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Assessment of Strength Profiles in Adolescents and the Relationship to Mental Health Concerns

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Abstract

The purpose of the proposed investigation was to advance our understanding of the strengths concept in the adolescent population. The relationship between adolescent strengths and mental health, and individual differences in the strengths and mental health relationship were explored. The secondary purpose of the present study was to empirically validate the Strength Assessment Inventory (SAI) for Children and Adolescents. One hundred and thirty youth were recruited through the Lakehead Public School Board and the Children's Centre Thunder Bay. Each participant completed a battery of questionnaires, and additional questionnaires were completed by parents or guardians. It was hypothesized that there would be an inverse relationship between strengths and mental health concerns, and that this relationship would be moderated through other variables. Results were largely consistent with this prediction. Strength scores were negatively correlated with mental health scores, and sex was identified as a moderator in the relationship between strengths and mental health. Results also suggest that the newly developed SAI is a psychometrically robust instrument. Clinical implications of these findings are discussed in relation to the prevention, assessment, and treatment of mental health disorders among the adolescent population.

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Assessment of Strength Profiles in Adolescents and the Relationship to Mental Health Concerns

Mental illness is a growing public health concern that affects people of all ages. The Canadian Mental Health Association (CMHA) reports that approximately eighteen percent of Canadian youth have a diagnosable mental disorder and that many more are at risk for developing mental illness later in life (CMHA, 2012). Moreover, the onset of most mental disorders occurs in adolescence and young adulthood (CMHA, 2004; American Psychiatric Association, 2013).

The individual and social costs associated with mental illness are staggeringly high. For instance, annual economic costs associated with mental illness in Canada are estimated to be more than $50 billion (Smetanin et al., 2011). An even more alarming cost associated with mental illness in Canada is suicide. Suicide is one of the leading causes of death among Canadian youth (Statistics Canada, 2010).

Given the magnitude of this public health concern, more research examining prevention, assessment, and treatment approaches is needed. Enhancing our current strategies for identifying and treating at-risk youth will lead to a reduction in the economic and social costs of mental illness in this population. Furthermore, research has shown that early identification of high-risk youth and early implementation of intervention strategies tailored to the client's unique strengths and needs, can significantly benefit children and adolescents with mental health challenges (Hibbs & Jensen, 2005; Report of the Surgeon General's Conference on Children's Mental Health, 2000).

In this paper, recent trends in the assessment and treatment of youth with mental health concerns will be reviewed. Specifically, the positive psychology movement and the

application of strength-based strategies will be discussed, followed by a discussion of strength-based assessments. Existing measures of youth strengths (including the Behavioral and Emotional Rating Scale, Epstein & Sharma, 1998) will be presented and a recently developed measure (the Strength Assessment Inventory, Rawana, Brownlee, & Hewitt, 2006) will be introduced. Finally, this paper provides a review of the literature looking at the relationship between strengths and mental health, as well as individual differences in this relationship.

Positive Psychology Movement

Historically, mental health service providers have taken a problem-focused approach in assessing and treating children and adolescents with mental health concerns. The problem-focused approach attends to client deficits, functional difficulties, as well as emotional and behavioral symptoms (Tedeschi & Kilmer, 2005). These approaches are based on a disease model of mental health, in which well-being is defined by the absence of negative symptoms (Park & Peterson, 2008). From an evolutionary standpoint, a problem-focused approach makes sense since a client's problems (negative emotions and experiences) usually represent current crises or immediate concerns (Seligman & Csikszentmihalyi, 2000). Patients typically seek mental health services when these negative emotions and experiences become overwhelming. As a result, mental health professionals focus instinctively on addressing the negative symptoms, and neglect existing positive attributes.

In other words, treatment efforts have traditionally centered on fixing what is wrong, rather than nurturing existing strengths. More recently, the treatment literature has seen a heightened interest in assessment and treatment approaches based on clients'

positive attributes. This paradigm shift has been coined "the positive psychology movement."

