is important to examine definitional and boundary issues regarding the conditions collectively falling under this label, so

as to understand and appreciate the extreme care which must be exercised in their diagnosis.

Whether carried out via mechanical means or through physician-conducted physical examination, the classification of physiological illnesses can often be accurately and definitively accomplished. Such is not the case, however, for the majority of behavioural conditions, whose psychological diagnosis is necessarily more tenuous and tentative (Filbert, 2003). Accordingly, behavioural signs are identified and placed in categories composed of symptom clusters which best define their expression. The psychological label for these symptom clusters is then applied to the individual, so that if he/she exhibits a certain constellation of abnormal symptoms to a sufficient extent, he/she may be diagnosed as autistic, developmentally disabled, and so on. Therefore, most often, the term "diagnosis" refers merely to "...the assignment of a label that serves as a short-hand term for a set of related behavioral features that may or may not be associated with demonstrable organic or environmental causes" (Morgan, 1981, pp. 46-47). Furthermore, although the discovery of causal factors lends greater credence to the diagnostic label, in the case of several behavioural conditions, diagnosis constitutes a superficial enterprise, involving a description, rather than an explanation of behavioural symptoms (Attwood, 1998; Jordan & Powell, 1995; Morgan, 1981; Russell, 1997; Rutter, 1979; Wing, 1976; as cited in Filbert, 2003).

Difficulties in the Diagnosis of High-Functioning Autism and Asperger Syndrome

Although the distinction between Low-Functioning and High-Functioning Autism has been relatively straightforward, such is not the case for HFA and AS. Therefore, the following section will focus upon these higher-functioning forms of the autism spectrum. Recently, when asked the question of whether Asperger Syndrome is different from High-Functioning Autism, a prominent

researcher in the field answered, "Yes, no, and it depends" (Szatmari, 2000; as cited in Blacher, Kraemer, & Schalow, 2003, p. 535). Such uncertainty is fuelled by several factors which complicate the diagnosis of these conditions. For instance, Howlin (2000) maintains that it has not been feasible to specifically distinguish between individuals with HFA and those with AS for many reasons. First, despite being developmental disorders, whose clinical pictures typically vary with age, many adults presently studied usually were diagnosed as autistic in childhood.

Thus, their current diagnosis may not be accurate. Indeed, as mentioned previously, autism is typically diagnosed in early childhood, while AS is often diagnosed at age nine or ten (Howlin, 2000). Second, the DSM-IV-TR's (APA, 2000) hierarchal model of classification, which classifies on the basis of the presence of few symptoms, may foster inconsistent and frequent diagnoses of these conditions. Lastly, Howlin (2000) cites the failure of research studies to differentiate among HFA and AS in a consistent fashion, through a shifting reliance upon current linguistic functioning versus IQ as distinguishing factors.

Further diagnostic difficulties arise due to the tendency of HFA and AS symptoms to rarely emerge in a clear, well-defined manner to warrant a text-book diagnosis of either condition (Morgan, 1981). Indeed, such symptoms often surface in variable proportions and assortments within individuals who may have other conditions. Under this umbrella of conditions, an individual may therefore be diagnosed with HFA or AS on the basis of just one or two symptomatic features, despite their failure to exhibit the necessary constellation of symptoms. This hindrance abounds in the literature, with researchers espousing "that comorbidity is common, indeed the rule, in autism, albeit less well documented in Asperger Syndrome" (Gillberg & Billstedt, 2000, p. 327). For example, Attention-Deficit/Hyperactivity Disorder

(ADHD), blindness, childhood schizophrenia, chromosome abnormalities, deafness, depression (including bipolar disorder; dysthymic depression; major depression), developmental aphasia, developmental coordination disorder, developmental disability, epilepsy, obsessive-compulsive disorder (OCD), seizure disorder, sleep disorders, symbiotic psychosis, tic disorder, Tourette Syndrome, and weight abnormalities, represent only a small portion of the numerous conditions whose diagnostic features frequently overlap with autism and Asperger Syndrome (Ghaziuddin, 2002; Gillberg & Billstedt, 2000; Morgan, 1981; as cited in Filbert, 2003).

Despite the difficulties involved in teasing out the features of specific conditions, many practitioners do not allot adequate forethought to assigning diagnostic labels, but rather diagnose HFA and AS in conjunction with the growing popularity of these conditions within professional circles (Morgan, 1981). However, even within these circles, diagnosis of HFA and AS is fraught with inter-rater discrepancy due to inconsistent definitional criteria (Frith, 1991, 1992). An additional practitioner fallibility involves possible professional misinterpretation, in which labels are employed to account for the individual's behaviour using circular reasoning. In other words, primary caregivers may be informed, for example, that their child's behaviour is due to HFA or AS, and when the question is raised concerning how the professional knows the child has either of these conditions, he/she uses the child's behaviour as an explanation (Kegelmass, 1974; Morgan, 1981; Wing, 1976; as cited in Filbert, 2003).

Furthermore, as mentioned earlier, both HFA and AS are developmental disorders, with most symptoms manifesting at four years of age, and are therefore subject to a dynamic clinical picture as the individual grows older (Safran, Safran, & Ellis, 2003). Thus, with age, these conditions may begin to resemble other disorders to a greater extent, resulting in the apparent observation of

another disorder altogether different from that displayed in earlier years. A study reported by Wing (1988; as cited in Gillberg, 1989) attests to this common occurrence: "Of seven children who were diagnosed with Asperger Syndrome in late childhood or adolescence, three displayed the classic Kanner's autism in early childhood" (p. 17).

Yet another difficulty with labelling entails the high potential for maladaptive effects which a diagnosis of HFA or AS may have upon an individual's life. For, as stated by Morgan (1981), "once...stamped, the ink is often indelible" (p. 47). In this sense, particular connotations associated with a diagnosis of these conditions may lead to self-fulfilling prophecies. Additionally, "behavioral patterns can vary in different environments, they are subject to change as a function of the child's personality, and all features can occur at any level upon a continuum of severity, ranging from profound to minimal" (Wing, 1989; as cited in Gillberg, 1989, p. 17).

The notion of such a continuum of severity has led some to question whether HFA and AS should be viewed as distinct diagnostic entities, or as over-lapping conditions. Indeed, a mounting evidence base exists that posits these conditions as distinct populations with clinical features that fundamentally differ, and as such, warrant separate assessment, research, and intervention inquiries (McLaughlin-Cheng, 1998; as cited in Filbert, 2003). Thus, the next section of this paper will examine commonly used diagnostic criteria of autism (LFA and HFA) and AS. From this examination, some important similarities and differences between these conditions will then be discussed, with a focus geared toward their association with developmental disability. Because of their developmental nature, as well as the scope of the present study (strength-based assessment), particular attention will be paid to behavioural features of adolescents with these disorders. Adoption of such a focus will hopefully allow for a

stable assessment of the individual's behaviour, so that definitive strengths may be identified.

Description of Low-Functioning Autism and High-Functioning Autism

Low-Functioning Autism (LFA) is a form of autism with accompanying intellectual retardation, not seen in HFA (Manjiviona & Prior, 1999). Autism occurs in about 4-31 per 10, 000 people, although this estimate is dependent upon the diagnostic criteria employed (Filipek et al., 1999; as cited in Beebe & Risi, 2003). Of the individuals diagnosed with autism, roughly 75-80% exhibit an IQ below 70, and are termed low-functioning (in the mentally retarded range; Lord & Rutter, 1994; as cited in Beebe & Risi, 2003), while 20-25% have an IQ in the normal or superior range. This "high-functioning group" has attracted growing attention due to their "...somewhat unique symptom expression, relatively stronger adaptive potential, and amenability to a variety of research and clinical tools" (e.g., Howlin, 1999; Mesibov, Shea, & Adams, 2001; Wing, 1989; as cited in Beebe & Risi, 2003, p. 369).

Also referred to as "Kanner Syndrome", "early infantile autism", and "autistic disorder", Leo Kanner (1943; as cited in Gillberg, 1989) selected the following criteria as both characteristic and diagnostic of this condition: "...profound lack of affective contact with other people; an anxiously obsessive desire for the preservation of sameness in the child's repetitive activity pattern; a fascination for objects, which are handled with skill in fine motor movements; mutism, or the kind of language that does not seem to be intended to serve inter-personal communication; and good cognitive potential manifested by feats of memory or skill in performance tasks" (Gillberg, 1989, p. 6). However, despite the fact that several of these symptoms do not display themselves until just after a child's preschool years, Kanner (1943; as cited in Gillberg, 1989), maintains that these abnormalities must be present from birth or start within the initial first 30 months of life.

Furthermore, Kanner and Eisenberg (1956; as cited in Gillberg, 1989) stressed the first two of the aforementioned criteria, and stated that repetitive activities must be elaborate rather than the simple motor variety (Filbert, 2003).

In addition to Kanner's (1943; as cited in Gillberg, 1989) and Kanner and Eisenberg's (1956; as cited in Gillberg, 1989) criteria, numerous other definitions have been proposed for autism. These include, but are not limited to, the International Classification of Diseases and Disorders 9th and 10th editions (WHO, 1977, 1993), and the Diagnostic and Statistical Manual of Mental Disorders, editions III, III-revised, IV, and IV-text revision (APA, 1980, 1987, 1994, 2000). Due to the dynamic nature of diagnostic criteria, this paper will focus upon the two most commonly utilized criteria (ICD-10 [WHO, 1993] and DSM-IV-TR [APA, 2000]) for Asperger Syndrome, and upon the DSM-IV-TR (APA, 2000) criteria for autism (see Appendix E for a brief description of O'Gorman's diagnostic criteria for autism).

Both the ICD and DSM manuals share a basis of diagnostic algorithms in accordance with strict adherence to categorical organization, and operate on the assumption that particular disorders are more " 'severe', 'basic', or 'pure' than others" (Gillberg & Billstedt, 2000, p. 327). However, strict adherence to such criteria puts one at risk of inaccurate diagnosis within the real-world.

Diagnostic Criteria of Autism

DSM-IV-TR Criteria for Autism. According to the DSM-IV-TR (APA, 2000), the essential features of "autistic disorder" are "...the presence of markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests" (p. 70). Additionally, onset of the disorder must occur prior to three years of age.

Although no specific criteria for High-Functioning Autism exist, it is generally accepted that this label is applied to individuals who, while meeting the criteria for autism, display an absence of severe deficits within intellectual functioning characteristic of autistic disorder (McLaughlin-Cheng, 1998; as cited in Filbert, 2003) (see Appendix F for DSM-IV-TR diagnostic criteria for Autistic Disorder; and Table 1 for a comparison of the clinical features of autism).

Description of Asperger Syndrome

Asperger Syndrome is a neurodevelopmental disorder, which is diagnosed if an individual meets all of the criteria for HFA, but does not display communicative abnormality, mental retardation, or have a history of language delay (Baron-Cohen, 2000; Beebe & Risi, 2003; Meyer & Minshew, 2002). Also referred to as "autistic psychopathy" (Gillberg & Billstedt, 2000, p. 321), "high-functioning autism", "Asperger disorder" (WHO, 1993), and "AS", the major features of this disorder espoused by Hans Asperger (1944; as cited in Gillberg, 1989) include an "odd, naive, egocentric style of social interaction; long-winded, pedantic (formal), repetitive speech; a limited range of circumscribed interests pursued to the exclusion of other activities; poor coordination of movements; and a conspicuous lack of common sense" (Gillberg, 1989, p. 6; as cited in Filbert, 2003).

Diagnostic Criteria of Asperger Syndrome

ICD-10 Criteria for Asperger Syndrome. According to the ICD-10 (WHO, 1993) criteria, a diagnosis of Asperger Syndrome requires that the individual does not display verbal or cognitive deficits; has qualitative impairment within reciprocal social interaction; has an "...unusually intense, circumscribed interest or restricted, repetitive and stereotyped patterns of behaviour, interests, and activities" (WHO, 1993; as cited in Gillberg & Gillberg, 1989, p. 6); and the

observed behaviours are not better accounted for by any other Pervasive Developmental Disorder (PDD) (WHO, 1993; as cited in Gillberg & Gillberg, 1989) (see Appendix G for ICD-10 diagnostic criteria for Asperger Syndrome).

DSM-IV-TR Criteria for Asperger Syndrome. In response to such questions as whether Asperger Syndrome was a distinct disorder or was related to autism, the DSM-IV (APA, 1994) conducted field trials in which 977 subjects from 21 sites were assessed by 125 raters or diagnosticians. Forty-eight cases were identified as having Asperger Syndrome, although 12 failed to meet the "restricted interest" criterion. Furthermore, no inter-rater agreement was found among raters across sites for diagnosis of these 48 individuals (Freeman, Cronin, & Candela, 2002; as cited in Filbert, 2003). Based upon these findings, DSM-IV (APA, 1994) concluded that there was adequate evidence to warrant Asperger Syndrome as one of the Pervasive Developmental Disorders (Freeman et al., 2002; as cited in Filbert, 2003).

According to the DSM-IV-TR (APA, 2000), the essential features of Asperger Syndrome (referred to as "Asperger's Disorder") are as follows:

> severe and sustained impairment in social interaction (Criterion A) and the development of restricted, repetitive patterns of behaviour, interests, and activities (Criterion B). The disturbance must cause clinically significant impairment in social, occupational, or other important areas of functioning (Criterion C). In contrast to Autistic Disorder, there are no clinically significant delays or deviance in language acquisition (e.g., single non-echoed words are used communicatively by age 2 years, and spontaneous communicative phrases are used by age 3 years) (Criterion D), although more subtle aspects of social communication (e.g., typical give-and-take in conversation) may be affected. In addition, during the first 3 years of life, there are no clinically significant delays in cognitive development as manifested by expressing normal curiosity about the environment or in the acquisition of age-appropriate learning skills and adaptive behaviors (other than in social interaction) (Criterion E). Finally, the criteria are not met for another specific Pervasive Developmental Disorder or for Schizophrenia (Criterion F) (APA, 2000, p. 80; see Appendix H for DSM-IV-TR diagnostic criteria for Asperger's Disorder).

Despite such diagnostic criteria, Ghaziuddin (2002) states that the label of AS "...is often applied rather loosely to a variety of conditions" (p. 138). He lists five ways in which AS is used:

1. It is sometimes used synonymously with HFA.
2. It is sometimes viewed as an extreme form of HFA (e.g., for individuals with above-average or superior IQs).
3. It is occasionally used to refer to cases of Pervasive Developmental Disorder (PDD) without language delay (e.g., absence of phase speech by 3 years of age).
4. It may be used to apply to milder forms of PDDs, resulting in the diagnosis of individuals who appear to have outgrown autism.
5. It is sometimes used (mainly for administrative purposes) to describe children who do not easily "fit in" and whose behavior is marked by aggressive outbursts and impulsivity (Ghaziuddin, 2002, p. 138).

The aforementioned criteria have encouraged some opposition among clinicians and researchers, who point to several difficulties inherent within DSM-IV-TR (APA, 2000) Asperger Syndrome criteria. Specifically, these individuals call attention to the similarity between autistic and Asperger Syndrome criteria in the area of social interaction impairment and restricted, repetitive, and stereotypic interest patterns, as well as the need for an absence of any clinically significant cognitive and language development delay for Asperger Syndrome to be diagnosed. For a diagnosis of autism, on the other hand, while there is no requirement of language delay, such a feature is viewed as a potential deviant sign within language development (Freeman et al., 2002). Further difficulties involved with using DSM-IV-TR (APA, 2000) criteria constitute a "threshold problem" (Freeman et al., 2002, p. 146), in which meeting the criteria for autism requires that Asperger Syndrome criteria be ruled out in order for diagnosis to be made. Adding to this confusion is DSM-IV-TR's (APA, 2000) lack of elaboration upon necessary symptoms for diagnosis, despite the tendency for children with Asperger Syndrome to display deficits within

other realms of adaptive functioning (Freeman et al., 2002). With problems such as these, it is small wonder that several recent studies have shown that individuals "clinically perceived as having Asperger Syndrome (even Hans Asperger's own original cases) would be diagnosed as autistic disorder/childhood autism under the DSM-IV-TR/ICD-10" (Gillberg & Billstedt, 2000, p. 322; as cited in Filbert, 2003) (see Appendix I for Gillberg & Gillberg's (1989) diagnostic criteria for Asperger Syndrome; Appendix J for Szatmari, Bremner, & Nagy's (1989) diagnostic criteria for Asperger Syndrome; Table 2 for DSM-IV-TR differences between Asperger's Disorder and Autistic Disorder; Table 3 for a comparison of the clinical features of Asperger Syndrome; and Table 4 for a behavioural comparison of Autistic Disorder and Asperger Syndrome).

DSM-IV-TR Criteria for Developmental Disability. According to DSM-IV-TR (APA, 2000):

> The essential feature of Mental Retardation is significantly subaverage general intellectual functioning (Criterion A) that is accompanied by significant limitations in adaptive functioning in at least two of the following skill areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety (Criterion B). The onset must occur before 18 years (Criterion C). Mental Retardation has many different etiologies and may be seen as a final common pathway of various pathological processes that affect the functioning of the central nervous system (p. 41).

Furthermore, four levels of severity may be specified, reflecting the degree of intellectual impairment: Mild Retardation (IQ level approximately 55-70), Moderate Retardation (IQ level 35-40 to 50-55), Severe Retardation (IQ level 20-25 to 35-40), and Profound Retardation (IQ level below 20 or 25) (APA, 2004; (see Appendix K for DSM-IV-TR diagnostic criteria for mental retardation).

Arguments Against an Autism Spectrum Disorder Label

Again, because LFA and HFA differ primarily in intellectual functioning, the following section will solely list HFA. Therefore, discussion of HFA should be regarded as also pertaining to LFA, with the exception of cognitive abilities. From the aforementioned diagnostic criteria of HFA and AS, several areas of overlap and separation surface. For example, "individuals with both autism and AS are characterized by DSM-IV and ICD-10 criteria as having abnormalities of reciprocal social interaction and restricted, stereotyped, repetitive interests. They differ only with respect to onset and severity of symptoms" (Meyer & Minshew, 2002, p. 153). Despite these similarities, the DSM-IV stipulates that if an individual meets criteria for autism, this diagnosis takes precedence over one of AS. The text-revision of DSM-IV provides new information which serves to highlight the overlap between autism and AS. The manual notes, for instance, that individuals with AS may exhibit language abnormalities (Meyer & Minshew, 2002). Given the substantial symptom overlap among HFA and AS, it is small wonder that many question whether these conditions are truly separable, arguing instead for an autism spectrum. In fact, in a recent study comparing individuals with HFA and AS, the researchers concluded that, "Asperger Syndrome may simply be high-IQ autism" (Miller & Ozonoff, 2000; as cited in Meyer & Minshew, 2002, p. 153). Similarly, although a primary diagnostic distinction between HFA and AS is early language development, Mayes, Calhoun, and Crites (2001; as cited in Meyer & Minshew, 2002), "provided empirical evidence that the presence or absence of speech delay is irrelevant to later presentation of autistic symptoms, language, and ability profile among high-functioning children diagnosed with either autism or AS" (p. 153). Further complications arise from a failure to distinguish individuals with HFA from those with AS prior to comparing these

conditions. For example, "the current gold standard" (Meyer & Minshew, 2002, p. 153) for autism diagnosis, the Autism Diagnostic Interview-Revised (ADI-R; Lord, Rutter, & LeCouteur, 1994), does not list delayed or disordered language development as a diagnostic criterion, and as such, it is a common occurrence to locate individuals who satisfy the criteria for diagnosis of HFA, but who do not have a language delay. With a state of affairs such as this, no clear distinction exists between HFA and AS. Indeed, when differences are found, they tend to be in severity, rather than type (Meyer & Minshew, 2002). Accordingly, many advocate that these two conditions be placed under the broad label of "Autism Spectrum Disorders (ASD)", encompassing impairments of ranging severity within social interaction, communication, and imagination (Wing, 1998; as cited in Meyer & Minshew, 2002, p. 153). For this reason, a dimensional approach has been suggested to replace traditional categorical systems, such as that employed by the DSM-IV-TR (Leekam, Libby, Wing, Gould, & Gillberg, 2000).

With the above limitations in mind, numerous differences have nonetheless been cited between HFA and AS. For example, researchers at Yale University have suggested that individuals with these conditions differ in both behavioural strengths and weaknesses as well as neuropsychological profiles (Klin et al., 1995; as cited in Ozonoff, South, & Miller, 2000). In addition to adaptive behavioral functioning, these areas may be divided into another consideration commonly cited in the literature: (1) cognitive functioning (e.g., intelligence, memory, and language; McLaughlin-Cheng, 1998).

Cognitive Functioning

Intelligence, Memory, and Language. In a comparison of children with AS to those with Kanner's autism, Wing (1981; as cited in McLaughlin-Cheng, 1998) found that children with

autism displayed delayed language development, as well as language deficits (e.g., echolalia, mutism, pronoun reversal). This group also had below average IQ scores, unlike children with AS, who displayed normal language development and cognitive functioning (e.g., appropriate grammar, good vocabulary, average IQ scores) (Wing, 1981; as cited in McLaughlin-Cheng, 1998).

Further studies have expanded upon these differences citing heterogeneity in nonverbal and verbal skills within each diagnostic group. Research indicates, for example, that individuals with HFA have stronger nonverbal than verbal skills, with the reverse being true for those with AS (Gillberg, 1998; as cited in Meyer & Minshew, 2002). However, variability in assessment measures discredits this finding. Nevertheless, in a clinical and neurobehavioural literature review, individuals with HFA were found to have problems with executive functioning (set-shifting and cognitive motor response inhibition) (Rinehart, Bradshaw, Brereton, & Tonge, 2002a.; as cited in Blacher, Kraemer, & Schalow, 2003). No such finding surfaced for individuals with AS, who were instead typically termed "clumsy". Furthermore, in a recent study, HFA was associated with left hemispheric dysfunction, while AS was associated with dysfunction in the right hemisphere (Rinehart et al., 2002b.) Moreover, individuals with AS have been occasionally found to outperform their HFA counterparts on abstract reasoning and theory of mind tasks (Meyer & Minshew, 2002). For example, in the "...first study to reveal significant dissociations between HFA and AS individuals' performance independent of diagnostic classification, while employing rigorous standardized measures in making the differential diagnosis and including an appropriate control group" (p. 1849), Ene (1999) found that individuals with HFA performed significantly better than those with AS on tasks involving

abstract visual-spatial skills, while those with AS performed better on tasks involving visual integration of meaningful information. Furthermore, individuals with HFA exhibited impaired emotional labelling and perceptual skills within auditory and visual modalities, when compared to those with AS (Ene, 1999).

In sum, research tends to indicate the HFA and AS "are relatively indistinguishable on the basis of cognitive measures, with a few minor exceptions, which may be attributable to diagnostic severity in one or another domain" (Meyer & Minshew, 2002, p. 158) (see Appendix L for arguments for and against separate diagnosis of high-functioning autism and asperger syndrome).

Purpose of the Present Study

This being the case, the present study seeks to establish the strengths, adaptive functioning, and behavioural profile of adolescents who have been diagnosed with autism, Asperger Syndrome and developmental disability. In keeping with Epstein and Sharma's (1998) three hypotheses, the present study seeks to understand the adolescent's unique strengths in these different clinical populations.

Furthermore, the present study seeks to determine whether findings similar to those of Gomes (2002) and Welsh (2003) will be found for adolescents with autism spectrum disorders and developmental disability, by applying the SAI completed by primary caregivers, to individuals who have such biologically-based clinical diagnoses. With the rising prevalence of, and questions surrounding the diagnostic similarity between autism spectrum disorders and developmental disability, these conditions were thought to be ideal candidates for this important investigation.