The positive psychology movement is based on the premise that psychology should not only study weaknesses and pathology, but strengths and wellness in an attempt to help people. The complexity of human behaviour provides the rationale for incorporating positive psychology in planning services. Human behaviour is not limited to dysfunctions and problems. The study of human behaviour, therefore, should not be limited to examining pathology, but should also examine positive human functioning. Rather than limiting treatment to fixing what is wrong, amplify strengths. Identifying and cultivating individual strengths will result in a balanced understanding of the individual and identify assets within an individual that could be used to help resolve problems.

Positive psychology has recently received a great deal of research attention- both supportive and critical. Criticisms of the positive psychology movement appear to deal with the application of the positive psychology message and how some proponents of the positive psychology movement communicate it, rather than theoretical components of the movement itself (Held, 2004).

For instance, some proponents of the movement support the notion that positive psychology represents a unique discipline and should consequently be considered a separate science from the rest of psychology (Seligman & Csikszentmihalyi, 2000). Spokespersons of this separatist view maintain that, in psychology, positivity is good and negativity is bad. Negative psychology is dismissed as an undesirable by-product of positive psychology. This narrow view is not only unrealistic, but contributes to the

fragmentation issues associated with the field of psychology, and specifically, with the positive psychology movement (Held, 2004; Rashid, 2009).

The polarized separatist view represents a narrow application of positive psychology (Held, 2004). The narrow view neglects individual differences and the importance of negative life experiences in the psychology of human behaviour. Negativity represents a normal and sometimes adaptive component of human experiences (Held, 2004). A more holistic understanding of human behaviour is needed which incorporates both positive and negative experiences. Psychologists incorporating positive psychology into practice would benefit by accentuating client strengths and positive experiences, but must not neglect negative experiences.

In general, there appears to be concern that the pendulum may swing too far from an overly problem-focused approach to an unrealistically positive approach to assessment and treatment. While it is important to be mindful of the criticisms made regarding positive psychology initiatives, it is also important to recognize the potential of strengths-focused interventions to promote more positive outcomes (Buckley & Epstein, 2004; Jimerson, Sharkey, Nyborg, & Furlong, 2004). In contrast to the traditional problem-focused approach, a non-polarized application of the positive psychology message proposes a more holistic approach in which focus is also placed on strengths.

Originally proposed by Wieck, Rapp, Sullivan, and Kisthardt (1989), the term "strengths perspective" has since been incorporated into many disciplines as a framework for working with children and adolescents (Jimerson et al., 2004). In concurrence with the positive psychology principles, a strength-based approach to treatment emphasizes clients' positive attributes. Rather than focusing on what is wrong with children, strength-based

perspectives seek to identify and amplify existing strengths or provide opportunities to develop new strengths (Seligman & Csikszentmihalyi, 2000). These resources and abilities can then be incorporated into treatment plans to help bring about positive treatment outcomes.

Epstein and Sharma (1998) described strengths as a set of skills, competencies, and characteristics that contribute to coping, relationships, and development. Brownlee and Rawana (2006) broadened this definition by describing strengths as a set of competencies and characteristics valued both by the individual and society. Strengths represent an internalization of development and positive growth in a number of life domains. Although external variables imposed on the child may be beneficial and improve quality of life (such as health and family socio-economic status), strengths refer to those characteristics that currently reside within the individual. These internalized strengths encompass positive characteristics intrinsic to the individual (such as creativity and sense of humour), as well as factors resulting from an individual's interaction with his or her environment (such as positive peer interactions and community involvement). A strength-based paradigm recognizes that all children have internalized strengths, but may not have had the opportunities to identify and develop these strengths (Buckley & Epstein, 2004). Understanding and cultivating these strengths has been shown to play an integral role in enhancing treatment protocols for children and adolescents (Oswald, Cohen, Best, Jenson & Lyons, 2001).

Strength-based assessment and treatment approaches have been described as holistic and optimistic alternatives to the traditional deficit-based perspectives (Rhee, Furlong, Turner, & Harari, 2001). For instance, while a primarily deficit-based assessment

may be limited in the range of information it can provide, incorporating a strength-based assessment offers a more balanced understanding of children and adolescents (Reid, Epstein, Pastor, & Ryser, 2000; Rhee et al., 2001; Tedeschi & Kilmer, 2005). Strength-based assessments provide a wealth of information about the child's competencies and resources that is missing from a narrow deficit-based assessment. This additional information provides a more comprehensive understanding of the youth that, in turn, contributes to more informed and effective intervention and treatment plans (Buckley & Epstein, 2004; Epstein, Hertzog, & Reid, 2001; Jimerson et al., 2004; Reid et al., 2000; Tedeschi & Kilmer, 2005).

Strength-based orientations also offer a number of positive relational advantages over the traditional deficit-based approach. The traditional deficit-based approach tends to over-emphasize an adolescent's negative traits, and as a result, has the potential to do harm by negatively biasing how the adolescent is perceived (Rashid & Ostermann, 2009). The negative bias resulting from deficit-based approaches has been described as a "two-pronged self-fulfilling prophecy" (Snyder, Ritschel, Rand, & Berg, 2006). In other words, focusing the assessment process on negative labels may encourage youth to act in accordance with those labels, and encourage mental health professionals to proceed in a manner that confirms the negative labels. A strength-based orientation, on the other hand, encourages clinicians to have a more balanced perception of youth. When adolescents are made aware of their strengths, they also think more positively of themselves, and tend to make behavioural decisions accordingly (Park & Peterson, 2008). Hersh (2008) examined the impact of strength-based assessment among a small group of children, and found that

the intervention increased participants' recognition of their personal strengths as well as self-reported hope.

Focusing on a child's positive attributes also results in increased positive communication and enhanced positive rapport between the child and the mental health care worker (Buckley & Epstein, 2004; Tedeschi & Kilmer, 2005). Enhanced positive rapport may encourage the child's engagement in the treatment process, increase cooperation and motivation, and improve treatment compliance (Clark, 1997). Providing children with an increased awareness of their personal strengths can also empower youth and increase their self-esteem, which further enhances motivation and treatment compliance (LeBuffe & Shapiro, 2004; Park & Peterson, 2008; Rhee et al., 2001; Tedeschi & Kilmer, 2005).

A second relational advantage of the strength-based approach is increased collaboration between the parent and the mental health care worker (Buckley & Epstein, 2004; LeBuffe & Shapiro, 2004). Typically, parents are initially engaged in discussions centered around the problems their child is presenting with. Parents often experience feelings of shame or guilt while discussing their child's emotional or behavioural deficits. Focusing on the child's positive attributes, on the other hand, may help to alleviate the parent's shame or guilt and subsequently increase the parent's cooperation in the treatment process (LeBuffe & Shapiro, 2004). In this way, the strength-based approach complements a pathology-based framework by providing a positive foundation for a more effective working relationship. Finally, the relationship between the parent and the child may improve when the focus of communication is on the child's positive characteristics and behaviours, rather than on what the child is doing wrong (Buckley & Epstein, 2004).

Another theoretical advantage of the strength-based approach is the emphasis on a child's internal resources. Research has consistently demonstrated that when children leave the structured environments of inpatient treatment programs, their home environments often fail to support the changes made while in treatment (Lietz, 2004). As a result, treatment gains are frequently lost following discharge (Nickerson, Salamone, Brooks, & Colby, 2004). Treatment approaches designed to identify and enhance a child's internal resources, however, counteract this negative effect. Highlighting and developing a child's strengths can empower the child to take responsibility and to become more active in the treatment process (Jimerson et al., 2004). Because children learn to rely on internal strengths rather than the structure of the treatment environment, the likelihood of experiencing success following treatment is increased (Nickerson et al., 2004).