The ability to further differentiate these diagnostic groups based on strengths may provide useful information regarding positive prognosticators and long-term adaptation to daily living. According to Tsatsanis (2003), "this information (regarding strengths, adaptive functioning, and behavioural problems) may assist the family (of those with autism spectrum disorders and developmental disability), in forming realistic expectations and setting meaningful goals, and also in planning for the future" (p. 47). Furthermore, as stated by Tsatsanis (2003), "differences in outcome may provide one of the soundest justifications for a differentiation between AS and autism" (p. 47). Because one's adaptive abilities are related to outcome, information regarding the individual's adaptive behaviour may provide evidence for such important differences. Indeed, knowledge concerning developmental factors, coupled with the tenets of positive psychology, may provide a "...catalyst for prevention" (Welsh, 2003, p. 10).

Similarly, there is a lack of literature concerning the experience of families raising children with autism spectrum disorders (Blacher et al., 2003). The importance of incorporating familial views is well-documented in a study which found that parents of children with HFA and AS "...had significantly greater concern about the behavior and social skills of their children than did the student's teachers" (Myles & Simpson, 2002, p. 133). Obtaining parental information from an adolescent population will provide valuable clinical information. Indeed, adolescence is a time of great change, as social demands escalate and increasing cognitive sophistication typically results in greater awareness of strengths and weaknesses (Beebe & Risi, 2003). Measurement of adaptive behaviours will hopefully lessen the demands of this developmental phase by working to build upon the individual's strengths. Furthermore, as mentioned previously, examination of an adolescent sample will allow for a more stable assessment of strengths and behavioural

difficulties, as the diagnosis of ASDs and DDs have been firmly established by this time.

Additionally, the prediction of adaptive behaviour may serve to buffer negative views regarding autism spectrum disorders and developmental disabilities. For, as stated by Baron-Cohen (2000), "...people with AS/HFA might not necessarily be disabled in an environment in which they can exert greater control of events" (p. 497). Such a feat is in keeping with positive psychology, which requires that "...positive repertoires of human behavior should be actively enhanced by psychological science rather than left to chance or to control by other sources of influence" (Follette et al., 2001, p. 104). This study seeks to enhance such positive repertoires within adolescents with autism spectrum disorders and developmental disabilities so that these conditions may be better understood. Specifically, the purpose of the present study is two-fold: (1) to critically examine possible strengths possessed by adolescents with autism spectrum disorders and developmental disabilities via completion of the BERS and SAI by their primary caregivers; and (2) to develop a profile of strengths and difficulties within these diagnostic categories so as to determine whether certain strengths are unique to one group, and whether a differential relationship exists between strengths, adaptive skills and behavioural problems within these groups.

With this purpose in mind, the following hypotheses were devised:

Hypotheses

1. It is hypothesized that adolescents with autism spectrum disorders and developmental disability will exhibit a different pattern of strengths from normal adolescents (control group).

2. Although different strength profiles are predicted for each diagnostic group, it is hypothesized that adolescents with LFA will exhibit a similar strength profile to adolescents with developmental disability. It is expected that adolescents with HFA will exhibit a similar strength profile to adolescents with AS.
3. It is hypothesized that strength and adaptive measures assessment will differentiate lower-functioning autism from both its higher-functioning counterparts (HFA and AS) and developmental disability, by delineating specific areas of strength and adaptive functioning within these groups.
4. It is hypothesized that strength will be differentially related to adaptive functioning and behavioural problems within each of the diagnostic groups.
5. Finally, this research will also attempt to develop further psychometric properties of the SAI with these populations of adolescents.

Method

Participants

Participants consisted of 30 primary caregivers (e.g., parents/guardians) in total: five primary caregivers of adolescents with a diagnosis of Low-Functioning Autism (IQ below 70), five primary caregivers of adolescents with a diagnosis of High-Functioning Autism (IQ 70 and above), six primary caregivers of adolescents with a diagnosis of Asperger Syndrome, and six primary caregivers of adolescents with a diagnosis of developmental disability. Eight primary caregivers of adolescents without any formal clinical diagnosis served as a control group. Low-Functioning Autism, HFA, and AS primary caregivers were recruited through Lakehead Regional Family Centre (LRFC), located in Thunder Bay, Ontario, Canada. Most of these individuals were

clients of this agency. Primary caregivers of the DD and the control group were recruited through the Lakehead Public Schools System (five elementary schools and two secondary schools).

The variables of sex and age had the following dispersion within the groups: the low-functioning autism group (n = 5) was composed of two males and three females, with an average age of 11.0 years; the high-functioning autism group (n = 5) had four males and one female, with an average age of 14.6 years; the Asperger Syndrome group (n = 6) had six males, with an average age of 13.3 years; the developmental disability group (n = 6) had three males and three females, with an average age of 15.5 years; and the control group (n = 8) consisted of three males and five females, with an average age of 12.9 years. All adolescents were Caucasian, with the exception of one male in the low-functioning autism group, who was of Native descent.

Clinical Diagnoses

A formal diagnostic assessment completed by a registered psychologist was sought from primary caregivers of adolescents with LFA, HFA, and AS, in order to verify the diagnosis of these conditions. This information was obtained with the primary caregiver's informed consent from the Autism Coordinator of LRFC, who has access to all assessment reports of these adolescents. Specifically, upon receiving the parent's written consent, as outlined on the informed consent form for primary caregivers of adolescents with LFA, HFA, or AS (see Appendix M for informed consent form for primary caregivers of adolescents with Low-Functioning Autism, High-Functioning Autism, and Asperger Syndrome), the Autism Coordinator provided the researchers with a list of the adolescent's name and respective diagnosis, in order to ensure that the adolescent met the criteria for a diagnosis of LFA, HFA, or AS. With regards to DD adolescents, the special needs teachers provided the researchers with a

list of the student's names and respective diagnosis, once written parental consent had been obtained, as outlined on the informed consent form for primary caregivers of adolescents with DD (see Appendix N for informed consent form for primary caregivers of adolescents with developmental disabilities).

Measures

Behavioral and Emotional Rating Scale (BERS). The Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1998) was used to measure the adolescent's strengths. This instrument examines strengths across a range of areas, with the intent of identifying strengths to be used in subsequent treatment. The BERS contains 52 items encompassing five areas: (1) interpersonal strength; (2) family involvement; (3) intrapersonal strength; (4) school functioning; and (5) affective strength. A four-point Likert scale is used for item endorsement (0 = not at all like the child; 1 = not much like the child; 2 = like the child; 3 = very much like the child). From these items, five subscale scores and an overall strength score are derived. An average internal consistency of .97 across all subscales was obtained for children aged 5 to 18 with emotional and behavioural disorders, with subscale internal consistencies ranging from .84 to .92 (Epstein & Sharma, 1998).

Strength Assessment Inventory (SAI). The Strength Assessment Inventory (SAI; Rawana et al., 2000) was also used to assess the adolescent's strengths. Like the BERS, this instrument measures strengths across a variety of domains, and operates under the assumption that children possess unique strengths to be utilized with treatment planning. The SAI contains 50 items, encompassing seven areas: (1) personal and physical care; (2) family circumstances/parenting; (3) education; (4) peer relations; (5) leisure/recreation; (6) attitudes/orientation; and

(7) personality/behavior characteristics. A four-point Likert scale is used for item endorsement (0 = not at all like the child; 1 = not much like the child; 2 = like the child; 3 = very much like the child). Although originally devised for assessment of young offenders, the SAI's content has been adjusted for applicability to young children as well. Because of an absence of norms, the internal consistency of the SAI is unknown (Welsh, 2003).

Child Behavior Checklist (CBCL)-Parent-Report Form. The Child Behavior Checklist (CBCL; Achenbach,) was used to assess current presenting issues in the adolescent. The CBCL is used to assess competencies and difficulties within children ages 4 to 18 years. The 112 checklist items included in the measure reflect daily activities, relationships, and academic functioning. A three-point Likert scale is used for item endorsement (0 = not true; 1 = somewhat or sometimes true; 2 = very true or often true). The problem subscales are divided into the following eight areas: (1) withdrawn; (2) somatic complaints; (3) anxious/depressed; (4) social problems; (5) thought problems; (6) attention problems; (7) delinquent behavior; and (8) aggressive behavior. From these eight subscales, both externalizing and internalizing subscale scores are derived. An average internal consistency of.96 for the CBCL was found for referred and non-referred boys and girls (ages 4 to 11 years) across all subscales. Subscale alpha coefficients range from .62 to .93 (Achenbach, 1991).

Adaptive Behavior Assessment System-Second Edition (ABAS-II)-Parent Form. The Adaptive Behavior Assessment System-Second Edition (ABAS-II; Harrison & Oakland, 2003) is a comprehensive, norm-referenced measure of adaptive skills for individuals aged birth to 89 years. The ABAS-II may be utilized for adaptive skill assessment, identification of strengths and weaknesses, as well as for longitudinal progress documentation. This measure may be used for

individuals with a number of disabilities, disorders, and health conditions, such as developmental disabilities, developmental delays, emotional and learning disorders, and dementias. The broad adaptive domains measured by the ABAS-II derive from specifications of the American Association on Mental Retardation (AAMR; 1992, 2002; as cited in Harrison & Oakland, 2003) and the DSM-IV-TR (APA, 2000). The ABAS-II-Parent Form assesses adaptive functioning within individuals aged 5 to 21 years across multiple settings, allowing for a thorough assessment of daily functional skills. This form contains 232 items, with 21-25 items per skill area. The 10 skill areas are as follows: (1) communication; (2) community use; (3) functional academics; (4) home living; (5) health and safety; (6) leisure; (7) self-care; (8) self-direction; (9) social; and (10) work. Standardization studies revealed internal consistencies of the ABAS-II ranging from .97-.99, and test-retest reliabilities for the parent form, with a test-retest interval ranging from five days to six weeks, ranged from .79-.93 for individuals aged 5-9 years, from .80 to .94 for individuals aged 10-12 years, from .87 to .95 for individuals aged 13-21 years, and from .84 to .93 for individuals for all age groups (Harrison & Oakland, 2003).

Procedure

Primary caregivers of adolescents with a formal diagnosis of LFA, HFA, and AS were recruited through Lakehead Regional Family Centre (LRFC), located in Thunder Bay, Ontario, Canada. These parents were informed of the proposed study through publication of an advertisement outlining the proposed study in a Fall 2004 LRFC newsletter (see Appendix O for study description). Additionally, the primary researcher attended regularly sponsored LRFC parent support meetings, with the permission of the Autism Coordinator who runs these meetings. At this time, the primary researcher also informed prospective participants of the

proposed study, in addition to the aforementioned newsletter information. Primary caregivers of the DD group and the control group were recruited through the Lakehead Public Schools System, once ethics approval had been achieved both from Lakehead University and this organization. Both LRFC and the Lakehead Public Schools System were forwarded a letter describing the study (see Appendix P for LRFC letter; and Appendix R for Lakehead Public Schools System letter), together with the required documents for ethical approval of these organizations. Interested primary caregivers recruited through LRFC were forwarded a cover letter describing the study, as well as an instructional page, the four questionnaires, and an informed consent form (see Appendix Q for cover letter forwarded to primary caregivers of adolescents with autism spectrum disorders; and Appendix R for instructional page; Appendix M for informed consent form for primary caregivers of adolescents with autism spectrum disorders).

Upon receiving ethics approval from the Lakehead Public Schools System, principals of the five elementary and two secondary schools containing adolescents with developmental disabilities were forwarded a letter outlining the study (see Appendix S for letter forwarded to principals of elementary schools; and Appendix T for letter forwarded to principals of secondary schools). Principals were also sent letters to be circulated to the teachers of grades six to twelve (see Appendix U for letter circulated to special needs teachers). In addition to this letter, principals were sent cover letters to be forwarded to each special needs teacher, which were sent home with the adolescents in the class for their primary caregiver to review (see Appendix W for cover letter for primary caregivers of adolescents with developmental disabilities). Interested primary caregivers were sent the same cover letter, an instructional page, four questionnaires, and an informed consent form specific to their diagnostic group via mail (see Appendix X for

instructional page; and Appendix N for informed consent form for primary caregivers of adolescents with developmental disability).

Adolescents without a diagnosis of autism spectrum disorders and developmental disabilities were also recruited from these seven schools, once data had been gathered for the LFA, HFA, AS, and DD groups. When the number of participants in each of these diagnostic categories had been determined, the normal control group was matched according to age, to ensure an equal sampling of adolescents of each age (e.g., 11-18 years). To this end, the Lakehead Public School System was forwarded the same letter outlining the study, used in recruiting DD adolescents (see Appendix Q for letter to Lakehead Public Schools System). However, teachers were sent different letters, describing the specific sample of "normal" adolescents required (see Appendix Y for letter sent to teachers of "normal" adolescents). Additionally, these teachers were provided with cover letters to be forwarded to the primary caregivers, which were specific to "normal" adolescents (see Appendix Z for cover letter forwarded to primary caregivers of "normal" adolescents). Interested participants were forwarded this cover letter, an instructional page, four questionnaires, and an informed consent form specific to this group of adolescents (see Appendix X for instructional page; and Appendix a for informed consent form for primary caregivers of "normal" adolescents).

Interested participants were forwarded the same cover letter either published in the LRFC newsletter (for LFA, HFA, and AS primary caregivers; see Appendix S), or sent home by the teachers of their adolescent (see Appendix W; and Appendix Z), an instructional page (see Appendix S; and Appendix X), informed consent form (see Appendix M; Appendix N; and Appendix a), and four questionnaires via mail, after a telephone call had been made back by the

primary researcher to thank them for participating and also to explain the study to them, and answer any questions, now that they had agreed to participate. The primary researcher also informed participants that she would be available to speak with them if they had any questions. These questionnaires took a maximum of approximately two hours to complete, and a note stating that the terms "child" and "adolescent" should be viewed as interchangeable were included with the questionnaires (see Appendix b for accompanying note to questionnaires). The primary researcher also gave participants the option of meeting on an individual basis, at which time completed questionnaires were picked up. Otherwise, parents used the self-addressed stamped envelopes included to mail the questionnaires to the Psychology Department of Lakehead University. However, some parents/guardians of adolescents with LFA, HFA, and AS dropped off completed questionnaires to LRFC for pick-up by the primary researcher. Similarly, some parents/guardians of "normal" adolescents and adolescents with developmental disabilities dropped off their completed questionnaires to their adolescent's school, which were then mailed to the primary researcher at Lakehead University.

Results

Following computation of one-way analysis of variance (ANOVA), the Student-Newman-Keuls post hoc test for one-way analysis of variance was used to examine significant differences for each of the diagnostic groups on the subscales of the four measures. This examination yielded a pattern of significant differences which will be described according to each of the five hypotheses under investigation.

Hypothesis One

It was hypothesized that adolescents with autism spectrum disorders and developmental disability would exhibit a different pattern of strengths from normal adolescents (control group).

Hypothesis Two

Although different strength profiles were predicted for each diagnostic group, it was hypothesized that adolescents with low-functioning autism would exhibit similar strengths to adolescents with developmental disability. It was also expected that adolescents with high-functioning autism would exhibit similar strengths to adolescents with Asperger Syndrome.

Behavioral and Emotional Rating Scale (BERS) Subscale Scores. One-way ANOVA revealed a significant difference between groups on the interpersonal strength subscale of the BERS, F (4, 29) = 4.787, p <.05. Post hoc tests showed that low-functioning autism was significantly lower (M = 15.800; SD = 9.149) than the control group (M = 33.375; SD = 3.159). Similarly, on the intrapersonal strength subscale, F (4, 29) = 4.089, p <.05, low-functioning autism was significantly lower (M = 15.400; SD = 5.683) than the control group (M = 27.000; SD = 3.117). This suggests that individuals with low-functioning autism have significantly fewer interpersonal and intrapersonal strengths than individuals without diagnoses of autism spectrum disorders or developmental disability, thus supporting hypothesis one. The only other significant difference for the BERS was found on the school functioning subscale, F (4, 29) = 17.005, p <.05, with low-functioning autism (M = 7.800; SD = 2.588) and developmental disability (M = 9.167; SD = 5.193) being significantly lower than high-functioning autism (M = 15.600; SD = 3.362), and the control group being significantly higher than all groups (M = 23.000; SD = 2.878). Therefore, individuals with low-functioning autism and developmental disability

appear to have significantly fewer strengths in school functioning than those with high-functioning autism, thus supporting hypothesis two. Furthermore, those without diagnoses of autism spectrum disorders or developmental disability appear to have significantly greater strengths in school functioning than those with these diagnoses, thus supporting hypothesis one.

Strength Assessment Inventory (SAI) Subscale Scores. One-way ANOVA revealed a significant difference between groups on the education subscale of the SAI, F (4, 29) = 9.579, p <.05. Post hoc tests showed that the control group was significantly higher (M = 25.500; SD = 3.117) than developmental disability (M = 12.167; SD = 4.792), low-functioning autism (M = 13.000; SD = 3.317), high-functioning autism (M = 18.200; SD = 6.648), and Asperger Syndrome (M = 18.500; SD = 4.593). Similarly, on the leisure/recreation subscale, F (4, 29) = 4.907, p <.05, the control group was significantly higher (M = 35.625; SD = 2.925) than low-functioning autism (M = 22.800; SD = 8.927), Asperger Syndrome (M = 25.333; SD = 6.919), developmental disability (M = 27.000; SD = 5.329), and high-functioning autism (M = 27.800; SD = 3.899). The control group was also significantly higher on the attitudes/orientation subscale, F (4, 29) = 5.753, p <.05, (M = 10.625; SD = 1.923), when compared to developmental disability (M = 3.167; SD = 1.472), low-functioning autism (M = 4.600; SD = 5.413), Asperger Syndrome (M = 5.667; SD = 3.266), and high-functioning autism (M = 6.000; SD = 3.082). This suggests that individuals without diagnoses of autism spectrum disorders or developmental disability have significantly greater strengths in education, leisure/recreation, and attitudes/orientation than those with these diagnoses, thus supporting hypothesis one. Lastly, on the personality/behaviour characteristics subscale, F (4, 29) = 4.468, p <.05, low-functioning autism was significantly lower (M = 13.400; SD = 8.591) than high-functioning autism

(M = 27.000; SD = 6.964) and the control group (M = 33.000; SD = 5.451). This suggests that individuals with low-functioning autism have significantly fewer strengths in personality/behaviour characteristics than those with high-functioning autism, as well as those without autism spectrum disorders or developmental disability, thus supporting hypothesis two.

Hypothesis Three

It was hypothesized that strength and adaptive measures assessment would differentiate lower-functioning autism from both its higher-functioning counterparts (HFA and AS) and developmental disability, by delineating specific areas of strength and adaptive functioning within these groups.

Adaptive Behavior Assessment System - Second Edition (ABAS-II) Subscale Scores. One-way ANOVA revealed a significant difference between groups on the communication subscale of the ABAS-II, F (4, 29) = 11.770, p <.05. Post hoc tests showed that low-functioning autism was significantly lower (M = 23.200; SD =12.814) than developmental disability (M = 45.833; SD = 15.355), and the control group was significantly higher than all other groups (M = 64.875; SD = 7.680). This suggests that individuals with low-functioning autism exhibit significantly fewer communication skills than those with developmental disability, and that those without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater strength in this area than those with these diagnoses, thus supporting hypothesis one. On the community use subscale, F (4, 29) = 8.116, p <.05, low-functioning autism was significantly lower (M = 5.600; SD = 5.030) than high-functioning autism (M = 38.000; SD = 7.616) and Asperger Syndrome (M = 39.167; SD = 25.725), and the control group was significantly higher than all other groups (M = 50.875; SD = 10.162). This suggests that individuals with low-

functioning autism exhibit significantly fewer community use skills than those with high-functioning autism and Asperger Syndrome, and that those without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater strength in this area than those with these diagnoses, thus supporting hypothesis one. On the functional academics subscale, F (4, 29) = 9.692, p <.05, low-functioning autism was significantly lower (M = 16.000; SD = 16.171) than Asperger Syndrome (M = 44.167; SD = 22.613) and high-functioning autism (M = 51.600; SD = 6.025), and the control group was significantly higher than all other groups (M = 61.625; SD = 6.046). This suggests that individuals with low-functioning autism exhibit significantly fewer functional academic skills than those with high-functioning autism and Asperger Syndrome, and that those without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater strength in this area than those with these diagnoses, thus supporting hypothesis one. On the home living subscale, F (4, 29) = 5.666, p <.05, low-functioning autism (M = 24.600; SD = 9.072) was significantly lower than all other groups. This suggests that individuals with low-functioning autism exhibit significantly fewer skills in home living than those with high-functioning autism, Asperger Syndrome, developmental disability, and individuals without these diagnoses. On the health and safety subscale, F (4, 29) = 8.908, p <.05, low-functioning autism was significantly lower (M = 25.400; SD = 13.939) than developmental disability (M = 42.667; SD = 12.691), and the control group was significantly higher than all other groups (M = 60.125; SD = 5.139). This suggests that individuals with low-functioning autism exhibit significantly fewer health and safety skills than those with developmental disability, and that those without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater strength in this area than those

with these diagnoses, thus supporting hypothesis one. On the leisure subscale, F (4, 29) = 8.289, p <.05, low-functioning autism was significantly lower (M = 26.000; SD = 7.517) than Asperger Syndrome (M = 41.500; SD = 14.181), and the control group was significantly higher than all other groups (M = 56.250; SD = 7.517). This suggests that individuals with low-functioning autism exhibit significantly fewer leisure skills than those with Asperger Syndrome, and that those without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater strength in this area than those with these diagnoses, thus supporting hypothesis one. On the self-care subscale, F (4, 29) = 5.793, p <.05, low-functioning autism was significantly lower (M = 39.200; SD = 10.826) than high-functioning autism (M = 65.000; SD = 6.633) and the control group (M = 67.875; SD = 4.486). This suggests that individuals with low-functioning autism exhibit significantly fewer self-care skills than those with high-functioning autism, as well as those without diagnoses of autism spectrum disorders or developmental disability. On the self-direction subscale, F (4, 29) = 6.082, p <.05, low-functioning autism was significantly lower (M = 23.600; SD = 14.010) than high-functioning autism (M = 49.600; SD = 8.562), and the control group was significantly higher than all other groups (M = 62.875; SD = 9.280). This suggests that individuals with low-functioning autism exhibit significantly fewer self-direction skills than those with high-functioning autism, and that those without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater strength in this area than those with these diagnoses, thus supporting hypothesis one. Lastly, on the social subscale, F (4, 29) = 5.326, p <.05, low-functioning autism was significantly lower (M = 27.400; SD = 19.360) than the control group (M = 61.500; SD = 8.783). This suggests that individuals with low-functioning autism exhibit significantly fewer social skills than those without diagnoses

of autism spectrum disorders or developmental disability. All of these findings are supportive of hypotheses two and three.

Hypothesis Four

It was hypothesized that strength would be differentially related to adaptive functioning and behavioural problems within each of the diagnostic groups. Due to the small sample size in the current study, comparison between measures was not possible. However, a comparison of the significant differences between the diagnostic groups on each measure will provide a profile of each group's strengths, adaptive functioning and behavioural difficulties. From these profiles, one can determine whether the presence of several strengths and adaptive functioning abilities are associated with fewer behavioural problems, and whether several behavioural problems are associated with fewer strengths and adaptive functioning abilities. Therefore, following the results of the Child Behavior Checklist (CBCL) subscale scores, five tables will be presented illustrating the profile of strengths, adaptive functioning, and behavioural difficulties for each diagnostic group.