Beyond the theoretical advantages of the strength-based approach, a number of practical advantages have been proposed. For instance, strength-based assessments can be used to evaluate treatment outcomes (Buckley & Epstein, 2004; Tedeschi & Kilmer, 2005). Strength-based interventions can also contribute to preventative efforts by precluding the development of mental health problems or reducing the severity and pervasiveness of symptoms (LeBuffe & Shapiro, 2004). While the problem-focused approach cannot be implemented prior to the emergence of symptomatic behaviours, the strength-based approach can identify areas of reduced skills or competencies and incorporate intervention strategies to enhance strengths in those areas before symptoms develop (Albrecht & Braaten, 2008; LeBuffe & Shapiro, 2004). Positive psychology proposes that strengths may act as buffers, protecting people against mental illnesses (Seligman & Csikszentmihalyi, 2000). Moreover, while strength-based interventions can help to alleviate existing mental

health concerns as well as contribute to the prevention of mental health concerns, these intervention techniques can also benefit nonclinical individuals who want to make their lives more fulfilling (Brownlee, Rawana, & MacArthur, 2012; Park & Peterson, 2006; Rashid, 2009).

The theoretical and practical advantages of focusing on positive attributes lend considerable support to the strength-based approach to case management. Recently, strength-based approaches have also garnered considerable empirical support in a variety of programs, including those designed to improve school functioning (Austin, 2005; Rawana, et al., 2009), maximize adolescent health care (Duncan et al., 2007), decrease bullying victimization (Rawana, Norwood, & Whitley, 2011), and reduce the impact of behavioural problems and mental health disorders (Bromley, Johnson, & Cohen, 2006; Brownlee, Rawana, MacArthur, & Probizanski, 2009; Gensterblum, 2002; Johnson, 2003; Murray & Belenko, 2005). With respect to mental health concerns, it has been suggested that intervention programs aimed at identifying and enhancing strengths can reduce negative symptomatology in children and adolescents better than, or as well as, deficit-based intervention programs (Park & Peterson, 2008; Rudolph & Epstein, 2000).

For instance, Johnson (2003) examined the effect of a strength-based intervention program on treatment retention and treatment success. Treatment aimed to foster interpersonal strengths, strengths in personality, and strengths in family functioning. Researchers found that the strength-based intervention program resulted in higher treatment retention rates, a decrease in the number of required treatment sessions, and increased competencies post-treatment.

Strength-based Assessments

In light of the growing interest in the strength-based approach, researchers are calling for the development and empirical validation of standardized strength-based assessment measures (Epstein, Dakan, Oswald, & Yoe, 2001; Graybeal, 2001; Jimerson et al., 2004; LeBuffe & Shapiro, 2004; Oswald et al., 2001). A strength-based assessment is the standardized measurement of skills, competencies, and positive characteristics within an individual. Specifically, Epstein and Sharma (1998) provided the following definition:

> Strength-based assessment is defined as the measurement of those emotional and behavioural 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)

The clinical utility of a strength-based assessment is founded on the beliefs that all children have strengths and that the failure of youth to demonstrate certain strengths does not imply an inherent deficit within that child. Rather, it is presumed that the child has not been provided the necessary life experiences and opportunities to develop the certain skills or characteristics (Epstein, Dakan, et al., 2001; Epstein & Sharma, 1998). Accordingly, strength-based assessments are designed to identify existing strengths in children and adolescents, and subsequent strength-based intervention programs help to enhance and cultivate undeveloped skills and competencies.

Until recently, the assessment of youth strengths relied primarily on informal unstructured interviews (Jimerson et al., 2004; Rhee et al., 2001). While an abundance of empirical attention focused on establishing the psychometric properties of deficit-based

assessment measures, the standardization of strength measures was neglected (Epstein, 1999; Tedeschi & Kilmer, 2005).