Child Behavior Checklist (CBCL) Subscale Scores. One-way ANOVA revealed a significant difference between groups on the activities subscale of the CBCL, F (4, 29) = 3.349, p <.05. Post hoc tests showed that low-functioning autism was significantly lower (M = 7.200; SD = 3.094) than high-functioning autism (M = 11.400; SD = 1.517) and the control group (M = 11.438; SD = 2.321) on this variable. This suggests that individuals with low-functioning autism have significantly lower activity skills than those with high-functioning autism, as well as those without autism spectrum disorders or developmental disability. On the school subscale, F (4, 29) = 41.155, p <.05, low-functioning autism was significantly lower (M = 1.400; SD = .894) than

high-functioning autism ($M = 2.700$; $SD = .8367$), and Asperger Syndrome ($M = 2.917$; $SD = .492$), but not developmental disability. The control group was significantly higher than all other groups ($M = 5.563$; $SD = .417$). This suggests that individuals with low-functioning autism and developmental disability exhibit similar profiles in terms of their school functioning, but differ in this regard from those with high-functioning autism and Asperger Syndrome. Furthermore, individuals without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater skills in this area than those with these diagnoses. On the total competence subscale, $F(4, 29) = 7.103$, $p < .05$, the control group was significantly higher ($M = 26.250$; $SD = 4.088$) than low-functioning autism ($M = 14.100$; $SD = 6.675$), developmental disability ($M = 16.917$; $SD = 3.153$), Asperger Syndrome ($M = 18.583$; $SD = 4.477$), and high-functioning autism ($M = 19.500$; $SD = 3.260$). This suggests that individuals without diagnoses of autism spectrum disorders or developmental disability exhibit significantly greater total competence than individuals with these diagnoses. On the thought problems subscale, $F(4, 29) = 3.924$, $p < .05$, the control group was significantly lower ($M = 1.375$; $SD = 1.188$) than Asperger Syndrome ($M = 8.167$; $SD = 4.401$), and low-functioning autism ($M = 8.400$; $SD = 4.278$). This suggests that individuals without diagnoses of autism spectrum disorders or developmental disability exhibit significantly fewer thought problems than those with Asperger Syndrome and low-functioning autism. Similarly, on the attention problems subscale, $F(4, 29) = 4.703$, $p < .05$, the control group was significantly lower ($M = 2.500$; $SD = 2.330$) than Asperger Syndrome ($M = 9.667$; $SD = 5.007$) and low-functioning autism ($M = 12.000$; $SD = 4.950$). This suggests that individuals without diagnoses of autism spectrum disorders or developmental disability exhibit significantly fewer attention problems than those with Asperger Syndrome and low-

functioning autism. Lastly, on the attention deficit/hyperactivity problems subscale, F (4, 29) = 3.822, p <.05, the control group was significantly lower (M = 1.625; SD = 1.506) than the low-functioning autism group (M = 7.800; SD = 1.924). This suggests that individuals without diagnoses of autism spectrum disorders or developmental disability exhibit significantly fewer attention deficit/hyperactivity problems than those with low-functioning autism. All of these findings are supportive of hypothesis four.

Table 5

Profile of Strengths, Adaptive Functioning, and Behavioural Difficulties for Low-Functioning Autism Group

	Variables		
	Strength	**Adaptive Functioning**	**Behavioural Difficulty**
group mean (and standard deviations) for significant differences on subscales measuring variables			
interpersonal strength (BERS)	15.800 (9.149)		
intrapersonal strength (BERS)	15.400 (5.683)		
school functioning (BERS)	7.800 (2.588)		
education (SAI)	13.000 (3.317)		
leisure/recreation (SAI)	22.800 (8.927)		
attitudes/orientation (SAI)	4.600 (5.413)		
personality/ behaviour characteristics (SAI)	13.400 (8.591)		
communication (ABAS-II)		23.200 (12.814)	
community use (ABAS-II)		5.600 (5.030)	
functional academics (ABAS-II)		16.000 (16.171)	
home living (ABAS-II)		24.600 (9.072)	
health and safety (ABAS-II)		25.400 (13.939)	
leisure (ABAS-II)		26.000 (7.517)	
self-care (ABAS-II)		39.200 (10.826)	
self-direction (ABAS-II)		23.600 (14.010)	
social (ABAS-II)		27.400 (19.360)	
activities (CBCL)			7.200 (3.094)
school (CBCL)			1.400 (.894)
total competence (CBCL)			14.100 (6.675)
thought problems (CBCL)			8.400 (4.278)
attention problems (CBCL)			12.000 (4.950)
attention deficit/hyperactivity problems (CBCL)			7.800 (1.924)

Table 6

Profile of Strengths, Adaptive Functioning, and Behavioural Difficulties for High-Functioning Autism Group[1]

	Variables		
	Strength	**Adaptive Functioning**	**Behavioural Difficulty**
group mean (and standard deviations) for significant differences on subscales measuring variables			
interpersonal strength (BERS)	24.600* (5.413)		
intrapersonal strength (BERS)	18.200* (5.357)		
school functioning (BERS)	15.600 (3.362)		
education (SAI)	18.200 (6.648)		
leisure/recreation (SAI)	27.800 (3.899)		
attitudes/orientation (SAI)	6.000 (3.082)		
personality/ behaviour characteristics (SAI)	27.000 (6.964)		
communication (ABAS-II)		59.200* (8.408)	
community use (ABAS-II)		38.000* (7.616)	
functional academics (ABAS-II)		51.600* (6.025)	
home living (ABAS-II)		53.200 (12.357)	
health and safety (ABAS-II)		55.000* (6.892)	
leisure (ABAS-II)		44.800* (4.382)	
self-care (ABAS-II)		65.000 (6.633)	
self-direction (ABAS-II)		49.600* (8.562)	
social (ABAS-II)		46.000* (5.788)	
activities (CBCL)			11.400 (1.517)
school (CBCL)			2.700 (.8367)
total competence (CBCL)			19.500 (3.260)
thought problems (CBCL)			4.200* (2.683)
attention problems (CBCL)			8.600* (4.669)
attention deficit/hyperactivity problems (CBCL)			5.200* (2.950)

[1] The asterisks indicate means which were not significantly different from at least one other group.

Table 7

Profile of Strengths, Adaptive Functioning, and Behavioural Difficulties for Asperger Syndrome Group[2]

	Variables		
	Strength	**Adaptive Functioning**	**Behavioural Difficulty**
group mean (and standard deviations) for significant differences on subscales measuring variables			
interpersonal strength (BERS)	22.667* (10.328)		
intrapersonal strength (BERS)	18.333* (5.086)		
school functioning (BERS)	13.000* (4.472)		
education (SAI)	18.500 (4.593)		
leisure/recreation (SAI)	25.333 (6.919)		
attitudes/orientation (SAI)	5.667 (3.266)		
personality/ behaviour characteristics (SAI)	23.167* (8.329)		
communication (ABAS-II)		53.000* (11.082)	
community use (ABAS-II)		39.167* (25.725)	
functional academics (ABAS-II)		44.167* (22.613)	
home living (ABAS-II)		43.333 (15.795)	
health and safety (ABAS-II)		48.667* (13.794)	
leisure (ABAS-II)		41.500 (14.181)	
self-care (ABAS-II)		54.833* (18.324)	
self-direction (ABAS-II)		40.167* (22.921)	
social (ABAS-II)		41.500* (16.670)	
activities (CBCL)			10.083* (1.594)
school (CBCL)			2.917 (.492)
total competence (CBCL)			18.583 (4.477)
thought problems (CBCL)			8.167 (4.401)
attention problems (CBCL)			9.667 (5.007)
attention deficit/hyperactivity problems (CBCL)			6.333* (4.761)

[2] The asterisks indicate means which were not significantly different from at least one other group.

Table 8

Profile of Strengths, Adaptive Functioning, and Behavioural Difficulties for Developmental Disability Group[3]

	Variables		
	Strength	**Adaptive Functioning**	**Behavioural Difficulty**
group mean (and standard deviations) for significant differences on subscales measuring variables			
interpersonal strength (BERS)	26.833* (7.600))		
intrapersonal strength (BERS)	20.667* (8.454)		
school functioning (BERS)	9.167 (5.193)		
education (SAI)	12.167 (4.792)		
leisure/recreation (SAI)	27.000 (5.329)		
attitudes/orientation (SAI)	3.167 (1.472)		
personality/ behaviour characteristics (SAI)	24.333* (11.605)		
communication (ABAS-II)		45.833 (15.355)	
community use (ABAS-II)		21.500* (16.598)	
functional academics (ABAS-II)		32.000* (13.023)	
home living (ABAS-II)		42.500 (12.373)	
health and safety (ABAS-II)		42.667 (12.691)	
leisure (ABAS-II)		36.833* (11.250)	
self-care (ABAS-II)		53.833* (11.873)	
self-direction (ABAS-II)		36.333* (16.501)	
social (ABAS-II)		44.833* (13.228)	
activities (CBCL)			9.750* (2.208)
school (CBCL)			2.083* (.665)
total competence (CBCL)			16.917 (3.153)
thought problems (CBCL)			5.667* (5.538)
attention problems (CBCL)			8.667* (4.590)
attention deficit/hyperactivity problems (CBCL)			5.833* (3.430)

[3] The asterisks indicate means which were not significantly different from at least one other group.

Table 9

Profile of Strengths, Adaptive Functioning, and Behavioural Difficulties for Control Group

	Variables		
	Strength	**Adaptive Functioning**	**Behavioural Difficulty**
group mean (and standard deviations) for significant differences on subscales measuring variables			
interpersonal strength (BERS)	33.375 (3.159)		
intrapersonal strength (BERS)	27.000 (3.117)		
school functioning (BERS)	23.000 (2.878)		
education (SAI)	25.500 (3.117)		
leisure/recreation (SAI)	35.625 (2.925)		
attitudes/orientation (SAI)	10.625 (1.923)		
personality/ behaviour characteristics (SAI)	33.000 (5.451)		
communication (ABAS-II)		64.875 (7.680)	
community use (ABAS-II)		50.875 (10.162)	
functional academics (ABAS-II)		61.625 (6.046)	
home living (ABAS-II)		53.750 (7.924)	
health and safety (ABAS-II)		60.125 (5.139)	
leisure (ABAS-II)		56.250 (7.517)	
self-care (ABAS-II)		67.875 (4.486)	
self-direction (ABAS-II)		62.875 (9.280)	
social (ABAS-II)		61.500 (8.783)	
activities (CBCL)			11.438 (2.321)
school (CBCL)			5.563 (.417)
total competence (CBCL)			26.250 (4.088)
thought problems (CBCL)			1.375 (1.188)
attention problems (CBCL)			2.500 (2.330)
attention deficit/hyperactivity problems (CBCL)			1.625 (1.506)

The asterisks included in the tables indicate means which were not significantly different from at least one other group. Table 5 indicates that adolescents with low-functioning autism have mean strength scores ranging from 4.600 (on the attitudes/orientation SAI subscale), to 22.800 (on the leisure/recreation SAI subscale). Mean scores for adaptive functioning range from 5.600 (on the community use ABAS-II subscale), to 39.200 (on the self-care ABAS-II subscale). As for behavioural difficulties of this group, high scores indicate greater difficulties, with the exception of the activities, school, and total competence subscales, where high scores indicate fewer difficulties. The low-functioning autism group had CBCL mean scores ranging from 1.400 (on the school subscale), to 14.100 (on the total competence subscale). Their next highest mean score was on the attention problems subscale ($M = 12.000$).

Table 6 indicates that adolescents with high-functioning autism have mean strength scores ranging from 6.000 (on the attitudes/orientation SAI subscale), to 27.800 (on the leisure/recreation SAI subscale). Mean scores for adaptive functioning range from 38.000 (on the community use ABAS-II subscale), to 65.000 (on the self-care ABAS-II subscale). Examination of behavioural difficulties for this group reveals a range from 2.700 (on the school subscale), to 19.500 (on the total competence subscale), with the next highest mean score on the activities subscale ($M = 11.400$).

Table 7 indicates that adolescents with Asperger Syndrome have mean strength scores ranging from 5.667 (on the attitudes/orientation SAI subscale), to 25.333 (on the leisure/recreation SAI subscale). Mean scores for adaptive functioning range from 39.167 (on the community use ABAS-II subscale), to 54.833 (on the self-care ABAS-II subscale). Examination of behavioural difficulties for this group shows a range from 2.917 (on the school subscale), to 18.583 (on the

total competence subscale), with the next highest mean score on the activities subscale ($M = 10.083$).

Table 8 indicates that adolescents with developmental disability have mean strength scores ranging from 3.167 (on the attitudes/orientation SAI subscale), to 27.000 (on the leisure/recreation SAI subscale). Mean scores for adaptive functioning range from 21.500 (on the community use ABAS-II subscale), to 53.833 (on the self-care ABAS-II subscale). Examination of behavioural difficulties for this group reveals a range from 2.083 (on the school subscale), to 16.917 (on the total competence subscale), with the next highest mean score on the activities subscale ($M = 9.750$).

Table 9 indicates that adolescents without diagnoses of autism spectrum disorders or developmental disability, have mean strength scores ranging from 10.625 (on the attitudes/orientation SAI subscale), to 35.625 (on the leisure/recreation SAI subscale). Mean scores for adaptive functioning range from 50.875 (on the community use ABAS-II subscale), to 67.875 (on the self-care ABAS-II subscale). Examination of behavioural difficulties for this group reveals a range from 1.375 (on the thought problems subscale), to 26.250 (on the total competence subscale), with the next highest mean score on the activities subscale ($M = 11.438$).

From these tables, a comparison may be made between each of the diagnostic groups for strengths, adaptive functioning and behavioural difficulties. The following table compares each diagnostic group using these variables.

Table 10

Comparison of Strengths, Adaptive Functioning, and Behavioural Difficulties for each Diagnostic Group[4]

group mean for significant differences on subscales measuring variables	Low-Functioning Autism	High-Functioning Autism	Asperger Syndrome	Developmental Disability	Control Group
Strengths interpersonal strength (BERS)	15.800	24.600*	22.667*	26.833*	33.375
intrapersonal strength (BERS)	15.400	18.200*	18.333*	20.667*	27.000
school functioning (BERS)	7.800	15.600	13.000*	9.167	23.000
education (SAI)	13.000	18.200	18.500	12.167	25.500
leisure/recreation (SAI)	22.800	27.800	25.333	27.000	35.625
attitudes/orientation (SAI)	4.600	6.000	5.667	3.167	10.625
personality/ behaviour characteristics (SAI)	13.400	27.000	23.167*	24.333*	33.000
Adaptive Functioning communication (ABAS-II)	23.200	59.200*	53.000*	45.833	64.875
community use (ABAS-II)	5.600	38.000*	39.167*	21.500*	50.875
functional academics (ABAS-II)	16.000	51.600*	44.167*	32.000*	61.625
home living (ABAS-II)	24.600	53.200	43.333	42.500	53.750
health and safety (ABAS-II)	25.400	55.000*	48.667*	42.667	60.125
leisure (ABAS-II)	26.000	44.800*	41.500	36.833*	56.250
self-care (ABAS-II)	39.200	65.000	54.833*	53.833*	67.875
self-direction (ABAS-II)	23.600	49.600*	40.167*	36.333*	62.875
social (ABAS-II)	27.400	46.000*	41.500*	44.833*	61.500
Behavioural Problems activities (CBCL)	7.200	11.400	10.083*	9.750*	11.438
school (CBCL)	1.400	2.700	2.917	2.083*	5.563
total competence (CBCL)	14.100	19.500	18.583	16.917	26.250
thought problems (CBCL)	8.400	4.200*	8.167	5.667*	1.375
attention problems (CBCL)	12.000	8.600*	9.667	8.667*	2.500
attention deficit/hyperactivity problems (CBCL)	7.800	5.200*	6.333*	5.833*	1.625

[4]The asterisks indicate means which were not significantly different from at least one other group.

Examination of Table 10 reveals the following relationships:

Strengths. For the BERS interpersonal strength subscale, low-functioning autism had the lowest mean score (M = 15.800), followed by Asperger Syndrome (M = 22.667), high-functioning autism (M = 24.600), developmental disability (M = 26.833), and the control group (M = 33.375). On the BERS intrapersonal strength subscale, low-functioning autism yielded the lowest mean score (M = 15.400), followed by high-functioning autism (M = 18.200), Asperger Syndrome (M = 18.333), developmental disability (M = 20.667), and the control group (M = 27.000). On the school functioning subscale of the BERS, low-functioning autism had the lowest mean score (M = 7.800), followed by developmental disability (M = 9.167), Asperger Syndrome (M = 13.000), high-functioning autism (M = 15.600), and the control group (M = 23.000). These findings suggest that individuals with low-functioning autism exhibit the lowest strengths when compared to those with high-functioning autism, Asperger Syndrome, developmental disability, and individuals without these diagnoses. On the SAI education subscale, developmental disability had the lowest mean score (M = 12.167), followed by low-functioning autism (M = 13.000), high-functioning autism (M = 18.200), Asperger Syndrome (M = 18.500), and the control group (M = 25.500). On the SAI leisure/recreation subscale, low-functioning autism yielded the lowest mean score (M = 22.800), followed by Asperger Syndrome (M = 25.333), developmental disability (M = 27.000), high-functioning autism (M = 27.800), and the control group (M = 35.625). On the attitudes/orientation SAI subscale, developmental disability had the lowest mean score (M = 3.167), followed by low-functioning autism (M = 4.600), Asperger Syndrome (M = 5.667), high-functioning autism (M = 6.000), and the control group (M = 10.625). On the personality/behaviour subscale of the SAI, low-functioning

autism had the lowest mean score (M = 13.400), followed by Asperger Syndrome (M = 23.167), developmental disability (M = 24.333), high-functioning autism (M = 27.000), and the control group (M = 33.000). These findings suggest that, with the exception of education strengths, individuals with low-functioning exhibit significantly fewer strengths than those with high-functioning autism, Asperger Syndrome, developmental disability, as well as those without these diagnoses.

Adaptive Functioning. On the ABAS-II communication subscale, low-functioning autism had the lowest mean score (M = 23.200), followed by developmental disability (M = 45.833), Asperger Syndrome (M = 53.000), high-functioning autism (M = 59.200), and the control group (M = 64.875). On the community use subscale, low-functioning autism had the lowest mean score (M = 5.600), followed by developmental disability (M = 21.500), high-functioning autism (M = 38.000), Asperger Syndrome (M = 39.167), and the control group (M = 50.875). On the functional academics subscale, low-functioning autism had the lowest mean score (M = 16.000), followed by developmental disability (M = 32.000), Asperger Syndrome (M = 44.167), high-functioning autism (M = 51.600), and the control group (M = 61.625). On the home living subscale, low-functioning autism had the lowest mean score (M = 24.600), followed by developmental disability (M = 42.500), Asperger Syndrome (M = 43.333), high-functioning autism (M = 53.200), and the control group (M = 53.750). On the health and safety subscale, low-functioning autism had the lowest mean score (M = 25.400), followed by developmental disability (M = 42.667), Asperger Syndrome (M = 48.667), high-functioning autism (M = 55.000), and the control group (M = 60.125). On the leisure subscale, low-functioning autism had the lowest mean score (M = 26.000), followed by developmental disability

(M = 36.833), Asperger Syndrome (M = 41.500), high-functioning autism (M = 44.800), and the control group (M = 56.250). On the self-care subscale, low-functioning autism had the lowest mean score (M = 39.200), followed by developmental disability (M = 53.833), Asperger Syndrome (M = 54.833), high-functioning autism (M = 65.000), and the control group (M = 67.875). On the self-direction subscale, low-functioning autism had the lowest mean score (M= 23.600), followed by developmental disability (M = 36.333), Asperger Syndrome (M = 40.167), high-functioning autism (M = 49.600), and the control group (M = 62.875). On the social subscale, low-functioning autism had the lowest mean score (M = 27.400), followed by Asperger Syndrome (M = 41.500), developmental disability (M = 44.833), high-functioning autism (M = 46.000), and the control group (M = 61.500). These findings suggest that individuals with low-functioning autism and developmental disability exhibit similar adaptive profiles, as do those with high-functioning autism and Asperger Syndrome. Furthermore, individuals without these diagnoses exhibit significantly greater adaptive skills than those with these diagnoses.

Behavioural Difficulties. On the CBCL activities subscale, low-functioning autism had the lowest mean score (M = 7.200), followed by developmental disability (M = 9.750), Asperger Syndrome (M = 10.083), high-functioning autism (M = 11.400), and the control group (M = 11.438). On the school subscale, low-functioning autism had the lowest mean score (M = 1.400), followed by developmental disability (M = 2.083), high-functioning autism (M = 2.700), Asperger Syndrome (M = 2.917), and the control group (M = 5.563). On the total competence subscale, low-functioning autism had the lowest mean score (M = 14.100), followed by developmental disability (M = 16.917), Asperger Syndrome (M = 18.583), high-functioning autism (M = 19.500), and the control group (M = 26.250). These findings suggest that individuals

with low-functioning autism and developmental disability exhibit similar behavioural problem profiles, as do those with high-functioning autism and Asperger Syndrome. Furthermore, individuals without these diagnoses exhibit significantly fewer behavioural problems than those with these diagnoses. On the thought problems subscale, the control group had the lowest mean score ($M = 1.375$), followed by high-functioning autism ($M = 4.200$), developmental disability ($M = 5.667$), Asperger Syndrome ($M = 8.167$), and low-functioning autism ($M = 8.400$). On the attention problems subscale, the control group had the lowest mean score ($M = 2.500$), followed by high-functioning autism ($M = 8.600$), developmental disability ($M = 8.667$), Asperger Syndrome ($M = 9.667$), and low-functioning autism ($M = 12.000$). On the attention deficit/hyperactivity problems subscale, the control group had the lowest mean score ($M = 1.625$), followed by high-functioning autism ($M = 5.200$), developmental disability ($M = 5.833$), Asperger Syndrome ($M = 6.333$), and low-functioning autism ($M = 7.800$). These findings suggest that individuals with low-functioning autism exhibit the greatest amount of thought problems, attention problems, and attention deficit/hyperactivity problems when compared to those with high-functioning autism, Asperger Syndrome, developmental disability, as well as those without these diagnoses. Furthermore, individuals without diagnoses of autism spectrum disorders or developmental disability exhibit the fewest problems in these areas when compared to these diagnostic groups.

Hypothesis Five

This research also attempted to develop further psychometric properties of the Strength Assessment Inventory (SAI) with the populations of adolescents under investigation.

Analyses revealed several significant correlations between the subscales of the Behavioral and

Emotional Rating Scale (BERS) and those of the Strength Assessment Inventory (SAI). These correlations are presented in the following table:

Table 11

Correlations Between the Behavioral and Emotional Rating Scale and The Strength Assessment Inventory

		interpersonal strength (BERS)	family involvement (BERS)	intrapersonal strength (BERS)	school functioning (BERS)	affective strength (BERS)
personal and physical care (SAI)	Pearson Correlation	.530**	.359	.443*	.483**	.385*
	Sig. (2-tailed)	.003	.051	.014	.007	.036
	N	30	30	30	30	30
family circumstances/ parenting (SAI)	Pearson Correlation	.659**	.702**	.695**	.536**	.417*
	Sig. (2-tailed)	.000	.000	.000	.002	.022
	N	30	30	30	30	30
education (SAI)	Pearson Correlation	.540**	.577**	.649**	.872**	.026
	Sig. (2-tailed)	.002	.001	.000	.000	.891
	N	30	30	30	30	30
peer relations (SAI)	Pearson Correlation	.519**	.681**	.709**	.517**	.245
	Sig. (2-tailed)	.003	.000	.000	.003	.193
	N	30	30	30	30	30
leisure/ recreation (SAI)	Pearson Correlation	.680**	.494**	.602**	.706**	.257
	Sig. (2-tailed)	.000	.006	.000	.000	.170
	N	30	30	30	30	30
attitudes/ orientation (SAI)	Pearson Correlation	.468**	.499**	.491**	.639**	.162
	Sig. (2-tailed)	.009	.005	.006	.000	.393
	N	30	30	30	30	30
personality/ behaviour characteristics (SAI)	Pearson Correlation	.771**	.716**	.801**	.754**	.291
	Sig. (2-tailed)	.000	.000	.000	.000	.119
	N	30	30	30	30	30

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

Examination of Table 11 reveals that the BERS interpersonal strength subscale was significantly correlated with all the SAI subscales at the .01 level of significance. Similarly, with the exception of the personal and physical care subscale of the SAI, the family involvement subscale of the BERS was significantly correlated with all SAI subscales at the .01 level of significance. The intrapersonal strength subscale of the BERS was significantly correlated with all SAI subscales at the .01 significance level, with the exception of the SAI personal and

physical care subscale, which was correlated with the intrapersonal strength subscale at the .05 significance level. The school functioning subscale of the BERS was significantly correlated with all the SAI subscales at the .01 level of significance. However, the BERS affective strength subscale was significantly correlated with only the SAI's personal and physical care and family circumstances/parenting subscales at the .05 level of significance. A reliability analysis was also conducted on the SAI, and revealed a Cronbach Alpha of .867 for the seven subscales of this measure. These findings indicate a high correspondence between the variables measured by the BERS and SAI measure, thus attesting to the SAI's psychometric soundness.