Some of the deficit-based assessment measures have begun to include attention to strengths, but only as secondary to the assessment of symptoms and problem behaviors (Epstein, Ryser, & Pearson, 2002; Graybeal, 2001; Tedeschi & Kilmer, 2005). For instance, the Strength and Difficulties Questionnaire (SDQ) (Goodman, 1997) and the Behavioral Assessment Scale (BASC) (Reynolds & Kamplaus, 1992) are commonly used assessment tools designed to measure a child's deficits as well as strengths. Until recently, few empirically sound, well-developed measures existed that focused primarily on strengths (Epstein, Ryser, et al., 2002; LeBuffe & Shapiro, 2004; Rhee et al., 2001; Tedeschi & Kilmer, 2005). Some instruments that have been specifically designed to assess strengths are narrow in focus. They measure only specific competencies and skills in youth. For example, the Social Skills Rating System (SSRS) (Gresham & Elliot, 1990) measures social skills and academic competence of students from ages 3 through 18 years.

Although these assessment tools have been helpful in advancing the empirical assessment of strengths in youth, they were not specifically designed to assess strengths and are limited by the number and range of strengths examined (Buckley & Epstein, 2004). The Behavioral and Emotional Rating Scale (BERS, Epstein & Sharma, 1998) was designed to address this gap in the treatment literature, by providing a systematic and comprehensive measure of youth strengths.

The Behavioral and Emotional Rating Scale

The BERS is a strength-based assessment tool specifically designed to measure the emotional and behavioral strengths of children 5 to 18 years of age (Epstein & Sharma,

1998). It was the first widely published, empirically validated child and adolescent assessment tool focused solely on the measurement of strengths. Numerous studies have been conducted to establish the reliability and validity of the BERS. Initially, the instrument was normed on a large sample of children and adolescents with and without emotional and behavioural disorders (Epstein & Sharma, 1998). Content validation was then established through a systematic item selection process and factor analyses were conducted to determine the final five factorial structure of the BERS (Epstein, 1999). The resulting scale included the following dimensions: interpersonal strengths, affective strengths, family involvement, school functioning, and intrapersonal strengths.

Subsequent studies revealed moderate to high convergent validity of the BERS with various school-age populations, and with a number of similar measures (Harniss, Epstein, Ryser, & Pearson, 1999; Epstein, Nordness, Nelson, & Hertzog, 2002; Trout, Ryan, La Vigne, & Epstein, 2003). For instance, Harniss and colleagues (1999) demonstrated convergent validity by comparing the BERS with two other validated self-report measures. They found BERS strengths scores were positively correlated with scores on the Walker-McConnell Scale of Social Competence and School Adjustment-Adolescent Version (Walker & McConnell, 1995), and reported moderate to high negative correlations between BERS strengths scores and problem scores obtained from the Achenbach's Teacher Report Form (Achenbach, 1991).

Adequate test-retest reliability of the BERS was also confirmed. Short-term (Epstein, Harniss, Pearson, & Ryser, 1999) and long-term test-retest reliability (Epstein, Hertzog, et al., 2001) suggest that BERS scores are relatively stable over time. Finally, Friedman, Leone, and Friedman (1999) determined that the BERS scores were also stable

across raters, by demonstrating consistency of reporting strengths by teachers and parents. The results from these studies suggest that the BERS possesses very good psychometric properties.