Discussion

The present study sought to establish the strengths, adaptive functioning, and behavioural profile of adolescents diagnosed with low-functioning autism, high-functioning autism, Asperger Syndrome, and developmental disability. Furthermore, in keeping with Epstein and Sharma's three hypotheses, the present study sought to understand the adolescent's unique strengths of these different clinical populations. Specifically, the present study sought to determine:

(1) Whether unique strengths may be observed within different diagnostic categories. In essence, whether an adolescent with low-functioning autism would have different strengths than one with Asperger Syndrome;

(2) Whether primary caregiver awareness of their adolescent's strengths is associated with better adaptive functioning (e.g., within the school environment), and fewer behavioural difficulties. In essence, whether a differential relationship exists between strengths, adaptive skills, and behavioural problems within the groups under investigation; and

(3) Whether a relationship exists between primary caregiver ratings of engagement in positive activities by their adolescent (as rated on the SAI), and the adolescent's strengths (as measured by the BERS and SAI). In essence, whether the SAI represents an effective measurement tool of strengths.

Strength Profiles

Results indicated support for each of these questions. In regards to the strength profiles of each diagnostic group, a unique pattern emerged for each:

Low-Functioning Autism Group. The SAI subscale mean of leisure/recreation was highest for this diagnostic group, followed by interpersonal strength, intrapersonal strength,

personality/behaviour characteristics, education, school functioning, and attitudes/orientation.

High-Functioning Autism Group. The subscale mean of leisure/recreation was highest for this diagnostic group, followed by personality/behaviour characteristics, interpersonal strength, intrapersonal strength, education, school functioning, and attitudes/orientation.

Asperger Syndrome Group. The subscale mean of leisure/recreation was highest for this diagnostic group, followed by personality/behaviour characteristics, interpersonal strength, education, intrapersonal strength, school functioning, and attitudes/orientation.

Developmental Disability Group. The subscale mean of leisure recreation was highest for this diagnostic group, followed by interpersonal strength, personality/behaviour characteristics, intrapersonal strength, education, school functioning, and attitudes/orientation.

Control Group. The subscale mean of leisure recreation was highest for this diagnostic group, followed by interpersonal strength, personality/behaviour characteristics, intrapersonal strength, education, school functioning, and attitudes/orientation.

Therefore, despite having different means, all of the individual groups highest strengths were in leisure/recreation, as measured by the SAI. The dispersion of subsequent strengths in order, from highest to fewest, according to group was as follows:

(2) interpersonal strength (BERS): for low-functioning autism, developmental disability, and the control group;

personality characteristics (SAI): for high-functioning autism and Asperger Syndrome;

(3) interpersonal strength (BERS): for high-functioning autism and Asperger Syndrome;

intrapersonal strength (BERS); for low-functioning autism;

personality/behaviour characteristics (SAI): for developmental disability and the control group;

(4) intrapersonal strength (BERS): for high-functioning autism, developmental disability and the control group;

education (SAI): for high-functioning autism and Asperger Syndrome;

personality/behaviour characteristics (SAI): for low-functioning autism;

(5) intrapersonal strength (BERS): for Asperger Syndrome;

school functioning (BERS): for high-functioning autism;

education (SAI): for low-functioning autism, developmental disability, and the control group;

(6) school functioning (BERS): for low-functioning autism, Asperger Syndrome, developmental disability, and the control group; and

(7) attitudes/orientation (SAI): for all groups.

Thus, one can see that for all groups, individuals seem to have the greatest strengths in leisure/recreation activities, and the least amount in those involving attitudes/orientation, with more personality-based activities falling somewhere between the two. Furthermore, with the exception of leisure/recreation and attitudes/orientation, all groups differed in their allocation of strengths, thereby attesting to a unique strength profile for each group. In other words, it appears that adolescents with low-functioning autism have a different strength profile than those with high-functioning autism, or Asperger Syndrome, despite their being classed under the same category of autism spectrum disorders. Adolescents in these groups also differed from those with developmental disability, and those without any autism spectrum disorder of developmental disability diagnoses, thereby attesting to differences in strength between these groups.

In order to address the second purpose of the study, that is, to determine whether a differential relationship exists among strengths, adaptive behaviour, and behavioural difficulties, a

comparison of the mean scores for each group on the remaining two measures (ABAS-II and CBCL) will be made.

Adaptive Functioning Profile

Low-Functioning Autism Group. The ABAS-II subscale mean of self-care was highest for this diagnostic group, followed by social, leisure, health and safety, home living, self-direction, communication, functional academics, and community use.

High-Functioning Autism Group. The subscale mean of self-care was highest for this diagnostic group, followed by communication, health and safety, home living, functional academics, self-direction, social, leisure, and community use.

Asperger Syndrome Group. The subscale mean of self-care was highest for this diagnostic group, followed by communication, health and safety, functional academics, home living, leisure and social had the same mean score, and community use.

Developmental Disability Group. The subscale mean of self-care was highest for this diagnostic group, followed by communication, social, health and safety, home living, leisure, self-direction, functional academics, and community use.

Control Group. The subscale mean of self-care was highest for this diagnostic group, followed by communication, self-direction, functional academics, social, health and safety, leisure, home living, and community use.

Behavioural Difficulties Profile

Low-Functioning Autism Group. The CBCL subscale mean of total competence was highest for this diagnostic group, followed by attention problems, thought problems, attention deficit/hyperactivity problems, activities, and school.

High-Functioning Autism Group. The subscale mean of total competence was highest for this diagnostic group, followed by activities, attention problems, attention deficit/hyperactivity problems, thought problems, and school.

Asperger Syndrome Group. The subscale mean of total competence was highest for this diagnostic group, followed by activities, attention problems, thought problems, attention deficit/hyperactivity problems, and school.

Developmental Disability Group. The subscale mean of total competence was highest for this diagnostic group, followed by activities, attention problems, attention deficit/hyperactivity problems, thought problems, and school.

Control Group. The subscale mean of total competence was highest for this diagnostic group, followed by activities, school, attention problems, attention deficit/hyperactivity problems, and thought problems (please see Table 10 for group means for strength, adaptive functioning and behavioural difficulties).

Therefore, despite having different means, all of the individual groups highest adaptive functioning abilities were in self-care, as measured by the ABAS-II. The dispersion of subsequent strengths in order, from highest to fewest, according to group was as follows:

(2) communication: for high-functioning autism, Asperger Syndrome, developmental disability, and the control group;

social: for low-functioning autism;

(3) health and safety: for high-functioning autism and Asperger Syndrome;

leisure: for low-functioning autism;

self-direction: for the control group;

social: for developmental disability;

(4) functional academics: for Asperger Syndrome and the control group;

home living: for high-functioning autism;

health and safety: for low-functioning autism and developmental disability;

(5) functional academics: for high-functioning autism;

home living: for low-functioning autism, Asperger Syndrome, and developmental disability;

social: for the control group;

(6) health and safety: for the control group;

leisure: for Asperger Syndrome and developmental disability;

self-direction: for low-functioning autism and high-functioning autism;

social: for Asperger Syndrome;

(7) communication: for low-functioning autism;

leisure: for the control group;

self-direction: for Asperger Syndrome and developmental disability;

social: for high-functioning autism;

(8) community use: for Asperger Syndrome;

functional academics: for low-functioning autism and developmental disability;

home living: for the control group;

leisure: for high-functioning autism;

(9) community use: for low-functioning autism, high-functioning autism, developmental disability, and the control group. (Asperger Syndrome had the same mean score for both leisure and social, and therefore did not have a ninth ranking, although it's lowest adaptive score was

also for community use).

Thus, one can see that for all groups, individuals seem to have the greatest adaptive skills in self-care activities, and the least amount in those involving community use, with more socially-based activities falling somewhere between the two. Furthermore, with the exception of self-care and community use, all groups differed in their allocation of adaptive skills, thereby attesting to a unique adaptive functioning profile for each group. In other words, it appears that adolescents with low-functioning autism have a different adaptive skill profile than those with high-functioning autism, or Asperger Syndrome, despite their being classed under the same category of autism spectrum disorders. Adolescents in these groups also differed from those with developmental disability, and those without any autism spectrum disorder of developmental disability diagnoses, thereby attesting to differences in adaptive functioning between these groups. Indeed, these results support the finding by Liss et al. (2001) that children with autism were more impaired in socialization and daily living domains than IQ-matched children without autism. However, the finding that children with high-functioning autism were more impaired in these areas than those with low-functioning autism was not confirmed in the present study, as adolescents with low-functioning autism exhibited more impairment in these areas than those with high-functioning autism. Furthermore, McLaughlin-Cheng's (1998) finding that individuals with Asperger Syndrome outperform their high-functioning autism counterparts on measures of cognition and adaptive behaviour was not fully supported in the present investigation, as the Asperger Syndrome group outperformed the high-functioning autism group only on the ABAS-II community use subscale ($M = 39.167$ vs. $M = 38.000$). As for comparisons with the developmental disability group, Carpentieri and Morgan's (1996) finding that individuals with

autism were significantly more impaired in verbal reasoning, socialization, and communication skills than those with developmental disability was only partially supported in the present study. Specifically, adolescents with low-functioning autism were significantly more impaired than those with developmental disability on the communication subscale of the ABAS-II ($M = 23.200$ vs. $M = 45.833$), with high-functioning autism and Asperger Syndrome having significantly higher mean scores than developmental disability on all other subscales of this measure. Gillham et al. (2001) conclusion, however, that deficits within adaptive behaviour in socialization and daily living skills could serve as a differentiating factor between children with autism and those with developmental disability was supported in the present study, with the lower mean scores for low-functioning autism when compared to developmental disability, and the higher mean scores for high-functioning autism and Asperger Syndrome when compared to developmental disability.

With regard to behavioural difficulties, all of the individual groups highest difficulties were in school, with the exception of the control group, whose greatest area of difficulty was in attention problems, as measured by the CBCL. The dispersion of subsequent behavioural difficulties in order, from highest to fewest, (using the subscales for which higher scores indicate greater difficulties) according to group was as follows:

(2) attention problems: for high-functioning autism, Asperger Syndrome, low-functioning autism, and developmental disability;

attention deficit/hyperactivity problems: for the control group;

(3) thought problems: for low-functioning autism, Asperger Syndrome, and the control group;

attention deficit/hyperactivity problems: for high-functioning autism, and developmental disability;

(4) thought problems: for high functioning autism and developmental disability; attention deficit/hyperactivity problems: for low-functioning autism and Asperger Syndrome.

Dispersion of group mean scores for the other subscales (where higher scores indicate fewer behavioural difficulties) was as follows: all groups were highest on total competence, followed by activities, and school.

Thus, one can see that for all groups except the control, individuals seem to have the most behavioural difficulties in school-related activities, and the least amount in those involving total competence, with attention and thought problems falling somewhere between the two. Furthermore, with the exception of school and total competence, all groups differed in their allocation of behavioural difficulties, thereby attesting to a unique behavioural profile for each group. In other words, it appears that adolescents with low-functioning autism have a different behavioural difficulty profile than those with high-functioning autism, or Asperger Syndrome, despite their being classed under the same category of autism spectrum disorders. Adolescents in these groups also differed from those with developmental disability, and those without any autism spectrum disorder or developmental disability diagnoses, thereby attesting to differences in behavioural difficulties between these groups.

In addition to establishing the presence of unique strength, adaptive skills, and behavioural difficulty profiles for each of the groups, it also appears that a differential relationship exists between these variables. For instance, examination of Table 10 reveals that adolescents with low-functioning autism and developmental disability exhibit a similar pattern of strengths, with means ranging from 3.167 (for developmental disability) and 4.600 (for low-functioning autism) to 27.000 (for developmental disability) and 22.800 (for low-functioning autism). Conversely,

adolescents with high-functioning autism and Asperger Syndrome display similar mean scores, ranging from 5.667 (for Asperger Syndrome) and 6.000 (for high-functioning autism), to 25.333 (for Asperger Syndrome) and 27.800 (for high-functioning autism). Not surprisingly, the control group showed the highest range of mean scores, from 10.625 to 35.625. These findings suggest that low-functioning autism and developmental disability exhibit a similar pattern of strengths, as do high-functioning autism and Asperger Syndrome. This confirms the hypothesis set out at the beginning of the investigation, attesting to similar profiles for these groups, and is likely derivative of the similar degree of intellectual functioning in low-functioning autism and developmental disability, and high-functioning autism and Asperger Syndrome.

A similar profile was also found for adaptive functioning, with low-functioning autism and developmental disability having similar mean scores, ranging from 5.600 (for low-functioning autism) and 21.500 (for developmental disability), to 39.200 (for low-functioning autism) and 53.833 (for developmental disability). Again, high-functioning autism and Asperger Syndrome had similar mean score ranges, from 38.000 (for high-functioning autism) and 39.167 (for Asperger Syndrome), to 65.000 (for high-functioning autism) and 54.833 (for Asperger Syndrome). The control group also again, had a higher range of mean scores, from 50.875 to 67.875. Thus, like strengths, it appears that individuals with low-functioning autism and developmental disability have similar adaptive profiles, while those with high-functioning autism and Asperger Syndrome display similar profiles in this regard.

In regards to behavioural difficulties, similar mean score ranges were again obtained for low-functioning autism and developmental disability, from 1.400 (for low-functioning autism) and 2.083 (for developmental disability), to 14.100 (for low-functioning autism) and 16.917 (for

developmental disability). Similar mean score ranges were also obtained for high-functioning autism and Asperger Syndrome, from 2.700 (for high-functioning autism) and 2.917 (for Asperger Syndrome), to 19.500 (for high-functioning autism) and 18.583 (for Asperger Syndrome). The control group had mean scores ranging from 1.375 to 26.250. Therefore, these findings imply that individuals with low-functioning autism and developmental disability display similar profiles in terms of behavioural difficulties, while those with high-functioning autism and Asperger Syndrome exhibit similar profiles in this regard.

From these findings, one can also see that individuals with fewer strengths (low-functioning autism and developmental disability), display greater behavioural difficulties and fewer adaptive functioning abilities. While those with greater strengths (high-functioning autism, Asperger Syndrome, and the control group), exhibit fewer behavioural difficulties and greater adaptive functioning abilities. This finding is similar to those found by Gomes (2002) and Welsh (2003), who found that higher strengths, as measured by the SAI were associated with fewer behavioural difficulties in young offender and child clinical populations. Furthermore, this finding supports that of Everett (2001), who showed that child and family strengths buffered the effects of child adaptive functioning on stress related to parenting. The results of Walrath et al. (2004), who found a moderate relationship between child strengths and functional impairment, such that "...children with even the most severe functional impairment were rated as having average or near average strengths" (p.1) were also supported.

The hypothesis derived from Epstein and Sharma's (1998) assumptions, that adolescents in each group would exhibit a unique strength profile was also supported, as each diagnostic group had different rankings of mean scores for each strength subscale. However, although a different

and unique strength profile existed for each group, some groups were more similar in their profile to certain groups. Specifically, adolescents with low-functioning autism and developmental disability exhibited similar strength profiles, as did those with high-functioning autism and Asperger Syndrome. However, the autism spectrum disorder groups and developmental disability all differed from the control group, thus supporting the hypothesis that adolescents with these types of disorders would show a different pattern of strengths from normal adolescents. This finding also supported the hypothesis that strength and adaptive measures assessment would differentiate lower-functioning autism from both its higher-functioning counterparts (high-functioning autism and Asperger Syndrome) and developmental disability, by delineating specific areas of strength and adaptive functioning within these groups. Additionally, the hypothesis, that adolescents with low-functioning autism would exhibit similar strengths to adolescents with developmental disability, and that those with high-functioning autism would exhibit similar strengths to those with Asperger Syndrome, was also supported. The hypothesis that strength would be differentially related to adaptive functioning and behavioural problems within each diagnostic group was also supported by the finding that greater strengths were associated with fewer behavioural difficulties and greater adaptive functioning skills, with the reverse also being true.

The hypothesis based on Epstein and Sharma's (1998) third assumption was addressed through correlational analysis on the BERS and SAI. This analysis, as seen in Table 11, shows several significant positive correlations between the subscales on each of these strength measures. Because of the established psychometric properties of the BERS, primary caregiver ratings on the SAI would indicate a sound assessment of the adolescent's strengths. Therefore,

this suggests that a high correlation exists between primary caregiver ratings of engagement in positive activities by their adolescent (as measured by the SAI), and the adolescent's strengths (as confirmed by the BERS).

Limitations of the Study

Despite the significant findings uncovered in this study, several factors limit the applicability of these results. Key among these limitations, is the small and unrepresentative sample size employed. Because the study was conducted in a rural area of Northwestern Ontario, recruitment of participants was difficult. This matter was complicated by the notion that several primary caregivers of adolescents in the diagnostic groups may have had learning disabilities, and would therefore be reluctant to complete the questionnaires, even if assistance was provided by the primary researcher or supervisor of the study. Furthermore, the rural northern area made it difficult, particularly in the winter months, when the majority of recruitment occurred, for prospective participants to attend the meetings in town where the majority of recruitment took place for the autism spectrum disorder groups. Many primary caregivers were also understandably quite busy, and therefore, completing any activity which was not immediately necessary was often not possible. Indeed, the primary researcher conducted several follow-up calls for a period of two-months, as several questionnaires were not returned, and admittedly forgotten about by the primary caregivers. The demographics of the sample also make comparisons with other samples difficult, as the majority of participants were of Caucasian descent and all were from Northwestern Ontario. However, efforts were taken to ensure an adequate sampling of sex and age to ensure a representative sample in this respect. Despite these efforts, the large difference in age between the low-functioning autism group and the high-

functioning autism group may have distorted results due to the rapid developmental changes which profoundly effect adaptive functioning and behavioural difficulties. Although the small sample size prevented statistical comparison between groups on each of the measures used, the post-hoc tests on the one-way ANOVA proved quite useful in yielding pertinent results.

Another limitation of this study involved the lack of longitudinal design. It would have been useful to track the study participants through the years as they enter young adulthood to determine whether any changes in strength, adaptive skills, and behavioural difficulties occurred. Unfortunately, the time-frame of the study did not permit such comparisons to be made.

Additionally, it would have been useful to examine different diagnostic groups, in addition to those examined, in order to compare autism spectrum disorders to other conditions with which they frequently overlap (e.g., attention deficit/hyperactivity disorder). Analyses of other variables such as age, sex, and biological measures would also have proven useful.

Areas of Future Research

With these limitations in mind, several areas of research warrant investigation. As mentioned, the small sample size prevented several analyses from being conducted. Therefore, subsequent studies should use a larger sample (ideally, with 50 participants for each measure used), thus allowing for further statistical examination. Further studies should also seek age equivalence between groups. Additionally, because of the small sample size, qualitative analyses would have been useful in this investigation. However, these analyses were not possible due to ethical approval being granted on the basis that no telephone or in-person interviews using any measures other than the four used in the study, would be conducted. Thus, future studies may want to undertake a qualitative analysis as well. Furthermore, longitudinal investigations would allow for

outcome information to be obtained, and should incorporate participants from areas outside of Northwestern Ontario, to include urban communities as well.

Despite the limitations of this study, it was nonetheless quite useful in uncovering several interesting results, and supporting all hypotheses under investigation. In addition to suggesting that different and unique strength, adaptive functioning, and behavioural difficulty profiles exist for each group under examination, this study supported the claim that low-functioning autism and developmental disability are similar in these profiles, while those with high-functioning autism and Asperger Syndrome are similar in this regard. Furthermore, it was shown that strength may have a differential relationship with adaptive functioning and behavioral difficulties in each group. The psychometric properties of the SAI were also strengthened. Such important preliminary findings should form the foundation for subsequent research to build upon in examining these variables with different diagnostic populations. In doing so, perhaps the greatest value of this study lies in its intent to encourage further research in the crucial, but often neglected area of strength. Indeed, with increased government funding for autism spectrum disorders, there is no better time than the present to undertake such important research.

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Appendix A. Behavioral and Emotional Rating Scale (BERS)

BERS

Behavioral and Emotional Rating Scale

A Strength-Based Approach to Assessment

SUMMARY/RESPONSE FORM

Section I. Identifying Information

Name _____

Parent/Guardian _____

School _____ Grade _____

Rater's Name _____

Relationship to Child _____

Examiner's Name and Title _____

	Year	Month
Date of Rating	_____	_____
Date of Birth	_____	_____
Age	_____	_____

Section II. Results of the BERS

	Raw Score	%ile	Std. Score
I. Interpersonal Strength (IS)	_____	_____	☐
II. Family Involvement (FI)	_____	_____	☐
III. Intrapersonal Strength (IaS)	_____	_____	☐
IV. School Functioning (SF)	_____	_____	☐
V. Affective Strength (AS)	_____	_____	☐
Sum of Standard Scores			_____
			Quotient
BERS Strength Quotient		_____	☐

Section III. Other Pertinent Information

Test Name	Date of Testing	Standard Score	Equivalent Quotient
1.			
2.			
3.			
4.			
5.			

Who referred the child? _____

What was the reason for referral? _____

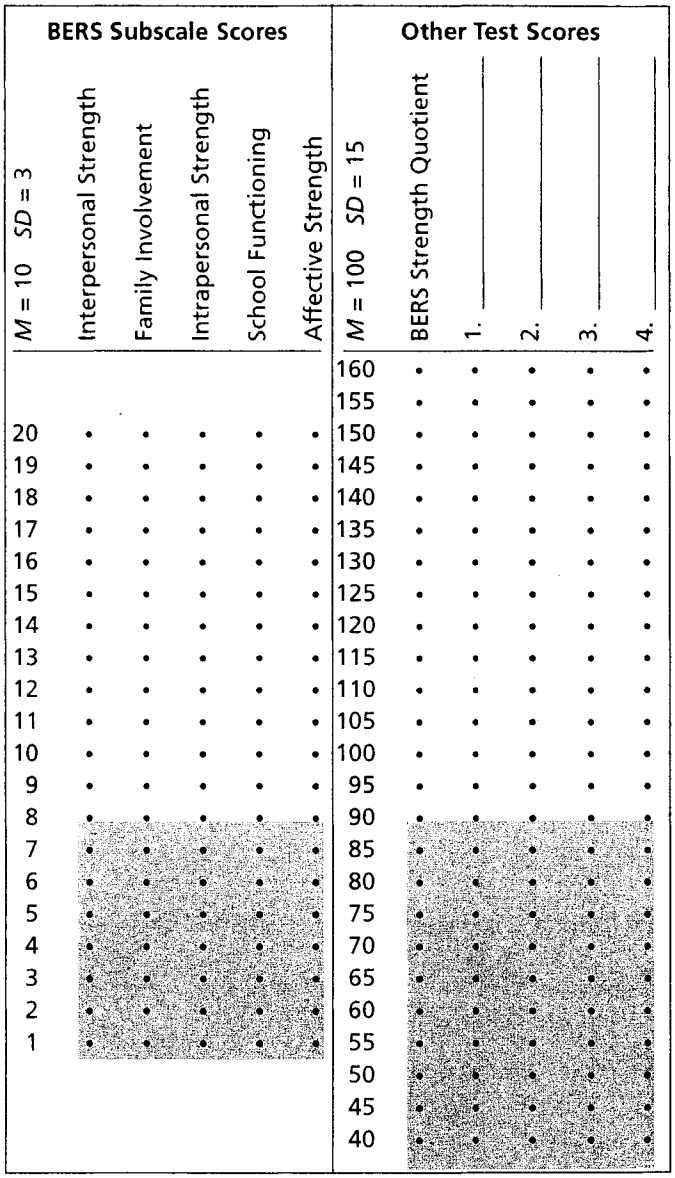
Parental permission obtained on _____ (date)

BERS results included in staffing/planning conference?