Recent research indicates that the Behavioral and Emotional Rating Scale-Second Edition (BERS-2, Epstein, 2004) is also psychometrically sound. While the original version was designed for use by teachers and mental health care professionals, the BERS-2 includes three scales: a Teacher Rating Scale, a Parent Rating Scale, and a Youth Rating Scale. Synhorst, Buckley, Reid, Epstein, and Ryser (2005) examined the reliability of the BERS-2 rating scales, and found consistency of reporting strengths by youth and parents. Test-retest reliability was also demonstrated for the BERS-2 Parent Rating Scale (Mooney, Epstein, Ryser, & Pierce, 2005) as well as the BERS-2 Youth Rating Scale (Epstein, Mooney, Ryser, & Pierce, 2004). Finally, scores on the BERS-2 Parent and Youth Rating Scales showed moderate to high correlations with corresponding scores on the Social Skills Rating System (Gresham & Elliot, 1990) and Achenbach's Child Behavior Checklist (Achenbach, 1991), thus establishing the convergent validity of the measure (Epstein, et al., 2004; Mooney, et al., 2005).

While the BERS is the most widely documented strength-based assessment tool available, a few other strength-based assessment tools are also worth noting. For instance, the Values in Action Inventory for Youth (VIA-Youth, Park & Peterson, 2005) is a self-report survey suitable for youth between 10 and 17 years of age. The tool measures 24 strengths, with an emphasis on morally valued strengths of character. Reliability of the VIA-Youth is poor in terms of consistency between raters, but the tool scores high on tests of internal

consistency and test-retest reliability (Park & Peterson, 2006). The VIA-Youth also appears to have adequate convergent validity and construct validity (Park & Peterson, 2006).

The Child and Adolescent Strengths Assessment Scale (CASA, Lyons, Kisiel, & West, 1997) is another assessment tool that was developed in response to the growing strengths movement. The CASA is a 30-item rater-report measure that assesses six dimensions of strengths (family, school/vocational, psychological, peer, moral/spiritual, and extracurricular) for youth 3 to 18 years of age. Although the CASA appears to have adequate internal reliability, concurrent validity, and content validity (Lyons, Uziel-Miller, Reyes, & Sokol, 2000), additional research is required in order to confirm that the CASA is a psychometrically sound instrument.

Shortly following the development of the CASA, the same group of researchers developed another tool that assessed both strengths and symptoms. The Child and Adolescent Needs and Strengths scale (CANS, Lyons, 1999) is an integrative tool designed to assist in the planning of services for children and their families. The CANS assesses needs and strengths across the following dimensions: problem presentation, risk behaviors, functioning, child safety, family/caregiver needs and strengths, and individual strengths. Research examining the psychometric properties of the measure indicate that the CANS is a valid and reliable tool (Anderson, Lyons, Giles, Price, & Estle, 2003; Lyons, Weiner, & Lyons, 2004).

Despite the substantial contribution these measures have made to the strength movement, the development of strength-based assessment approaches is still in its infancy. Given the growing interest in the strengths approach to case management, more research attention on the assessment of youth strengths is needed.

The Strength Assessment Inventory

Another strength-based assessment tool that has recently been developed is the Strength Assessment Inventory (SAI; Rawana, Brownlee, & Hewitt, 2006). The SAI was originally developed by Rawana, Cryderman, and Thompson (2000). The categories for this measure were derived from the Ministry Risk/Need Assessment Form (MRNAF) (Hoge, Andrews, & Leschied, 1994), also known as the Youth Level of Service/Case Management Inventory (YLS/CMI) (Hoge & Andrews, 2002; Hoge, Andrews, & Leschied, 2002). The YLS/CMI is currently used to measure the risk/need levels in young offenders in the province of Ontario. The YLS/CMI consists of 42 items that assess eight domains of risk/need: prior and current offences/dispositions, family circumstances/parenting, education/employment, peer relations, substance abuse, leisure/recreation, personality/behavior, and attitudes/orientation.