☐ Yes ☐ No

PLEASE DO NOT FILL OUT THIS SECTION.
ECTION III. OTHER PERTINENT INFORMATION)

Section IV. Profile of Standard Scores



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Additional copies of this form (#8462) may be purchased from PRO-ED, 8700 Shoal Creek Boulevard, Austin, TX 78757-6897, 512/451-3246, Fax 512/451-8542

Section V. Response Form

Directions: The *Behavioral and Emotional Rating Scale* (BERS) contains a series of statements that are used to rate a child's behaviors and emotions in a positive way. Read each statement and circle the number that corresponds to the rating that best describes the child's status over the past 3 months. If the statement is *very much like* the child, circle the 3; if the statement is *like* the child, circle the 2; if the statement is *not much like* the child, circle the 1; if the statement is *not at all like* the child, circle the 0. Rate each statement to the best of your knowledge of the child.

Statement	very much like the child	like the child	not much like the child	not at all like the child	IS	FI	IaS	SF	AS
1. Demonstrates a sense of belonging to family	3	2	1	0					
2. Trusts a significant person with his or her life	3	2	1	0					
3. Accepts a hug	3	2	1	0					
4. Participates in community activities	3	2	1	0					
5. Is self-confident	3	2	1	0					
6. Acknowledges painful feelings	3	2	1	0					
7. Maintains positive family relationships	3	2	1	0					
8. Demonstrates a sense of humor	3	2	1	0					
9. Asks for help	3	2	1	0					
10. Uses anger management skills	3	2	1	0					
11. Communicates with parents about behavior at home	3	2	1	0					
12. Expresses remorse for behavior that hurts or upsets others	3	2	1	0					
13. Shows concern for the feelings of others	3	2	1	0					
14. Completes a task on first request	3	2	1	0					
15. Interacts positively with parents	3	2	1	0					
16. Reacts to disappointments in a calm manner	3	2	1	0					
17. Considers consequences of own behavior	3	2	1	0					
18. Accepts criticism	3	2	1	0					
19. Participates in church activities	3	2	1	0					
20. Demonstrates age-appropriate hygiene skills	3	2	1	0					
21. Requests support from peers and friends	3	2	1	0					
22. Enjoys a hobby	3	2	1	0					
23. Discusses problems with others	3	2	1	0					
24. Completes school tasks on time	3	2	1	0					
			Column subtotals						

Statement	very much like the child	like the child	not much like the child	not at all like the child	IS	FI	IaS	SF	AS
25. Accepts the closeness and intimacy of others	3	2	1	0					
26. Identifies own feelings	3	2	1	0					
27. Identifies personal strengths	3	2	1	0					
28. Accepts responsibility for own actions	3	2	1	0					
29. Interacts positively with siblings	3	2	1	0					
30. Loses a game gracefully	3	2	1	0					
31. Completes homework regularly	3	2	1	0					
32. Is popular with peers	3	2	1	0					
33. Listens to others	3	2	1	0					
34. Expresses affection for others	3	2	1	0					
35. Admits mistakes	3	2	1	0					
36. Participates in family activities	3	2	1	0					
37. Accepts "no" for an answer	3	2	1	0					
38. Smiles often	3	2	1	0					
39. Pays attention in class	3	2	1	0					
40. Computes math problems at or above grade level	3	2	1	0					
41. Reads at or above grade level	3	2	1	0					
42. Is enthusiastic about life	3	2	1	0					
43. Respects the rights of others	3	2	1	0					
44. Shares with others	3	2	1	0					
45. Complies with rules at home	3	2	1	0					
46. Apologizes to others when wrong	3	2	1	0					
47. Studies for tests	3	2	1	0					
48. Talks about the positive aspects of life	3	2	1	0					
49. Is kind toward others	3	2	1	0					
50. Uses appropriate language	3	2	1	0					
51. Attends school regularly	3	2	1	0					
52. Uses note-taking and listening skills in school	3	2	1	0					
Column subtotals									
Previous page column subtotals									
Total Raw Score									

Section VI. Key Questions

1. What are the child's favorite hobbies or activities? What does the child like to do? _____

2. What is the child's favorite sport(s)? _____

3. In what school subject(s) does the child do best? _____

4. Who is this child's best friend(s)? _____

5. Who is this child's favorite teacher(s)? _____

6. What job(s) or responsibilities has this child held in the community or in the home? _____

7. At a time of need, to whom (e.g., parent, teacher, friend, relative) would this child turn for support? _____

8. Describe the best things about this child. _____

Section VII. Interpretations and Recommendations

PLEASE DO NOT FILL OUT THIS SECTION.
(SECTION VII. INTERPRETATIONS AND RECOMMENDATIONS)

Appendix B. Strength Assessment Inventory (SAI)

STRENGTH ASSESSMENT INVENTORY (SAI)

Strength-Based Assessment

The following are guidelines for strength identification in the Child/Adolescent. These suggestions do not exhaust the possibilities of strengths in significant functioning.

3 = Very much like the child 2 = Like the child 1 = Not much like the child

0 = Not at all like the child

With respect to Personal and Physical Care, does the following exist for your adolescent?

*	Demonstrates healthy nutrition	3	2	1	0
*	Participates in fitness activities	3	2	1	0
*	Has good eating and sleeping habits	3	2	1	0
*	Demonstrates good cleanliness and tidiness	3	2	1	0

With respect to Family Circumstances/Parenting, does the following exist for your adolescent?

*	Demonstrates a sense of belonging to the family	3	2	1	0
*	Trusts a family member with important information	3	2	1	0
*	Interacts positively with some siblings	3	2	1	0
*	Interacts positively with some family members	3	2	1	0
*	Cares/knows that his/her behaviour upsets the family	3	2	1	0
*	Complies with rules at home	3	2	1	0
*	Is particularly close with one member of the family	3	2	1	0
*	Takes responsibility for his/her behaviour within the family	3	2	1	0
*	Is respectful of some family members	3	2	1	0
*	Participates in household family chores	3	2	1	0
*	Others _____	3	2	1	0
*	_____	3	2	1	0
*	_____	3	2	1	0

With respect to Education, does the following exist for your adolescent?

*	Studies for some tests	3	2	1	0
*	Uses note-taking and listening skills in school in some subjects	3	2	1	0
*	Pays attention in class in some subject areas	3	2	1	0
*	Is at or above grade level in reading	3	2	1	0
*	Completes work on time for some subjects	3	2	1	0
*	Has a positive relationship with some school staff	3	2	1	0
*	Is involved in school sports	3	2	1	0
*	Is involved in school activities	3	2	1	0
*	Feels connected to school	3	2	1	0
*	Demonstrates good punctuality and attendance	3	2	1	0
*	Others _____	3	2	1	0
*	_____	3	2	1	0
*	_____	3	2	1	0

With respect to Peer Relations, does the following exist for your adolescent?

*	Actively seeks positive peer relationships	3	2	1	0
*	Experiences affection for these peers	3	2	1	0
*	Is modeling some of these peer's behaviours	3	2	1	0
*	Is accepted by these peers	3	2	1	0
*	Engages in positive group behaviours with these peers	3	2	1	0
*	Is particularly close with one member of the family	3	2	1	0
*	Associates with a positive peer group	3	2	1	0
*	Feels connected to these peers	3	2	1	0
*	Others _____	3	2	1	0
*	_____	3	2	1	0
*	_____	3	2	1	0

With respect to Leisure/Recreation, does the following exist for your adolescent?

*	Enjoys a hobby	3	2	1	0
*	Likes to watch non-violent programming on TV	3	2	1	0
*	Is a fan of a sports team	3	2	1	0
*	Enjoys an educational TV show	3	2	1	0
*	Is good at a particular sport	3	2	1	0
*	Enjoys listening to music that does not espouse violence, sexism, or ethnic inequalities	3	2	1	0
*	Plays a musical instrument	3	2	1	0
*	Likes to read	3	2	1	0
*	Likes to use the computer for educational purposes	3	2	1	0
*	Enjoys arts and crafts	3	2	1	0
*	Enjoys cultural activities, e.g., dance, sweats, etc.	3	2	1	0
*	Enjoys participating in a particular sport	3	2	1	0
*	Enjoys community activities	3	2	1	0
*	Likes babysitting	3	2	1	0
*	Cares for a pet	3	2	1	0
*	Can initiate appropriate activities when bored	3	2	1	0
*	Others _____	3	2	1	0
*	_____	3	2	1	0
*	_____	3	2	1	0

With respect to Attitudes/Orientation, does the following exist for your adolescent?

*	Active member of a community organization that promotes healthy lifestyle, eg., Cadets, Scouts, etc.	3	2	1	0
*	Participates in church or spiritual activities	3	2	1	0
*	Attends/volunteers for some community events	3	2	1	0
*	Helps neighbours when requested	3	2	1	0
*	Feels part of the community	3	2	1	0
*	Others _____	3	2	1	0
*	_____	3	2	1	0
*	_____	3	2	1	0

In addition to the areas of life that are progressing reasonably well for your adolescent, there are also some Personality/Behaviour Characteristics that are representative of strengths for your adolescent.

*	Demonstrates a sense of humour	3	2	1	0
*	Is enthusiastic about life	3	2	1	0
*	Talks about the positive aspects of life	3	2	1	0
*	Uses anger management skills	3	2	1	0
*	Can identify his/her own feelings and their appropriateness	3	2	1	0
*	Can identify his/her personal strengths	3	2	1	0
*	Is appropriately confident	3	2	1	0
*	Can accept disappointment gracefully	3	2	1	0
*	Is willing to work hard to achieve something in the next six months	3	2	1	0
*	Tries to compensate for his/her weaknesses	3	2	1	0
*	Shows appropriate commitment to goals	3	2	1	0
*	Uses appropriate planning skills	3	2	1	0
*	Has a good sense of right from wrong	3	2	1	0
*	Is willing to ask for help when needed	3	2	1	0
*	Others _____	3	2	1	0
*	_____	3	2	1	0
*	_____	3	2	1	0

Appendix C. Child Behavior Checklist (CBCL)-Parent-Report Form

Please print # CHILD BEHAVIOR CHECKLIST FOR AGES 6-18

For office use only
ID #

CHILD'S FULL NAME First Middle Last

CHILD'S GENDER ☐ Boy ☐ Girl

CHILD'S AGE

CHILD'S ETHNIC GROUP OR RACE

TODAY'S DATE Mo._____ Date _____ Yr. _____

CHILD'S BIRTHDATE Mo._____ Date _____ Yr. _____

GRADE IN SCHOOL _____

NOT ATTENDING SCHOOL ☐

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2. ***Be sure to answer all items.***

PARENTS' USUAL TYPE OF WORK, even if not working now. *(Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK _____

MOTHER'S TYPE OF WORK _____

THIS FORM FILLED OUT BY: (print your full name)

_____

Your gender: ☐ Male ☐ Female

Your relation to the child:

☐ Biological Parent ☐ Step Parent ☐ Grandparent
☐ Adoptive Parent ☐ Foster Parent ☐ Other (specify)_____

I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

☐ None

	Compared to others of the same age, about how much time does he/she spend in each?				Compared to others of the same age, how well does he/she do each one?			
	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average	Don't Know
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

II. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, computers, singing, etc. (Do ***not*** include listening to radio or TV.)

☐ None

	Compared to others of the same age, about how much time does he/she spend in each?				Compared to others of the same age, how well does he/she do each one?			
	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average	Don't Know
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

III. Please list any organizations, clubs, teams, or groups your child belongs to.

☐ None

	Compared to others of the same age, how active is he/she in each?			
	Less Active	Average	More Active	Don't Know
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (Include both paid and unpaid jobs and chores.)

☐ None

	Compared to others of the same age, how well does he/she carry them out?			
	Below Average	Average	Above Average	Don't Know
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

Be sure you answered all items. Then see other side.

6-1-01 Edition - 201

V. 1. About how many close friends does your child have? (Do *not* include brothers & sisters)

❑ None ❑ 1 ❑ 2 or 3 ❑ 4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours? (Do *not* include brothers & sisters) ❑ Less than 1 ❑ 1 or 2 ❑ 3 or more

VI. Compared to others of his/her age, how well does your child:

	Worse	Average	Better	
a. Get along with his/her brothers & sisters?	❑	❑	❑	❑ Has no brothers or sisters
b. Get along with other kids?	❑	❑	❑	
c. Behave with his/her parents?	❑	❑	❑	
d. Play and work alone?	❑	❑	❑	

VII. 1. Performance in academic subjects. ❑ Does not attend school because _____

Check a box for each subject that child takes	Failing	Below Average	Average	Above Average
a. Reading, English, or Language Arts	❑	❑	❑	❑
b. History or Social Studies	❑	❑	❑	❑
c. Arithmetic or Math	❑	❑	❑	❑
d. Science	❑	❑	❑	❑
e. _____	❑	❑	❑	❑
f. _____	❑	❑	❑	❑
g. _____	❑	❑	❑	❑

Other academic subjects–for example: computer courses, foreign language, business. Do *not* include gym, shop, driver's ed., or other nonacademic subjects.

2. Does your child receive special education or remedial services or attend a special class or special school?

❑ No ❑ Yes—kind of services, class, or school:

3. Has your child repeated any grades? ❑ No ❑ Yes—grades and reasons:

4. Has your child had any academic or other problems in school? ❑ No ❑ Yes—please describe:

When did these problems start?_____

Have these problems ended? ❑ No ❑ Yes–when?

Does your child have any illness or disability (either physical or mental)? ❑ No ❑ Yes—please describe:

What concerns you most about your child?

Please describe the best things about your child.

Be sure you answered all items.

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of your child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is ***not true*** of your child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

0 1 2 1. Acts too young for his/her age
0 1 2 2. Drinks alcohol without parents' approval (describe):_____
_____
0 1 2 3. Argues a lot
0 1 2 4. Fails to finish things he/she starts
0 1 2 5. There is very little he/she enjoys
0 1 2 6. Bowel movements outside toilet
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
_____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Cruel to animals
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Daydreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys things belonging to his/her family or others
0 1 2 22. Disobedient at home
0 1 2 23. Disobedient at school
0 1 2 24. Doesn't eat well
0 1 2 25. Doesn't get along with other kids
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Breaks rules at home, school, or elsewhere
0 1 2 29. Fears certain animals, situations, or places, other than school (describe): _____
_____
0 1 2 30. Fears going to school
0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears sound or voices that aren't there (describe): _____
_____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Would rather be alone than with others
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, highstrung, or tense
0 1 2 46. Nervous movements or twitching (describe): ____
_____
_____
0 1 2 47. Nightmares
0 1 2 48. Not liked by other kids
0 1 2 49. Constipated, doesn't move bowels
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy or lightheaded
0 1 2 52. Feels too guilty
0 1 2 53. Overeating
0 1 2 54. Overtired without good reason
0 1 2 55. Overweight
56. Physical problems ***without known medical cause:***
0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Problems with eyes (***not*** if corrected by glasses) (describe): _____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____
_____

 Be sure you answered all items. Then see other side.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 57. Physically attacks people
0 1 2 58. Picks nose, skin, or other parts of body (describe): _____
_____
0 1 2 59. Plays with own sex parts in public
0 1 2 60. Plays with own sex parts too much
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older kids
0 1 2 64. Prefers being with younger kids
0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over; compulsions (describe): _____
_____
0 1 2 67. Runs away from home
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe): _____
_____
_____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Sets fires
0 1 2 73. Sexual problems (describe): _____
_____
_____
0 1 2 74. Showing off or clowning
0 1 2 75. Too shy or timid
0 1 2 76. Sleeps less than most kids
0 1 2 77. Sleeps more than most kids during day and/or night (describe): _____
_____
0 1 2 78. Inattentive or easily distracted
0 1 2 79. Speech problem (describe): _____
_____
0 1 2 80. Stares blankly
0 1 2 81. Steals at home
0 1 2 82. Steals outside the home
0 1 2 83. Stores up too many things he/she doesn't need (describe): _____
_____
_____
0 1 2 84. Strange behavior (describe): _____
_____
0 1 2 85. Strange ideas (describe): _____
_____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Talks or walks in sleep (describe): _____
_____
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Thinks about sex too much
0 1 2 97. Threatens people
0 1 2 98. Thumb-sucking
0 1 2 99. Smokes, chews, or sniffs tobacco
0 1 2 100. Trouble sleeping (describe): _____
_____
0 1 2 101. Truancy, skips school
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses drugs for nonmedical purposes (***don't*** include alcohol or tobacco) (describe): _____
_____
_____
0 1 2 106. Vandalism
0 1 2 107. Wets self during the day
0 1 2 108. Wets the bed
0 1 2 109. Whining
0 1 2 110. Wishes to be of opposite sex
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worries
113. Please write in any problems your child has that were not listed above:
0 1 2 _____
0 1 2 _____
0 1 2 _____

Please be sure you answered all items.

Appendix D. Adaptive Behavior Assessment System-Second Edition (ABAS-II)-Parent Form

ABAS® II
Adaptive Behavior Assessment System®
SECOND EDITION

Patti L. Harrison
Thomas Oakland

Parent Form

Ages 5–21

CHILD INFORMATION

Child's Name: _____ Age: _____ Grade: _____

School: _____ City: _____ State: _____

Sex: ☐ Female ☐ Male

	Month	Day	Year
Today's Date			
Date of Birth			

Does the child have any disabling conditions? ☐ Yes ☐ No

If yes, please describe: _____

Race/Ethnicity: ☐ African American ☐ Asian ☐ Native American
☐ Hispanic ☐ White ☐ Other: _____

The child has: ☐ No job ☐ Part-time job ☐ Full-time job

PARENT INFORMATION

Parent's Name: _____ Occupation: _____

Number of siblings the child has at home:

☐ None ☐ 1 ☐ 2 ☐ 3 or more

Your relationship to the child you are rating:

☐ Parent ☐ Guardian ☐ Other: _____

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Directions

The *Adaptive Behavior Assessment System–Second Edition* is designed to measure important behaviors an individual displays at home, school, work, and other settings. The behaviors included on this scale range from those suitable for young children to those suitable for adults. Some items may seem too difficult for younger children while others may seem too easy for older children. Therefore, your child is likely to display some but not all behaviors included on this scale.

Please read and answer ALL items

Rate the child according to how often he or she **correctly** performs a behavior, **without help**, when the behavior needs to be displayed. The rating you choose should reflect the frequency with which the child performs the behavior without help, **when it is needed**. Record your response for each item by circling one of the following:

0 **Is Not Able**

1 **Never** or **Almost Never When Needed**

2 **Sometimes When Needed**

3 **Always** or **Almost Always When Needed**

Then evaluate whether you have observed the behavior or if you are guessing about the frequency of its occurrence. If your rating is based on a guess, put a check (✓) in the box marked **Check If You Guessed**. If your answer is based on observation or direct knowledge, leave this column blank.

The following example shows how to complete the Rating Form:

ABAS-II PARENT (Ages 5–21)

	BEHAVIOR FREQUENCY				
	Is Not Able	Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed
4. Names 20 or more familiar objects.	0	1	2	(3)	☐
6. Uses sentences with a noun and a verb.	(0)	1	2	3	☑

Comments

In the example above, the child being rated **Always** (or Almost Always) names 20 or more familiar objects when needed; **Sometimes** tells parents, friends, or others about his/her favorite activities; and **Is Not Able** to use sentences with a noun and a verb. The ratings of Items 4 and 5 are based on observation or direct knowledge; therefore the **Check If You Guessed** column is left blank. The rater guessed on Item 6, so the **Check If You Guessed** column is marked.

The following table is provided to further assist you in filling out this form.

1 **Never or Almost When Needed**	**has the ability to perform the behavior, but** • never or almost never does it when needed; or • never or almost never does it on his/her own without being reminded.
3 **Always or Almost Always When Needed**	**has the ability to perform the behavior, and** • displays the behavior most or all of the time without being reminded; or • displayed the behavior at a younger age, but has now outgrown it.