Researchers recently established the initial validation of this risk/need assessment measure. Jung and Rawana (1999) examined the degree to which level of risk (as measured by the YLS/CMI) differentiated recidivists from nonrecidivists among a sample of 263 juvenile offenders. Recidivism was defined as any offence committed up to 6 months after the assessment. Results indicated that the overall risk/need score, as well as each of the eight risk/need factors, significantly differentiated between recidivists and nonrecidivists. Costigan and Rawana (1999) followed the same group of juvenile offenders, and found that the YLS/CMI measure of risk continued to predict recidivism 2 years following the risk assessment. Further support for the predictive validity of the YLS/CMI was found in a more recent study by Schmidt, Hoge, and Gomes (2005). Schmidt and colleagues found that high scores on the YLS/CMI were significantly associated with

higher rates of recidivism and decreased time to reoffend, in a sample of 107 juvenile offenders. In addition, the study by Schmidt and colleagues demonstrated that the YLS/CMI possesses moderate to strong levels of internal consistency and excellent inter-rater reliability.

In accordance with the recent paradigm shift in psychology away from a deficit-based approach to a focus on youth strengths, researchers began to examine the utility of strengths as an alternative to risks in the prediction of recidivism. Since increases in risks were found to predict increased recidivism (Costigan & Rawana, 1999; Jung & Rawana, 1999; Schmidt et al., 2005), it was hypothesized that increases in strengths would predict a decrease in rates of recidivism. Although strengths are not the opposite of risks, they do represent separate processes of development and functioning, and reflect areas in life where some positive things are happening. Strengths represent an internalization of development and positive growth in a number of life domains. The expression and interpretation of these internalized strengths is determined, in large part, by the culture and the environment in which an individual resides. Therefore, the definition that is adopted and used for the present study is that strengths are "a set of developed competencies and characteristics that is valued both by the individual and society, and is embedded in culture" (Rawana & Brownlee, 2009, p. 256).

In order to capitalize on the potential utility of strengths in this area, a systematic measure of youth strengths (the SAI) was developed. The SAI was initially developed to complement the risk/need assessment for young offenders. Given the effectiveness of the practical domains of functioning identified in the YLS/CMI, a number of these same domains were used in the development of the SAI. These domains represent areas of

functioning that youth engage in on a regular basis (Brownlee & Rawana, 2006). Individual items were modified to reflect strengths in each of the SAI's six domains: family circumstances/parenting, education, peer relations, leisure/recreation, personality/behavior, and attitudes/orientation. For example, "problems with teacher relations" was changed to "positive relationship with school staff" in the education domain, and "no personal interests" was changed to "plays a musical instrument" in the leisure and recreation domain.

More recently, the SAI underwent significant revisions. To identify and facilitate necessary revisions, Rawana, Brownlee, and Hewitt (2006) reviewed the existing literature and held a number of focus groups. Focus groups were developed in order to examine the content validity of individual items as well as the overall structure of the strength-based assessment tool. The focus groups were conducted with a number of researchers, psychologists, and social workers involved in treating children and adolescents. Professionals in these groups were also familiar with the advantages and theoretical components of a strength-based approach to treatment. Consultations and feedback sessions resulted in a number of modifications to the original SAI. The final assessment measure consisted of 116 items reflecting 10 areas of child and adolescent strengths: Family / Home Functioning, School Functioning, Employment, Leisure and Recreation, Peer Functioning, Personality Functioning, Personal and Physical Care, Community Involvement, Spiritual and Cultural Identity, and Current and Future Goals (Rawana et al., 2006).

The revised SAI (Rawana et al., 2006) is an independent clinical tool designed to assess strengths in youth, rather than being limited to use as a supplement of the risk/need assessment for young offenders. Completed by parents, teachers, health care workers, and

youth, the revised SAI evaluates the frequency of strengths exhibited by children and adolescents across multiple domains of day-to-day functioning, in both clinical and nonclinical settings. The SAI is a culturally sensitive tool, which assesses strengths within two major categories: Contextual Domains and Personal Development Domains. Contextual Domains refer to the environmental contexts in which a child interacts, and Personal Development Domains refer to contexts of individualized functioning (Brownlee et al., 2009).