Comments	• you do not understand an item.* • you feel it would be helpful to discuss an item with the assessment professional.*

** You may make a brief note of your concerns in the* **Notes** *box on page 10 of this Rating Form.*

Communication

	Is Not Able	BEHAVIOR FREQUENCY: Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
2. Shakes head or says "yes" or "no" in response to a simple question, for example, "Do you want something to drink?"	0	1	2	3	☐	○
4. Names 20 or more familiar objects.	0	1	2	3	☐	○
6. Uses sentences with a noun and a verb.	0	1	2	3	☐	○
8. Looks at others' faces when they are talking.	0	1	2	3	☐	○
10. Answers the telephone appropriately.	0	1	2	3	☐	○
12. Nods or smiles to encourage others when they are talking.	0	1	2	3	☐	○
14. Says irregular plural nouns, for example, *knives* or *mice*.	0	1	2	3	☐	○
16. Takes turns talking during conversations with people—is not too talkative or too quiet.	0	1	2	3	☐	○

continued

Communication *continued*

	Is Not Able	BEHAVIOR FREQUENCY: Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
18. States his/her own telephone number.	0	1	2	3	☐	
20. Talks about realistic future educational or career goals.	0	1	2	3	☐	
22. States home address, including zip code.	0	1	2	3	☐	
24. Uses up-to-date information to discuss current events.	0	1	2	3	☐	
Total / 72					Total Guessed	

Community Use

2. Orders his/her own meals when eating out.	0	1	2	3	☐	
4. Packs his/her own clothing and supplies for overnight trips.	0	1	2	3	☐	
6. Follows another's directions to nearby places.	0	1	2	3	☐	
8. Walks alone to friends' houses in the neighborhood.	0	1	2	3	☐	
10. Finds a specific department in a store or business, for example, customer service department in a bank or laundry supplies in a store.	0	1	2	3	☐	
12. Carries personal identification when traveling to nearby places in the community.	0	1	2	3	☐	
14. Asks other people's advice on where to shop.	0	1	2	3	☐	
16. Asks store clerk for product information before buying an item.	0	1	2	3	☐	
18. Takes other people on trips to nearby places, for example, takes a younger child to a park.	0	1	2	3	☐	
20. Shops for friends and family who may be unable to shop.	0	1	2	3	☐	
22. Calls a repairperson if, for example, the air conditioner or heater is not working.	0	1	2	3	☐	
Total / 69					Total Guessed	

Functional Academics

	Is Not Able	BEHAVIOR FREQUENCY: Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
1. Reads his/her own written name.	0	1	2	3	☐	○
3. States the days of the week in order.	0	1	2	3	☐	○
5. Reads and obeys common signs, for example, *Do Not Enter*, *Exit*, or *Stop*.	0	1	2	3	☐	○
7. Locates important dates on a calendar, for example, birthdays or holidays.	0	1	2	3	☐	○
9. Weighs himself/herself or other objects correctly using a scale.	0	1	2	3	☐	○
11. Measures length and height.	0	1	2	3	☐	○
13. Gives clerk the necessary amount of money when purchasing items.	0	1	2	3	☐	○
15. Reads menus at restaurants.	0	1	2	3	☐	○
17. Finds somebody's telephone number in the phone book.	0	1	2	3	☐	○
19. Checks for correct change after buying an item.	0	1	2	3	☐	○
21. Budgets money to cover expenses for at least one week.	0	1	2	3	☐	○
23. Reads classified ads for purchases and services.	0	1	2	3	☐	○
		Total		/ 69	Total Guessed	

Home Living

2. Wipes up spills at home.	0	1	2	3	☐	○
4. Assists in big clean-up projects at home, for example, spring cleaning or cleaning the garage.	0	1	2	3	☐	○
6. Keeps toys, games, or other belongings neat and clean.	0	1	2	3	☐	○
8. Clears the table completely after a meal.	0	1	2	3	☐	○
10. Cleans room or living quarters regularly.	0	1	2	3	☐	○
12. Dusts furniture until it is clean.	0	1	2	3	☐	○

continued

Home Living *continued*

	Is Not Able	Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
14. Makes simple meals that require no cooking, for example, sandwiches or salads.	0	1	2	3	☐	○
16. Washes dishes either by hand or by placing them in a dishwasher.	0	1	2	3	☐	○
18. Uses small electrical appliances, for example, a can opener or blender.	0	1	2	3	☐	○
20. Uses a clothes dryer.	0	1	2	3	☐	○
22. Cooks simple foods on a stove, for example, eggs or canned soup.	0	1	2	3	☐	○
24. Mixes and cooks fairly complex foods on a stove or oven, for example, cake or brownies.	0	1	2	3	☐	○

BEHAVIOR FREQUENCY

Total ____ / 75 Total Guessed

Health and Safety

1. Swallows liquid medicines if needed for illness.	0	1	2	3	☐	○
3. Shows caution around hot or dangerous items.	0	1	2	3	☐	○
5. Follows general safety regulations at school or other public places.	0	1	2	3	☐	○
7. Tests hot foods before eating them.	0	1	2	3	☐	○
9. Carries breakable objects safely and carefully.	0	1	2	3	☐	○
11. Calls for help if someone is hurt at home.	0	1	2	3	☐	○
13. Cares for his/her minor injuries, for example, paper cuts, knee scrapes, or nosebleeds.	0	1	2	3	☐	○
15. Asks to see school nurse or other school official when ill or hurt.	0	1	2	3	☐	○
17. Helps younger children cross the street by taking their hands.	0	1	2	3	☐	○
19. Obeys traffic signals when riding a bike or driving a car.	0	1	2	3	☐	○
21. Takes prescription medicines by himself/herself.	0	1	2	3	☐	○

Total ____ / 66 Total Guessed

Leisure

	Is Not Able	Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
		BEHAVIOR FREQUENCY				
1. Plays with toys, games, or other fun items with other people.	0	1	2	3	☐	○
						○
3. Looks at pictures or reads books or magazines during free time.	0	1	2	3	☐	○
						○
5. Waits for his/her turn in games and other fun activities.	0	1	2	3	☐	○
						○
7. Selects television programs or videotapes to keep up with an area of interest, for example, sports, music, or nature.	0	1	2	3	☐	○
						○
9. Listens to music for fun and relaxation.	0	1	2	3	☐	○
						○
11. Invites others home for a fun activity.	0	1	2	3	☐	○
						○
13. Invites others to go first in games, play, or other activities.	0	1	2	3	☐	○
						○
15. Participates in an organized program for a sport or hobby, for example, takes a music class or practices basketball.	0	1	2	3	☐	○
						○
17. Plans ahead for play or fun activities on free days or afternoons.	0	1	2	3	☐	○
						○
19. Plans ahead for leisure activities during school breaks or vacations.	0	1	2	3	☐	○
						○
21. Decides alone to join an organized group, for example, a club, sports team, or musical group.	0	1	2	3	☐	○
						○
			Total	/ 66	Total Guessed	

Self-Care

1. Uses restroom at home without help.	0	1	2	3	☐	○
						○
3. Washes hands with soap.	0	1	2	3	☐	○
						○
5. Blows and wipes nose with tissue or handkerchief.	0	1	2	3	☐	○
						○
7. Has pleasant breath.	0	1	2	3	☐	○
						○
9. Puts shoes on correct feet.	0	1	2	3	☐	○
						○

continued

Self-Care *continued*

	Is Not Able	BEHAVIOR FREQUENCY: Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
11. Dresses himself/herself.	0	1	2	3	☐	○
						○
13. Cleans or brushes himself/herself off if muddy or dirty.	0	1	2	3	☐	○
						○
15. Keeps hair neat during the day by brushing or combing.	0	1	2	3	☐	○
						○
17. Uses public restroom alone.	0	1	2	3	☐	○
						○
19. Combines hot and cold water for shower or bath.	0	1	2	3	☐	○
						○
21. Cleans under fingernails.	0	1	2	3	☐	○
						○
23. Cuts meats or other foods into bite size pieces.	0	1	2	3	☐	○
						○

Total ____ / 72 Total Guessed

Self-Direction

1. Works on one home or school activity for at least 15 minutes.	0	1	2	3	☐	○
						○
3. Stops a fun activity, without complaints, when told that time is up.	0	1	2	3	☐	○
						○
5. Controls anger when another person breaks the rules in games and other fun activities.	0	1	2	3	☐	○
						○
7. Controls temper when disagreeing with friends.	0	1	2	3	☐	○
						○
9. Controls disappointment when a favorite activity is canceled.	0	1	2	3	☐	○
						○
11. Keeps working on hard tasks without becoming discouraged or quitting.	0	1	2	3	☐	○
						○
13. Saves money to buy something special, for example, a birthday present or game.	0	1	2	3	☐	○
						○
15. When leaving home, informs others of destination and return time.	0	1	2	3	☐	○
						○
17. Routinely arrives at places on time.	0	1	2	3	☐	○
						○
19. Returns on time when requested to be back in one hour.	0	1	2	3	☐	○

continued

Self-Direction *continued*

	Is Not Able	Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
19. Works on tasks unsupervised for a time.						
21. Informs teacher in advance, if possible, when absence from school is necessary.	0	1	2	3	☐	
23. Makes plans for home projects in logical steps.	0	1	2	3	☐	
25. Plans ahead to allow enough time to complete big projects.	0	1	2	3	☐	
		Total		/75	Total Guessed	

Social

2. Has good relationships with parents and other adults.	0	1	2	3	☐	
4. Says "Thank you" when given a gift.	0	1	2	3	☐	
6. Laughs in response to funny comments or jokes.	0	1	2	3	☐	
8. Stands a comfortable distance from others during conversations (not too close).	0	1	2	3	☐	
10. Moves out of another person's way without being asked.	0	1	2	3	☐	
12. States when others seem happy, sad, scared, or angry.	0	1	2	3	☐	
14. Offers assistance to others.	0	1	2	3	☐	
16. Shows good judgment in selecting friends.	0	1	2	3	☐	
18. Congratulates others when something good happens to them.	0	1	2	3	☐	
20. Offers guests food or beverages.	0	1	2	3	☐	
22. Personally makes or buys gifts for family members on major holidays.	0	1	2	3	☐	
		Total		/69	Total Guessed	

Work

Complete the **Work** *skill area if the individual being rated holds a part-time or full-time job.*

	Is Not Able	BEHAVIOR FREQUENCY: Never When Needed	Sometimes When Needed	Always When Needed	Check If You Guessed	Comments
1. Completes work assignments in required time limits.	0	1	2	3	☐	○
						○
3. Starts back to work willingly after taking a break or lunch.	0	1	2	3	☐	○
						○
5. Returns tools and other work-related items to their proper location after their use.	0	1	2	3	☐	○
						○
7. Keeps working quickly and accurately, even with loud noises or distractions.	0	1	2	3	☐	○
						○
9. Performs extra work on the job willingly.	0	1	2	3	☐	○
						○
11. Changes from one job-related task to another without special instructions from supervisor.	0	1	2	3	☐	○
						○
13. Shows positive attitude towards job.	0	1	2	3	☐	○
						○
15. Works quietly and does not disrupt or disturb the work of others.	0	1	2	3	☐	○
						○
17. Attends work regularly.	0	1	2	3	☐	○
						○
19. Follows daily work schedule without reminders from supervisor.	0	1	2	3	☐	○
						○
21. Behaves safely at work so that no one will be harmed.	0	1	2	3	☐	○
		Total		/63	Total Guessed	

Notes

ABAS II Adaptive Behavior Assessment System® SECOND EDITION

Supplemental Analyses

Calculate the Skill Area Mean Scaled Scores

Sum of Scaled Scores			
Number of Skill Areas	÷ 9	÷ 3	÷ 4
Mean Scaled Score			

Determine Strengths and Weaknesses

CON	Communication						
	Functional Academics						
	Self-Direction						
SO	Leisure						
	Social						
PR	Community Use						
	Home Living						
	Health and Safety						
	Self-Care						

☐ GAC Mean
☐ Domain Means

☐ .15
☐ .05

To determine strengths and weaknesses see Table B.8 (GAC Mean), or Tables B.8, B.9, and B.10 (Domain Means).

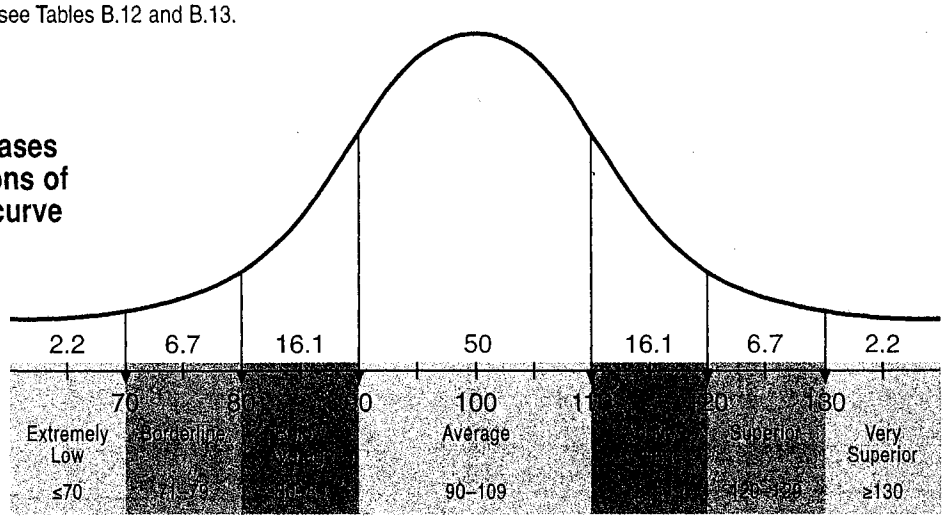
Discrepancy Comparisons

Conceptual–Social	CON	SO				
Conceptual–Practical	CON	PR				
Social–Practical	SO	PR				

☐ .15
☐ .05

For discrepancy comparisons see Tables B.12 and B.13.

Percent of cases under portions of the normal curve



ABAS II
Adaptive Behavior Assessment System® SECOND EDITION

Summary Page

Patti L. Harrison • Thomas Oakland

Child's Name: _____
First Middle Last

Grade: _____ ID: _____

Rater's Name: _____

Assessment Professional: _____

Today's Date			
Date of Birth			
Age			

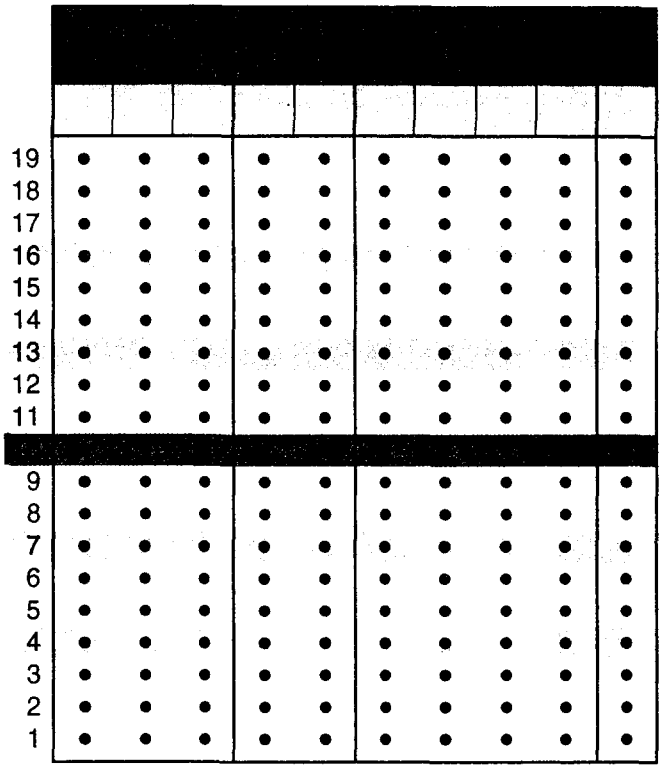
Raw Score to Scaled Score Conversions
(See Table A.5.)

Communication	(Com)					
Community Use	(CU)					
Functional Academics	(FA)					
Home Living	(HL)					
Health and Safety	(HS)					
Leisure	(LS)					
Self-Care	(SC)					
Self-Direction	(SD)					
Social	(Soc)					
(Work)	(WK)		( )			
Sums of Scaled Scores						
Composite			GAC	CON	SO	PR

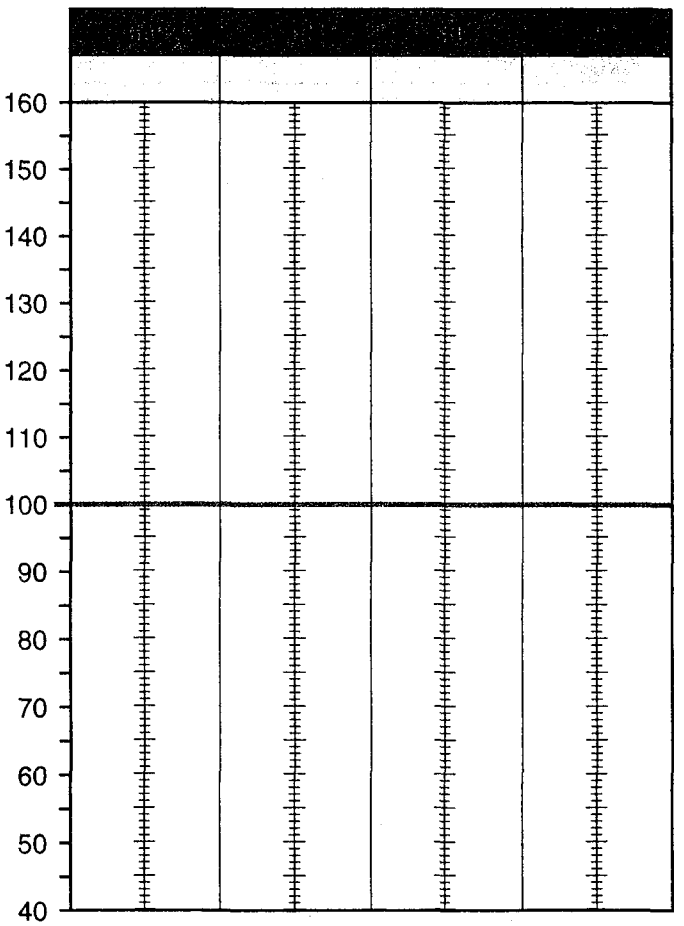
Sum of Scaled Scores to Composite Score Conversions
(See Table A.6.)

GAC				–
Conceptual				–
Social				–
Practical				–

Skill Area Scaled Score Profile



Composite Score Profile



Appendix E. O' Gorman's (1970) Diagnostic Criteria for Autistic Disorder[5]

1. Withdrawal from, or failure to become involved with reality; in particular, failure to form normal relationships with people;

2. Serious intellectual retardation with islets of higher, nearly normal or exceptional intellectual function or skills;

3. Failure to acquire speech, or to maintain or improve on speech already learned, or to use what speech has been acquired for communication;

4. Abnormal response to one or more types of sensory stimulus (usually sound);

5. Gross and sustained exhibition of mannerisms or peculiarities of movement, including immobility and hyperkinesis, but excluding tics;

6. Pathological resistance to change. This may be shown by:
   (a) Insistence on observing rituals whether in the patient's own behavior or in those around him;
   (b) Pathological attachment to the same surroundings, equipment, toys, and people (even though the relationship with the person involved may be purely mechanical and emotionally empty);
   (c) Excessive preoccupation with particular objects or certain characteristics of them without regard to their accepted functions;
   (d) Severe anger or terror or excitement, or increased withdrawal when the sameness of the environment is threatened (e.g., by strangers).

[5] Howlin, P. & Rutter, M. (1987). *Treatment of autistic children.* New York, NY: John Wiley & Sons, p. 231.

Appendix F. DSM-IV-TR (APA, 2000) Diagnostic Criteria for Autistic Disorder[6]

A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):

(1) qualitative impairment in social interaction, as manifested by at least two of the following:

(a) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
(b) failure to develop peer relationships appropriate to developmental level
(c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest)
(d) lack of social or emotional reciprocity

(2) qualitative impairments in communication as manifested by at least one of the following:

(a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
(b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
(c) stereotyped and repetitive use of language or idiosyncratic language
(d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(3) restricted repetitive and stereotyped patterns of behaviors, interests, and activities, as manifested by at least one of the following:

(a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
(b) apparently inflexible adherence to specific, nonfunctional routines or rituals
(c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
(d) persistent preoccupation with parts of objects

B. Delays of abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.

C. The disturbance is not better accounted for by Rett's or Childhood Disintegrative Disorder.

---

[6]APA. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. text revision). Washington, DC: Author, p. 75.

Table 1

Comparison of the Clinical Features of Autism

	Kanner (1943)	O'Gorman (1970)	Ritvo & Freeman (1977)	DSM-IV (1994)	DSM-IV-TR (2000)
Speech Delay	Yes	Yes	Yes	Yes	Yes
Cognitive Delay	No	Yes	Yes	Not mentioned	Not mentioned
Autistic Social Problems	Yes	Yes	Yes	Yes	Yes
Clumsiness	Not mentioned	Peculiarities of movement	Not mentioned	Not mentioned	Not mentioned
Pedantic (formal) Speech	May be present	Not mentioned	Not mentioned	Not mentioned	Not mentioned
All Absorbing Interests	Yes	Yes	Yes	Yes	Yes

Appendix G. ICD-10 (WHO, 1993) Diagnostic Criteria for Asperger Syndrome[7]

A. There is no clinically significant general delay in spoken or receptive language or cognitive development. Diagnosis requires that single words should have developed by 2 years of age or earlier and that communicative phrases be used by 3 years of age or earlier. Self-help skills, adaptive behaviour, and curiosity about the environment during the first 3 years should be at a level consistent with normal intellectual development. However, motor milestones may be somewhat delayed and motor clumsiness is usual (although not a necessary diagnostic feature). Isolated special skills, often related to abnormal preoccupations, are common, but are not required for diagnosis.

B. Qualitative abnormalities in reciprocal social interaction are manifest in at least two of the following areas:

(a) failure adequately to use eye-to-eye gaze, facial expression, body posture, and gesture to regulate social interaction;

(b) failure to develop (in a manner appropriate to mental age, and despite ample opportunities) peer relationships that involve a mutual sharing of interests, activities and emotions;

(c) lack of socio-emotional reciprocity as shown by an impairment or deviant response to other people's emotions: or lack of modulation of behaviour according to social context: or a weak integration of social, emotional and communicative behaviours;

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[7] WHO. (1993). *International Classification of Diseases and Disorders* (ICD-10). Geneva: Author.

(d) lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g. a lack of showing, bringing, or pointing out to other people objects of interest to the individual).

C. The individual exhibits an unusually intense, circumscribed interest or restricted, repetitive and stereotyped patterns of behaviour, interests, and activities manifest in at least one of the following areas.

(a) an encompassing preoccupation with stereotyped and restricted patterns of interest that are abnormal in content or focus: or one or more interests that are abnormal in their intensity and circumscribed nature though not in the content or focus;

(b) apparently compulsive adherence to specific, non-functional routines or rituals;

(c) stereotyped and repetitive motor mannerisms that involve either hand/finger flapping or twisting, or complex whole body movements;

(d) preoccupations with part-objects or non-functional elements of play materials (such as their colour, the feel of their surface, or the noise/vibration that they generate);

However, it would be less usual for these to include either motor mannerisms or preoccupations with part-objects or non-functional elements of play materials.

D. The disorder is not attributable to the other varieties of pervasive developmental disorder: simple schizophrenia, schizo-typal disorder, obsessive-compulsive disorder, anankastic personality disorder, reactive and disinhibited attachment disorders of childhood.

Appendix H. DSM-IV-TR (APA, 2000) Diagnostic Criteria for Asperger's Disorder[8]

A. Qualitative impairment in social interaction, as manifested by at least two of the following:

(1) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
(2) failure to develop peer relationships appropriate to developmental level
(3) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)
(4) lack of social or emotional reciprocity

B. Restricted repetitive and stereotyped patterns of behavior, interests, and activities as manifested by at least one of the following:

(1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
(2) apparently inflexible adherence to specific, nonfunctional routines or rituals
(3) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
(4) persistent preoccupation with parts of objects

C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.

D. There is no clinically significant general delay in language (e.g., single words used by age 2 years, communicative phrases used by age 3 years).

E. There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behaviors (other than in social interaction), and curiosity about the environment in childhood.

F. Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

---

[8] APA. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. text revision). Washington, DC: Author, p. 84.

Appendix I. Gillberg and Gillberg's (1989) Diagnostic Criteria for Asperger Syndrome[9]

1. *Social impairment* (extreme egocentricity)

(at least in two of the following):

(a) Inability to interact with peers

(b) Lack of desire to interact with peers

(c) Lack of appreciation of social cues

(d) Socially and emotionally inappropriate behaviour

2. *Narrow interest*

(at least one of the following):

(a) Exclusion of other activities

(b) Repetitive adherence

(c) More rote than meaning

3. *Repetitive routines*

(at least one of the following):

(a) On self, in aspects of life

(b) On others

4. *Speech and language peculiarities*

(at least three of the following):

(a) Delayed development

(b) Superficially perfect expressive language

---

[9] Gillberg, I. C., & Gillberg, C. (1989). Asperger syndrome: Some epidemiological considerations: A research note. *Journal of Child Psychology and Psychiatry, 30,* 631-638.

(c) Formal pedantic language

(d) Odd prosody, peculiar voice characteristics

(e) Impairment of comprehension including misinterpretation of literal/implied meanings

5. *Non-verbal communication problems*

(at least one of the following):

(a) Limited use of gestures

(b) Clumsy/gauche body language

(c) Limited facial expression

(d) Inappropriate expression

(e) Peculiar stiff gaze

6. *Motor clumsiness*

Poor performance on neuro-developmental examination

Appendix J. Szatmari, Bremner and Nagy's (1989) Diagnostic Criteria for Asperger Syndrome[10]

1. *Solitary*

(at least two of the following):

No close friends

Avoids others

No interest in making friends

A loner

2. *Impaired social interaction*

(at least one of the following):

Approaches others only to have needs met

A clumsy social approach

One-sided responses to peers

Difficulty sensing feelings of others

Detached from feelings of others

3. *Impaired nonverbal communication*

(at least one of the following):

Limited facial expression

Unable to read emotion from facial expression of child

Unable to give message with the eyes

---

[10] Szatmari, P., Bremner, R., & Nagy, J. (1989). Asperger's syndrome: A review of clinical features. *Canadian Journal of Psychiatry, 34,* 554-560.

Does not look at others

Does not use hands to express oneself

Gestures are large and clumsy

Comes too close to others

4. *Odd speech*

(at least two of the following):

Abnormalities in inflection

Talks too much

Talks too little

Lack of cohesion to conversation

Idiosyncratic use of words

Repetitive patterns of speech

5. *Does not meet DSM-III-R criteria for*

Autistic disorder

Table 2

DSM-IV Differences between Asperger's Disorder and Autistic Disorder[11]

DSM-IV Characteristics	Asperger's Disorder	Autistic Disorder
1. Impairments in social interactions		
a. Impaired nonverbal behaviour	Yes	Yes
b. Impaired ability to develop peer friendships	Yes	Yes
c. Impaired ability to seek and share interests	Yes	Yes
d. Impaired ability in social and emotional reciprocity	Yes	Yes
2. Impairments in communication		
a. Delay or lack of spoken language	No	Yes
b. Impaired ability to initiate or sustain a conversation	No	Yes
c. Stereotypic, repetitive use of language	No	Yes
d. Impaired or lack of symbolic play	No	Yes
3. Restricted, repetitive behaviours		
a. Preoccupation with restricted interests	Yes	Yes
b. Stereotypic, repetitive motor interests	Yes	Yes
c. Restricted range of interests	Yes	Yes
d. Interests in nonfunctional activities	Yes	Yes
e. Interests in inanimate objects	No	Yes
4. Medical conditions		
a. Nonspecific neurological signs	Yes (motor clumsiness)	Yes (seizures)
5. Onset	After 3 years	Before 3 years
6. Prevalence	More men than women	More men than women
7. Comorbidity		
a. Mental retardation	No	Yes (IQ 35-50)

[11] McLaughlin-Cheng, E. (1998). Asperger syndrome and autism: A literature review and meta-analysis. *Focus on Autism and Other Developmental Disabilities, 13* (4), p. 238.

Table 3

Comparison of the Clinical Features of Asperger Syndrome

	Asperger (1944)	Wing (1981)	Tantam (1988)	ICD-10 (1988)	Gillberg (1989)	Szatmari et al. (1989)	DSM-IV-TR (2000)
Speech delay	No	May be present	May be present	No	May be present	Not mentioned	No
Cognitive delay	No	May be present	May be present	No	May be present	Not mentioned	No
Autistic social problems	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clumsiness	Yes	Yes	Yes	Usual	Yes	Clumsy gestures	May be present
Pedantic (formal) speech	Yes	Yes	Yes	Not mentioned	Yes	Yes	Not mentioned
All absorbing interests	Yes	Yes	Yes	Usual	Yes	Yes	May be present

Table 4

Behavioural Comparison of Autistic Disorder and Asperger Syndrome[12]

	Autistic Disorder	*Asperger Syndrome*
1. Intelligence measures Standardized scores	Borderline through average range	Average to high average range
2. Language Development Pragmatic language a. Verbal b. Nonverbal	Delayed onset, deficits Delayed and disordered Deficits can be severe	Normal development Deficits can be observed Deficits (e.g., odd eye gaze)
3. Communication Expressive Receptive	 Deficits can be observed Deficits can be observed	 Within normal limits Within normal limits
4. Social Responsiveness Attachment a. Parents b. Caregivers c. Peers Interactions a. Initiations to peers b. Positive responses to peers c. Symbolic play d. Reciprocal play e. Coping f. Friendships g. Requests for assistance Emotional self-regulation a. Emotional empathy b. Emotional responsiveness	 Lacks responsiveness Lacks responsiveness Lacks responsiveness Minimal frequency Minimal frequency Absence of symbolic play Minimal frequency Minimal frequency Minimal frequency Deficits can be observed Aloof, indifferent	 Observed responsiveness Observed responsiveness Observed responsiveness Frequent, poor quality Frequent, awkward, and pertains to self-interests No impaired symbolic play Observed but awkward Deficits observed in quality Minimal frequency Observed but awkward Observed but awkward Observed but could be extreme
5. Physical/Motor a. Gross motor b. Repetitive behaviour	 No observed deficits Observed	 Observed deficits-controversial Observed

[12] McLaughlin-Cheng, E. (1998). Asperger syndrome and autism: A literature review and meta-analysis. *Focus on Autism and Other Developmental Disabilities, 13* (4), p. 237.

Appendix K. DSM-IV-TR (APA, 2000) Diagnostic Criteria for Mental Retardation[13]

A. Significantly subaverage intellectual functioning: an IQ of approximately 70 or below on an individually administered IQ test (for infants, a clinical judgment of significantly subaverage functioning).

B. Concurrent deficits or impairments in present adaptive functioning (i.e., the person's effectiveness in meeting the standards expected for his or her age by his or her cultural group) in at least two of the following areas: communication, self-care, home living, social/ interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety.

C. The onset is before age 18 years.

[13] APA. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. text revision). Washington, DC: Author, p. 49.

Appendix L. Arguments For and Against Separate Diagnosis of Asperger Syndrome and High-Functioning Autism[14]

For:

1. People with AS have less atypical language and communication than people with HFA.

2. People with AS have more social interest and less unusual social behaviour than people with HFA.

3. People with AS generally have Verbal IQs that are markedly higher than their Performance IQs, while the opposite pattern is true of people with HFA.

4. People with AS are more likely to have significant motor clumsiness and delayed development of motor skills than people with HFA.

Against:

1. Autism varies in severity and is associated with varying levels of intelligence. What is called AS is mild autism with average to above-average intelligence, associated with less impairment in all areas of functioning.

2. The differences seen between groups in research studies are tainted by methodological limitations, including inconsistent or evolving diagnostic criteria and possible circularity (that is, for example, groups were divided based on early language delay, then found to differ on current language skills).

3. The pattern of Verbal vs. Performance IQ is not specific to either group.

4. Research indicates significant levels of motor coordination difficulties in both groups.

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[14] Mesibov, G. B., Shea, V., & Adams, L. W. (2001). *Understanding Asperger syndrome and high-functioning autism.* New York, NY: Kluwer Academic/Plenum Publishers, p. 36.

Appendix M. Informed Consent Form for Primary Caregivers of Adolescents with Autism Spectrum Disorders

PLEASE RETURN BY MARCH 21, 2005

Informed Consent Form

My signature on this form indicates whether or not I agree to participate in a study by Katharine Filbert and Dr. Edward Rawana on the measurement of strengths, adaptive functioning, and behavioural problems in my adolescent, and it also indicates that I understand the following:

1. If I participate, I will complete four questionnaires about my adolescent's behaviours, feelings, and thinking, that will take a maximum of two hours to complete.
2. If I participate, I give the Autism Coordinator at Lakehead Regional Family Centre (LRFC) permission to provide the above two researchers with a signed statement of my adolescent's diagnosis.
3. If I participate, I am a volunteer and I can withdraw at any time from the study.
4. If I participate, there is no significant risk of physical or psychological harm to either myself or my adolescent.
5. If I participate, the data provided by myself will be confidential.
6. If I participate, I will receive a summary of the results for my adolescent's group (autism spectrum disorder group), upon request, following the completion of the study.
7. The data will be held in a locked cabinet at Lakehead University for a period of seven years, and any information that identifies myself or my adolescent will be stored separate and secure from the questionnaires.

PLEASE RETURN BY MARCH 21, 2005

I have received explanations about the nature of the study, its purpose, and procedures.

Please check the line below:

_____ I agree to participate.

Name of Adolescent (Please Print)	Name of Parent or Guardian (Please Print)

Signature of Adolescent	Date
Signature of Parent or Guardian	Date
Katharine Filbert, Masters of Arts Candidate, Clinical Psychology	Date
Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology	Date

Appendix N. Informed Consent Form for Primary Caregivers of Adolescents with Developmental Disabilities

PLEASE RETURN BY MARCH 21, 2005

Informed Consent Form

My signature on this form indicates whether or not I agree to participate in a study by Katharine Filbert and Dr. Edward Rawana on the measurement of strengths, adaptive functioning, and behavioural problems in my adolescent, and it also indicates that I understand the following:

1. If I participate, I will complete four questionnaires about my adolescent's behaviours, feelings, and thinking, that will take a maximum of two hours to complete.
2. If I participate, I give the special needs teacher of my adolescent permission to provide the above two researchers with a signed statement of my adolescent's diagnosis.
3. If I participate, I am a volunteer and I can withdraw at any time from the study.
4. If I participate, there is no significant risk of physical or psychological harm to either myself or my adolescent.
5. If I participate, the data provided by myself will be confidential.
6. If I participate, I will receive a summary of the results for my adolescent's group (developmental disability group), upon request, following the completion of the study.
7. The data will be held in a locked cabinet at Lakehead University for a period of seven years, and any information that identifies myself or my adolescent will be stored separate and secure from the questionnaires.

PLEASE RETURN BY MARCH 21, 2005

I have received explanations about the nature of the study, its purpose, and procedures.

Please check the line below:

_____ I agree to participate.

Name of Adolescent (Please Print)	Name of Parent or Guardian (Please Print)
Signature of Parent or Guardian	Date
Katharine Filbert, Masters of Arts Candidate, Clinical Psychology	Date
Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology	Date

Appendix O. Study Description Published in LRFC Fall 2004 Newsletter

PLEASE CONTACT BY FEBRUARY 21, 2005

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Parent or Guardian;

We are interested in positive feelings/behaviour, adaptive functioning, and behavioural problems in your adolescent that may describe the way your adolescent deals with day-to-day challenges.

Research has shown that looking at strengths may help to resolve many difficulties. Also, there is some uncertainty in the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is not a lot of information about strengths of individuals with these diagnoses. The purpose of this research study is to:

(1) look at adolescent's individual strength areas, adaptive functioning, and behavioural problems, and;

(2) use strengths to tell the difference between autism spectrum disorders, developmental disabilities, and adolescents without these diagnoses.

To accomplish this goal, we will ask that you complete **four questionnaires** about your adolescent's behaviours, feelings, and thinking. There are no right or wrong answers to these questions. We are interested in learning your views of your adolescent's behaviours, feelings, and thinking. It may take a maximum of two hours to finish the questionnaires.

PLEASE CONTACT BY FEBRUARY 21, 2005

As a parent or guardian of an adolescent with an autism spectrum disorder, the information you give will be used only to examine adolescents with autism spectrum disorders. This information will then be compared with information from parents or guardians of adolescents with diagnoses of developmental disabilities, as well as to information from parents or guardians of adolescents without diagnoses of autism spectrum disorders or developmental disabilities.

Also, to tell which diagnosis of autism your adolescent has, Low-Functioning Autism (LFA) and High-Functioning Autism (HFA) will be assigned if their intellectual functions are in the deficient/disabled or low borderline range for LFA. All other intellectual functioning ranges (e.g., Average to Superior) will be assigned as HFA. Asperger Syndrome will be assigned if a diagnostic report about your adolescent says that he/she has this diagnosis. Using these criteria, we will ask that the Autism Coordinator at Lakehead Regional Family Centre (LRFC) tell us the diagnosis that your adolescent has received. We will not be looking at any assessment report on your adolescent. We will look at a document stating your adolescent's name and respective diagnosis, which will then be signed by the Autism Coordinator. We therefore require your written consent, as well as your adolescent's consent, as outlined upon the consent forms included with the questionnaires, to get this information from the Autism Coordinator.

PLEASE CONTACT BY FEBRUARY 21, 2005

There is no significant risk of harm to the Autism Coordinator, yourself, or your adolescent by participating in this study. It is expected that you may learn about various positive behaviours and feelings related to your adolescent's diagnosis, of which, you may not have previously known. You may also learn more about some behavioural difficulties related to your adolescent's diagnosis.

The responses to the questionnaires that you provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies yourself or your adolescent will be separated from your questionnaires, and stored in a separate secure file. Your consent and your adolescent's consent are completely voluntary. If at any time you, or your adolescent wishes to withdraw from the study, you are free to do so without any consequence.

Upon completion of this research in the next few months, you are also entitled to receive a summary of results for your adolescent's group (autism spectrum disorder group). If you are interested in participating in this study, you may contact myself through telephone at 807-344-7951, or e-mail at **kfilbert@lakeheadu.ca.** If you have any questions, you may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

_____

Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

_____

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix P. Letter forwarded to Lakehead Regional Family Centre (LRFC) as part of the Documents for Ethical Approval from this Centre

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

To the Director of Programs and Services;
283 Lisgar Street
Thunder Bay, ON
P7B 6G6

A study has been developed which aims to examine positive behaviours, emotions, and thinking within adolescents that may contribute to more adaptive functioning in their life situations. This study also evaluates behavioural problems in adolescents. Research has indicated that the assessment of strengths may contribute to the resolution of several difficulties. Currently, some uncertainty surrounds the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is a lack of information concerning strengths within this diagnostic category. The intent of this research study is to:

(1) assess individual strength areas, adaptive functioning and behavioural difficulties within adolescents; and

(2) apply these variables to differentiate between autism spectrum disorders and similar developmental disabilities.

To accomplish this goal, we will require the participation of primary caregivers (e.g., parents/guardians) of adolescents with autism spectrum disorders, developmental disabilities, and primary caregivers of "normal" adolescents to complete **four questionnaires** in reference to the adolescent's behaviours, emotions, and thinking. It may take the primary

caregiver a maximum of two hours to complete the questionnaires. In the case of clients from Lakehead Regional Family Centre (LRFC), we would be looking for primary caregivers whose adolescents have been diagnosed with Low-Functioning Autism (LFA), High-Functioning Autism (HFA), and Asperger Syndrome (AS).

Furthermore, for classification purposes of autism spectrum disorders, Low-Functioning Autism (LFA) and High-Functioning Autism (HFA) will be classified using the criteria of intellectual functioning in the intellectually deficient/disabled or low borderline range for LFA. All other intellectual functioning ranges (e.g., Average to Superior) will be regarded as encompassing HFA. For Asperger Syndrome, classification will be determined using diagnostic reports which clearly state that the individual has this diagnosis. Using these criteria, we will require that the Autism Coordinator at LRFC inform us as to the diagnosis that the primary caregiver's adolescent has received, to ensure that the adolescent meets criteria for LFA, HFA, or AS diagnosis. This latter procedure will only be followed after parents/guardians have agreed to participate in the study. To this end, we would require that the Autism Coordinator at LRFC provide us with a list of each adolescent's name and their respective diagnosis, which will then be signed by the Autism Coordinator. Adolescents and their parents would be expected to give written consent to only access the diagnostic information and not the report per se. We will not be looking at any assessment reports of the adolescent.

Interested primary caregivers will contact the primary researcher through e-mail or telephone, at which time the primary researcher will thank them for participating in the study, as well as answer any questions they may have about the study. After obtaining the names of the adolescents whose primary caregivers are participating, as well as the addresses of participants, the primary researcher will mail out the same cover letter used in recruiting these participants, four questionnaires, a consent form to access diagnostic information, and an informed consent form. Included in these documents will be a self-addressed stamped envelope, which participants may use to forward the questionnaires to the primary researcher at Lakehead University. However, participants will also be encouraged to drop off completed questionnaires to LRFC for pick-up by the primary researcher. Upon obtaining the names of the adolescents whose primary caregivers are participating in the study, the primary researcher will contact the Autism Coordinator via telephone in order for diagnostic reports to be accessed in writing the list of adolescent's names and respective diagnosis, to be forwarded to the primary researcher. However, the primary researcher will tell the Autism Coordinator not to inform her as to this diagnostic information until the primary researcher has received the primary caregiver's and adolescent's consent forms.

There is no significant risk of harm to the Autism Coordinator, primary caregiver, or adolescent by participating in this study. It is expected that parents/guardians may learn about various strengths and functioning related to their adolescent's diagnosis which they may not have previously been aware. Parents/guardians may also learn more about some behavioural difficulties associated with their adolescent's diagnosis.

The responses to the questionnaires that primary caregivers provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies the primary caregiver or their adolescent will be separated from their questionnaires, and stored in a separate secure file. Primary caregiver and adolescent consent is completely voluntary. If at any time the primary caregiver or adolescent wishes to withdraw, he/she is free to do so without any consequence.

Upon completion of this research in the next few months, participants, including the Lakehead Regional Family Centre, are entitled to receive a summary of results. If you wish access to those results, or have any questions about the study, you may contact myself through telephone at 807-344-7951, or e-mail at **kfilbert@lakeheadu.ca.** You may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

_____

Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

_____

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix Q. Letter forwarded to Lakehead Public Schools System as part of the Documents to be Sent to the Lakehead Public Schools for Ethical Approval from that Organization

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

To the Superintendent of Special Education;
2135 Sills Street
Thunder Bay, ON
P7E 5T2

A study has been developed which aims to examine positive behaviours, emotions, and thinking within adolescents that may contribute to more adaptive functioning in their life situations. This study also evaluates behavioural problems in adolescents. Research has indicated that the assessment of strengths may contribute to the resolution of several difficulties. Currently, some uncertainty surrounds the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is a lack of information concerning strengths within this diagnostic category. The intent of this research study is to:

(1) assess individual strength areas, adaptive functioning and behavioural difficulties within adolescents; and

(2) apply these variables to differentiate between autism spectrum disorders and similar developmental disabilities.

To accomplish this goal, we will require the participation of primary caregivers (e.g., parents/guardians) of adolescents with autism spectrum disorders, developmental disabilities, and primary caregivers of "normal" adolescents to complete **four questionnaires**

in reference to the adolescent's behaviours, emotions, and thinking. It may take the primary caregiver a maximum of two hours to complete the questionnaires. In securing parents/guardians from your school board, we would be looking for primary caregivers whose adolescents have been diagnosed with Developmental Disabilities (DD) and primary caregivers of "normal" adolescents with no diagnosis of autism spectrum disorders or developmental disabilities.

Furthermore, we would require that the special needs teachers who teach in the Special Needs classes at the elementary and secondary levels, inform us of the diagnosis that the primary caregiver's adolescent has received, in order to ensure that the adolescent meets criteria for developmental disability diagnosis. To this end, the special needs teacher will be asked to provide us with a list of the student's name and respective diagnosis, which this teacher will then sign. We therefore require written parental consent, as outlined upon the consent forms the primary caregivers will receive with their questionnaires, in order to obtain this information from the special needs teacher. We will not directly access any assessment reports from your school board, but will only ask that the special needs teacher provide us with the diagnosis of the adolescent based on reports in the Ontario School Record (OSR).

In regards to recruiting primary caregivers of adolescents with developmental disabilities, the following procedure will be used. Each special needs teacher at the elementary and secondary level will be forwarded letters outlining the study, via the school's principal. These teachers will also be provided with cover letters to be sent home with adolescents in their classes. We are looking for the primary caregivers of the adolescents in each special needs class to

participate. We need a total of about thirty primary caregivers. Interested participants will contact the primary researcher by e-mail or telephone, at which time the primary researcher will thank them for participating in the study, as well as answer any questions they may have about the study. After obtaining the names of the adolescent's whose primary caregivers are participating, as well as the addresses of participants, the same cover letter used in recruiting these participants, four questionnaires, consent forms to access diagnostic information, and an informed consent form will be mailed to participants. Included in these documents will be a self-addressed stamped envelope, which participants may use to forward the documents to the primary researcher at Lakehead University. Upon obtaining the names of the adolescents whose primary caregivers are participating in the study, the primary researcher will contact their special needs teacher via telephone, in order for diagnostic reports to be accessed in writing the list of adolescent's names and respective diagnosis, to be forwarded to the primary researcher. However, the primary researcher will tell the special needs teacher not to inform her as to this diagnostic information until the primary researcher has received the primary caregiver's consent forms.

To access primary caregivers of "normal" adolescents the following procedure will be followed. Within each school that has a special needs class, letters will be sent to teachers of one regular class at each grade level (e.g., grades six to twelve). These teachers will then be provided with cover letters for the adolescents in the class. We are looking for the primary caregivers of the adolescents in each class to participate. We need a total of about 30 primary caregivers. Interested primary caregivers will then contact the primary researcher by e-mail or

telephone, at which time the primary researcher will thank them for participating in the study, and answer any questions they may have about the study. After obtaining the addresses of participants, the primary researcher will mail out the same cover letter used in recruiting these participants, four questionnaires, and an informed consent form. Included in these documents will be a self-addressed stamped envelope which participants may use in forwarding the documents to the primary researcher at Lakehead University, once they have been completed.

There is no significant risk of harm to the teacher, primary caregiver, or adolescent by participating in this study. It is expected that parents/guardians may learn about various strengths and functioning related to their adolescent's diagnosis which they may not have previously been aware. They may also learn more about some behavioural difficulties associated with their adolescent's diagnosis.

The responses to the questionnaires that primary caregivers provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies the primary caregiver or their adolescent will be separated from their questionnaires, and stored in a separate secure file. Primary caregiver consent is completely voluntary. If at any time the primary caregiver wishes to withdraw, he/she is free to do so without any consequence.

Upon completion of this research in the next few months, participants are entitled to receive a summary of results. If you wish access to those results, or have any questions about the study, you may contact myself through telephone at 807-344-7951, or e-mail at kfilbert@lakeheadu.ca. You may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

_____

Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

_____

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix R. Cover Letter Sent to Primary Caregivers of Adolescents with Low-Functioning Autism, High-Functioning Autism, and Asperger Syndrome

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Parent or Guardian;

We are interested in positive feelings/behaviour, adaptive functioning, and behavioural problems in your adolescent that may describe the way your adolescent deals with day-to-day challenges.

Research has shown that looking at strengths may help to resolve many difficulties. Also, there is some uncertainty in the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is not a lot of information about strengths of individuals with these diagnoses. The purpose of this research study is to:

(1) look at adolescent's individual strength areas, adaptive functioning, and behavioural problems, and;

(2) use strengths to tell the difference between autism spectrum disorders, developmental disabilities, and adolescents without these diagnoses.

To accomplish this goal, we will ask that you complete **four questionnaires** about your adolescent's behaviours, feelings, and thinking. There are no right or wrong answers to these questions. We are interested in learning your views of your adolescent's behaviours, feelings, and thinking. It may take a maximum of two hours to finish the questionnaires.

As a parent or guardian of an adolescent with an autism spectrum disorder, the information you give will be used only to examine adolescents with autism spectrum disorders. This information will then be compared with information from parents or guardians of adolescents with diagnoses of developmental disabilities, as well as to information from parents or guardians of adolescents without diagnoses of autism spectrum disorders or developmental disabilities.

Also, to tell which diagnosis of autism your adolescent has, Low-Functioning Autism (LFA) and High-Functioning Autism (HFA) will be assigned if their intellectual functions are in the deficient/disabled or low borderline range for LFA. All other intellectual functioning ranges (e.g., Average to Superior) will be assigned as HFA. Asperger Syndrome will be assigned if a diagnostic report about your adolescent says that he/she has this diagnosis. Using these criteria, we will ask that the Autism Coordinator at Lakehead Regional Family Centre (LRFC) tell us the diagnosis that your adolescent has received. We will not be looking at any assessment report on your adolescent. We will look at a document stating your adolescent's name and respective diagnosis, which will then be signed by the Autism Coordinator. We therefore require your written consent, as well as your adolescent's consent, as outlined upon the consent forms included with the questionnaires, to get this information from the Autism Coordinator.

There is no significant risk of harm to the Autism Coordinator, yourself, or your adolescent by participating in this study. It is expected that you may learn about various positive behaviours and feelings related to your adolescent's diagnosis, of which, you may not have previously

known. You may also learn more about some behavioural difficulties related to your adolescent's diagnosis.

The responses to the questionnaires that you provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies yourself or your adolescent will be separated from your questionnaires, and stored in a separate secure file. Your consent and your adolescent's consent are completely voluntary. If at any time you, or your adolescent wishes to withdraw from the study, you are free to do so without any consequence.

Upon completion of this research in the next few months, you are also entitled to receive a summary of results for your adolescent's group (autism spectrum disorder group). If you are interested in participating in this study, you may contact myself through telephone at 807-344-7951, or e-mail at **kfilbert@lakeheadu.ca.** If you have any questions, you may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

_____

Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

_____

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix S. Instructional Page forwarded to Primary Caregivers of Adolescents with Low-Functioning Autism, High-Functioning Autism, and Asperger Syndrome

To whom it may concern,

Thank you for participating in our study. Your input is highly valued and greatly appreciated. Please sign the **informed consent form** and complete the **four questionnaires** enclosed (the Behavioural and Emotional Rating Scale [BERS]; the Child Behavior Checklist [CBCL]; the Strength Assessment Inventory [SAI]; and the Adaptive Behavior Assessment System [ABAS]). When you and your adolescent have signed the informed consent form, and you have completed the questionnaires, please put them inside the folded envelope enclosed (postage has already been paid), and mail to the address on the front of the envelope. Please write your address on the left corner of the envelope, or on the envelope flap. If you prefer, you can return this envelope with your informed consent form and four questionnaires to the secretary at Lakehead Regional Family Centre (LRFC). The secretary will ensure that the envelope is mailed to the address on the envelope. Again, thank you for participating in our study, and please feel free to contact either myself or Dr. Edward Rawana if you have any questions.

Sincerely,

_____

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix T. Letter forwarded to Principals of Elementary Schools in the Public Board

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Principal;

We are interested in positive emotions/behaviour, adaptive functioning, and behavioural problems in adolescents that may contribute to more adaptive functioning in their life situations.

Research has indicated that the assessment of strengths may contribute to the resolution of several difficulties. Currently, some uncertainty surrounds the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is a lack of information concerning strengths within this diagnostic category. The intent of this research study is to:

(1) assess adolescent's individual strength areas, adaptive functioning, and behavioural difficulties; and

(2) apply strength profiles, in particular, to differentiate between autism spectrum disorders, developmental disabilities and adolescents without these diagnoses.

To accomplish this goal, we would ask that you forward each teacher in your school of grades six to eight the letter outlining our study, as well as the cover letters to be sent home to primary caregivers (e.g., parents/guardians) of adolescents in these classes, so that interested primary caregivers may contact myself in order to take part in this study.

In your particular school, we would be looking for primary caregivers whose adolescents

have a diagnosis of Developmental Disability (DD), as well as primary caregivers of "normal"adolescents with no diagnosis of autism spectrum disorders or developmental disabilities. To this end, all primary caregivers will complete **four questionnaires** in reference to their adolescent's behaviours, emotions, and thinking. There are no right or wrong answers to these questions. We are interested in learning primary caregiver views of their adolescent's behaviours, emotions, and thinking. It may take a maximum of two hours to complete the questionnaires.

Furthermore, we would require that the special needs teachers who teach in the Special Needs classes at the elementary and secondary levels, inform us of the diagnosis that the primary caregiver's adolescent has received, in order to ensure that the adolescent meets criteria for developmental disability diagnosis. To this end, the special needs teacher will be asked to provide us with a list of the student's name and respective diagnosis, which this teacher will then sign. We therefore require written parental consent, as outlined upon the consent forms the primary caregivers will receive with their questionnaires, in order to obtain this information from the special needs teacher. We will not directly access any assessment reports from your school board, but will only ask that the special needs teacher provide us with the diagnosis of the adolescent based on reports in the Ontario School Record (OSR).

In regards to recruiting primary caregivers of adolescents with developmental disabilities, the following procedure will be used. Each special needs teacher at the elementary and secondary level will be forwarded letters outlining the study. These teachers will also be provided with cover letters to be sent home with adolescents in their classes. We are looking for the primary

caregivers of the adolescents in each special needs class to participate. We need a total of about thirty primary caregivers. Interested participants will contact the primary researcher by e-mail or telephone, at which time the primary researcher will thank them for participating in the study, as well as answer any questions they may have about the study. After obtaining the names of the adolescent's whose primary caregivers are participating, as well as the addresses of participants, the same cover letter used in recruiting these participants, four questionnaires, consent forms to access diagnostic information, and an informed consent form will be mailed to participants. Included in these documents will be a self-addressed stamped envelope, which participants may use to forward the documents to the primary researcher at Lakehead University. Upon obtaining the names of the adolescents whose primary caregivers are participating in the study, the primary researcher will contact their special needs teacher via telephone, in order for diagnostic reports to be accessed in writing the list of adolescent's names and respective diagnosis, to be forwarded to the primary researcher. However, the primary researcher will tell the special needs teacher not to inform her as to this diagnostic information until the primary researcher has received the primary caregiver's consent forms.

To access primary caregivers of "normal" adolescents the following procedure will be followed. Within each school that has a special needs class, letters will be sent to teachers of one regular class at each grade level (e.g., grades six to twelve). These teachers will then be provided with cover letters for the adolescents in the class. We are looking for the primary caregivers of the adolescents in each class to participate. We need a total of about 30 primary caregivers. Interested primary caregivers will then contact the primary researcher by e-mail or

telephone, at which time the primary researcher will thank them for participating in the study, and answer any questions they may have about the study. After obtaining the addresses of participants, the primary researcher will mail out the same cover letter used in recruiting these participants, four questionnaires, and an informed consent form. Included in these documents will be a self-addressed stamped envelope which participants may use in forwarding the documents to the primary researcher at Lakehead University, once they have been completed.

There is no significant risk of harm to the teacher, primary caregiver, or adolescent by participating in this study. It is expected that parents/guardians may learn about various strengths and functioning related to their adolescent's diagnosis which they may not have previously been aware. They may also learn more about some behavioural difficulties associated with their adolescent's diagnosis.

The responses to the questionnaires that primary caregivers provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies the primary caregiver or their adolescent will be separated from their questionnaires, and stored in a separate secure file. Primary caregiver consent is completely voluntary. If at any time the primary caregiver wishes to withdraw, he/she is free to do so without any consequence.

Upon completion of this research in the next few months, participants are entitled to receive a summary of results. If you wish access to those results, or have any questions about the study, you may contact myself through telephone at 807-344-7951, or e-mail at

kfilbert@lakeheadu.ca. You may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

_____

Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

_____

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix U. Letter forwarded to Principals of Secondary Schools in the Public Board

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Principal;

We are interested in positive emotions/behaviour, adaptive functioning, and behavioural problems in adolescents that may contribute to more adaptive functioning in their life situations.

Research has indicated that the assessment of strengths may contribute to the resolution of several difficulties. Currently, some uncertainty surrounds the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is a lack of information concerning strengths within this diagnostic category. The intent of this research study is to:

(1) assess adolescent's individual strength areas, adaptive functioning, and behavioural difficulties; and

(2) apply strength profiles, in particular, to differentiate between autism spectrum disorders, developmental disabilities and adolescents without these diagnoses.

To accomplish this goal, we would ask that you forward each teacher in your school of grades nine to twelve the letter outlining our study, as well as the cover letters to be sent home to primary caregivers (e.g., parents/guardians) of adolescents in these classes, so that interested primary caregivers may contact myself in order to take part in this study.

In your particular school, we would be looking for primary caregivers whose adolescents

have a diagnosis of Developmental Disability (DD), as well as primary caregivers of "normal"adolescents with no diagnosis of autism spectrum disorders or developmental disabilities. To this end, all primary caregivers will complete **four questionnaires** in reference to their adolescent's behaviours, emotions, and thinking. There are no right or wrong answers to these questions. We are interested in learning primary caregiver views of their adolescent's behaviours, emotions, and thinking. It may take a maximum of two hours to complete the questionnaires.

Furthermore, we would require that the special needs teachers who teach in the Special Needs classes at the elementary and secondary levels, inform us of the diagnosis that the primary caregiver's adolescent has received, in order to ensure that the adolescent meets criteria for developmental disability diagnosis. To this end, the special needs teacher will be asked to provide us with a list of the student's name and respective diagnosis, which this teacher will then sign. We therefore require written parental consent, as outlined upon the consent forms the primary caregivers will receive with their questionnaires, in order to obtain this information from the special needs teacher. We will not directly access any assessment reports from your school board, but will only ask that the special needs teacher provide us with the diagnosis of the adolescent based on reports in the Ontario School Record (OSR).

In regards to recruiting primary caregivers of adolescents with developmental disabilities, the following procedure will be used. Each special needs teacher at the elementary and secondary level will be forwarded letters outlining the study. These teachers will also be provided with cover letters to be sent home with adolescents in their classes. We are looking for the primary

caregivers of the adolescents in each special needs class to participate. We need a total of about thirty primary caregivers. Interested participants will contact the primary researcher by e-mail or telephone, at which time the primary researcher will thank them for participating in the study, as well as answer any questions they may have about the study. After obtaining the names of the adolescent's whose primary caregivers are participating, as well as the addresses of participants, the same cover letter used in recruiting these participants, four questionnaires, consent forms to access diagnostic information, and an informed consent form will be mailed to participants. Included in these documents will be a self-addressed stamped envelope, which participants may use to forward the documents to the primary researcher at Lakehead University. Upon obtaining the names of the adolescents whose primary caregivers are participating in the study, the primary researcher will contact their special needs teacher via telephone, in order for diagnostic reports to be accessed in writing the list of adolescent's names and respective diagnosis, to be forwarded to the primary researcher. However, the primary researcher will tell the special needs teacher not to inform her as to this diagnostic information until the primary researcher has received the primary caregiver's consent forms.

To access primary caregivers of "normal" adolescents the following procedure will be followed. Within each school that has a special needs class, letters will be sent to teachers of one regular class at each grade level (e.g., grades six to twelve). These teachers will then be provided with cover letters for the adolescents in the class. We are looking for the primary caregivers of the adolescents in each class to participate. We need a total of about 30 primary caregivers. Interested primary caregivers will then contact the primary researcher by e-mail or

telephone, at which time the primary researcher will thank them for participating in the study, and answer any questions they may have about the study. After obtaining the addresses of participants, the primary researcher will mail out the same cover letter used in recruiting these participants, four questionnaires, and an informed consent form. Included in these documents will be a self-addressed stamped envelope which participants may use in forwarding the documents to the primary researcher at Lakehead University, once they have been completed.

There is no significant risk of harm to the teacher, primary caregiver, or adolescent by participating in this study. It is expected that parents/guardians may learn about various strengths and functioning related to their adolescent's diagnosis which they may not have previously been aware. They may also learn more about some behavioural difficulties associated with their adolescent's diagnosis.

The responses to the questionnaires that primary caregivers provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies the primary caregiver or their adolescent will be separated from their questionnaires, and stored in a separate secure file. Primary caregiver consent is completely voluntary. If at any time the primary caregiver wishes to withdraw, he/she is free to do so without any consequence.

Upon completion of this research in the next few months, participants are entitled to receive a summary of results. If you wish access to those results, or have any questions about the study, you may contact myself through telephone at 807-344-7951, or e-mail at

kfilbert@lakeheadu.ca. You may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

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Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

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Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix V. Letter forwarded to Special Needs Teachers of Elementary and Secondary Schools in the Public Board

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Teacher;

We are interested in positive emotions/behaviour, adaptive functioning, and behavioural problems in adolescents that may contribute to more adaptive functioning in their life situations.

Research has indicated that the assessment of strengths may contribute to the resolution of several difficulties. Currently, some uncertainty surrounds the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is a lack of information concerning strengths within this diagnostic category. The intent of this research study is to:

(1) assess adolescent's individual strength areas, adaptive functioning, and behavioural difficulties; and

(2) apply strength profiles, in particular, to differentiate between autism spectrum disorders, developmental disabilities and adolescents without these diagnoses.

In your particular class, we would be looking for primary caregivers whose adolescents have a diagnosis of Developmental Disability (DD). To accomplish this goal, we ask that you send adolescents in your class home with the cover letters included, so that interested primary caregivers (e.g., parents/guardians) may contact myself in order to take part in this study. To this end, all primary caregivers will complete **four questionnaires** in reference to their

adolescent's behaviours, emotions, and thinking. There are no right or wrong answers to these questions. We are interested in learning primary caregiver views of their adolescent's behaviours, emotions, and thinking. It may take a maximum of two hours to complete the questionnaires.

Furthermore, we require that you inform us as to the diagnosis that the primary caregiver's adolescent has received, in order to ensure that the adolescent meets criteria for developmental disability diagnosis. To this end, we require that you provide us with a list of the student's name and respective diagnosis, which you will then sign. We therefore require written parental consent, as outlined upon the consent forms the primary caregivers will receive with their questionnaires, in order to obtain this information. We will not directly access any assessment reports from you, but will only ask that the you provide us with the diagnosis of the adolescent based on reports in the Ontario School Record (OSR).

In regards to recruiting primary caregivers of adolescents with developmental disabilities, the following procedure will be used. You will be forwarded letters outlining the study by your principal. You will also be provided with cover letters to be sent home with adolescents in your class. We are looking for the primary caregivers of the adolescents in each special needs class to participate. We need a total of about thirty primary caregivers. Interested participants will contact the primary researcher by e-mail or telephone, at which time the primary researcher will thank them for participating in the study, as well as answer any questions they may have about the study. After obtaining the names of the adolescent's whose primary caregivers are participating, as well as the addresses of participants, the same cover letter used

in recruiting these participants, four questionnaires, consent forms to access diagnostic information, and an informed consent form will be mailed to participants. Included in these documents will be a self-addressed stamped envelope, which participants may use to forward the documents to the primary researcher at Lakehead University. Upon obtaining the names of the adolescents whose primary caregivers are participating in the study, the primary researcher will contact you via telephone, in order for diagnostic reports to be accessed in writing the list of adolescent's names and respective diagnosis, to be forwarded to the primary researcher. However, the primary researcher will tell you not to inform her as to this diagnostic information until the primary researcher has received the primary caregiver's consent forms.

There is no significant risk of harm to yourself, the primary caregiver, or their adolescent by participating in this study. It is expected that the primary caregiver may learn about various positive behaviours and emotions related to their adolescent's diagnosis of which, he/she may not have previously been aware. The primary caregiver may also become more aware of some behavioural difficulties associated with their adolescent's diagnosis.

The responses to the questionnaires that primary caregivers provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies the primary caregiver or their adolescent will be separated from their questionnaires, and stored in a separate secure file. Primary caregiver consent is completely voluntary. If at any time the primary caregiver wishes to withdraw, he/she is free to do so without any consequence.

Upon completion of this research in the next few months, primary caregivers are entitled to receive a summary of results. If you wish access to those results, or have any questions about the study, you may contact myself through telephone at 807-344-7951, or e-mail at **kfilbert@lakeheadu.ca.** You may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

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Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

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Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix W. Cover Letter Sent to Primary Caregivers of Adolescents with Developmental Disabilities

PLEASE CONTACT BY FEBRUARY 21, 2005

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Parent or Guardian;

We are interested in positive feelings/behaviour, adaptive functioning, and behavioural problems in your adolescent that may describe the way your adolescent deals with day-to-day challenges.

Research has shown that looking at strengths may help to resolve many difficulties. Also, there is some uncertainty in the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is not a lot of information about strengths of individuals with these diagnoses. The purpose of this research study is to:

(1) look at adolescent's individual strength areas, adaptive functioning, and behavioural difficulties, and;

(2) use strengths to tell the difference between autism spectrum disorders, developmental disabilities, and adolescents without these diagnoses.

To accomplish this goal, we will ask that you complete **four questionnaires** about your adolescent's behaviours, feelings, and thinking. There are no right or wrong answers to these questions. We are interested in learning your views of your adolescent's behaviours, feelings, and thinking. It may take a maximum of two hours to finish the questionnaires.

PLEASE CONTACT BY FEBRUARY 21, 2005

There is no significant risk of harm to your adolescent's teacher, yourself, or your adolescent by participating in this study. It is expected that you may learn about various positive behaviours and feelings related to your adolescent, of which, you may not have previously known. You may also learn more about some behavioural difficulties associated with your adolescent.

The responses to the questionnaires that you provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies yourself or your adolescent will be separated from your questionnaires, and stored in a separate secure file. Your consent is completely voluntary. If at any time you wish to withdraw, you are free to do so without any consequence.

Upon completion of this research in the next few months, you are also entitled to receive a summary of results for your adolescent's group ("normal" group). If you are interested in participating in this study, you may contact myself through telephone at 807-344-7951, or e-mail at **kfilbert@lakeheadu.ca.** If you have any questions, you may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

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Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

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Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix X. Instructional Page forwarded to Primary Caregivers of "Normal" Adolescents and Adolescents with Developmental Disabilities

To whom it may concern,

Thank you for participating in our study. Your input is highly valued and greatly appreciated. Please sign the **informed consent form** and complete the **four questionnaires** enclosed (the Behavioural and Emotional Rating Scale [BERS]; the Child Behavior Checklist [CBCL]; the Strength Assessment Inventory [SAI]; and the Adaptive Behavior Assessment System [ABAS]). When you have signed the informed consent form, and completed the questionnaires, please put them inside the folded envelope enclosed (postage has already been paid), and mail to the address on the front of the envelope. Please write your address on the left corner of the envelope, or on the envelope flap. If you prefer, you can return this envelope with your informed consent form and four questionnaires to your adolescent's school. School personnel will ensure that the envelope is mailed to the address on the envelope. Again, thank you for participating in our study, and please feel free to contact either myself or Dr. Edward Rawana if you have any questions.

Sincerely,

_____

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix Y. Letter forwarded to Teachers of "Normal" Adolescents of Elementary and Secondary Schools in the Public Board

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Teacher;

We are interested in positive emotions/behaviour, adaptive functioning, and behavioural problems in adolescents that may contribute to more adaptive functioning in their life situations.

Research has indicated that the assessment of strengths may contribute to the resolution of several difficulties. Currently, some uncertainty surrounds the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is a lack of information concerning strengths within this diagnostic category. The intent of this research study is to:

(1) assess adolescent's individual strength areas, adaptive functioning, and behavioural difficulties; and

(2) apply strength profiles, in particular, to differentiate between autism spectrum disorders, developmental disabilities and adolescents without these diagnoses.

In your particular class, we would be looking for primary caregivers whose adolescents do not have a diagnosis of autism spectrum disorders or developmental disability. To accomplish this goal, we ask that you send each adolescent in your class home with the cover letters included, so that interested primary caregivers (e.g., parents/guardians) may contact myself in order to take part in this study. To this end, all primary caregivers will complete **four**

questionnaires in reference to their adolescent's behaviours, emotions, and thinking. There are no right or wrong answers to these questions. We are interested in learning primary caregiver views of their adolescent's behaviours, emotions, and thinking. It may take a maximum of two hours to complete the questionnaires.

To access primary caregivers of "normal" adolescents the following procedure will be followed. Within each school, letters to you will be sent to one class at each grade level (e.g., grades six to twelve) by your principal. You will then be provided with cover letters for each adolescent in the class. We are looking for the primary caregivers of adolescents to participate. We need a total of about 30 primary caregivers. Interested primary caregivers will then contact the primary researcher by e-mail or telephone, at which time the primary researcher will thank them for participating in the study, and answer any questions they may have about the study. After obtaining the addresses of participants, the primary researcher will mail out the same cover letter used in recruiting these participants, four questionnaires, and an informed consent form. Included in these documents will be a self-addressed stamped envelope which participants may use in forwarding the documents to the primary researcher at Lakehead University, once they have been completed.

There is no significant risk of harm to yourself, the primary caregiver, or their adolescent by participating in this study. It is expected that the primary caregiver may learn about various positive behaviours and emotions of their adolescent of which, he/she may not have previously been aware. The primary caregiver may also become more aware of some behavioural difficulties that their adolescent may be experiencing.

The responses to the questionnaires that primary caregivers provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies the primary caregiver or their adolescent will be separated from their questionnaires, and stored in a separate secure file. Primary caregiver consent is completely voluntary. If at any time the primary caregiver wishes to withdraw, he/she is free to do so without any consequence.

Upon completion of this research in the next few months, primary caregivers are entitled to receive a summary of results. If you wish access to those results, or have any questions about the study, you may contact myself through telephone at 807-344-7951, or e-mail at **kfilbert@lakeheadu.ca.** You may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

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Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

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Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix Z. Cover Letter Sent to Primary Caregivers of "Normal" Adolescents

The Assessment of Strength-Based Functioning, Behavioural Problems, and Adaptive Functioning in Adolescents with Autism Spectrum Disorders and Developmental Disabilities

Dear Parent or Guardian;

We are interested in positive feelings/behaviour, adaptive functioning, and behavioural problems in your adolescent that may describe the way your adolescent deals with day-to-day challenges.

Research has shown that looking at strengths may help to resolve many difficulties. Also, there is some uncertainty in the diagnosis of autism spectrum disorders and developmental disabilities. Furthermore, there is not a lot of information about strengths of individuals with these diagnoses. The purpose of this research study is to:

(1) look at adolescent's individual strength areas, adaptive functioning, and behavioural difficulties, and;

(2) use strengths to tell the difference between autism spectrum disorders, developmental disabilities, and adolescents without these diagnoses.

To accomplish this goal, we will ask that you complete **four questionnaires** about your adolescent's behaviours, feelings, and thinking. There are no right or wrong answers to these questions. We are interested in learning your views of your adolescent's behaviours, feelings, and thinking. It may take a maximum of two hours to finish the questionnaires.

There is no significant risk of harm to your adolescent's teacher, yourself, or your adolescent by participating in this study. It is expected that you may learn about various positive behaviours and feelings related to your adolescent, of which, you may not have previously known. You may also learn more about some behavioural difficulties associated with your adolescent.

The responses to the questionnaires that you provide will be kept confidential. The information will be held in a locked cabinet at Lakehead University for a period of seven years. Any information that identifies yourself or your adolescent will be separated from your questionnaires, and stored in a separate secure file. Your consent is completely voluntary. If at any time you wish to withdraw, you are free to do so without any consequence.

Upon completion of this research in the next few months, you are also entitled to receive a summary of results for your adolescent's group ("normal" group). If you are interested in participating in this study, you may contact myself through telephone at 807-344-7951, or e-mail at **kfilbert@lakeheadu.ca.** If you have any questions, you may also contact Dr. Edward Rawana at 807-343-8453.

Sincerely,

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Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

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Katharine Filbert, Masters of Arts Candidate, Clinical Psychology

Appendix a. Informed Consent Form for Primary Caregivers of "Normal" Adolescents

My signature on this form indicates whether or not I agree to participate in a study by Katharine Filbert and Dr. Edward Rawana on the measurement of strengths, adaptive functioning, and behavioural problems in my adolescent, and it also indicates that I understand the following:

1. If I participate, I will complete four questionnaires about my adolescent's behaviours, feelings, and thinking, that will take a maximum of two hours to complete.
2. If I participate, I am a volunteer and I can withdraw at any time from the study.
3. If I participate, there is no significant risk of physical or psychological harm to either myself or my adolescent.
4. If I participate, the data provided by myself will be confidential.
5. If I participate, I will receive a summary of the results of the study, upon request, following the completion of the study.
6. The data will be held in a locked cabinet at Lakehead University for a period of seven years, and any information that identifies myself or my adolescent will be stored separate and secure from the questionnaires.

Please check the line below:

_____ I agree to participate.

_____ _____

Name of Adolescent (Please Print) Name of Parent or Guardian (Please Print)

_____

Signature of Parent or Guardian Date

Signature of Researcher Date

Katharine Filbert, Masters of Arts Candidate, Clinical Psychology Date

Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology Date

Appendix b. Accompanying Questionnaire Note

Dear Parent or Guardian;

Please note that the terms "child" and "adolescent" are used interchangeably in the accompanying questionnaires (the Behavioural and Emotional Rating Scale [BERS]; the Strength Assessment Inventory [SAI]; the Child Behavior Checklist [CBCL]; and the Adaptive Behavior Assessment System [ABAS]).

Sincerely,

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Dr. E. Rawana, C. Psych., Assistant Professor, Department of Psychology

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Katharine Filbert, Masters of Arts Candidate, Clinical Psychology