The newly developed SAI is similar to the BERS-2 in a number of ways. First, both measures were developed in an effort to propel the strength-based movement in the management and treatment of children and adolescents. Second, in contrast to previous efforts to measure youth strengths, both measures focus primarily on and are theoretically derived from a strength-based orientation. Third, both the BERS-2 and the SAI conceptualize strengths in terms of skills, competencies, and characteristics, and employ an ecological orientation in the evaluation of youth strengths (Epstein & Sharma, 1998). In other words, these assessment tools evaluate strengths across various life domains and environments, rather than limiting the assessment of strengths to only one area of functioning. And finally, both tools include items that assess specific and observable skills or characteristics (Epstein & Sharma, 1998; Rawana et al., 2006). Given the similarities between the BERS-2 and the SAI it is reasonable to assume that, following empirical validation, the SAI may be a compatible alternative to the BERS-2 in the strength assessment process.

While the SAI is similar to the BERS-2 in many respects, it also offers a number of unique qualities. For instance, although both tools provide a similar conceptualization of

strengths, the SAI broadens this definition by adding that strengths are characteristics of the child that are valued both by the individual and society (Brownlee & Rawana, 2006). This distinction emphasizes the importance of the relationship between the child and his/her community and helps to clarify the clinical interpretation of a strength. Certain characteristics may be valued by the individual, but not necessarily valued by society. Only strengths that are valued both by the individual and society will be helpful in developing effective interventions and in promoting positive youth outcomes.

Another distinction between the SAI and the BERS-2 is the emphasis placed on maturation and development. The SAI reflects a developmental perspective of youth strengths, by including domains that become increasingly more important as children get older (Brownlee & Rawana, 2006). For example, within the peer relationships subscale, the SAI queries characteristics related to romantic relationships. This is an aspect of interpersonal functioning that is not covered in the BERS-2 and may be an important area to assess, particularly for adolescents. By expanding the clinical application of strengths assessments to older youth, the SAI offers a unique contribution to the strengths movement.

The SAI is also unique in the overall depth and breadth of strengths assessed. Although the BERS-2 and SAI both employ an ecological orientation of assessment, the SAI examines a greater variety of environments and potentially offers a more extensive measure of youth strengths. More specifically, the SAI offers a unique contribution to the strength assessment in the quantity and range of scale and item content. Broadening the range of strengths assessed provides greater opportunity for carrying over strengths from

one domain to another (Brownlee et al., 2012), which has the potential to enhance strength-based interventions.

For instance, a number of domains are included in the SAI that are not strictly included in the BERS-2. While the SAI devotes an entire subscale to recreational activities, the BERS-2 includes only one item addressing strengths in this area ("enjoys a hobby"). Similarly, the BERS-2 includes individual items addressing the importance of community involvement, strengths in personal care, and strengths related to spiritual and cultural identity, while the SAI devotes entire subscales to each of these areas. Each of these strengths are important to measure, because this information may provide health care workers with a more comprehensive picture of a child and highlight specific areas of interest on which to focus intervention and treatment plans. Since all children are unique and present with a variety of characteristics, it is imperative to assess strengths across all domains and all environments (Friedman, Friedman, & Weaver, 2003). The inclusion of spiritual and cultural identity in the SAI represents a considerable contribution to the assessment of strengths in children and adolescents. Failing to identify characteristics such as "shows a commitment to cultural values" and "demonstrates a sense of respect for other cultural backgrounds" discounts the importance of cultural differences in a child's development.

The BERS-2 and SAI do have a number of subscales in common, but demonstrate some variation within each of these domains as well. For instance, within the school functioning subscale, the SAI measures relationships with school staff and involvement in school activities. These are potential strengths that are not covered in the BERS-2 and may be important in ascertaining the child's sense of belonging to the school culture. Also,

within the personality dimension, problem solving skills, creativity, and artistic skills are assessed using the SAI, but are not represented in the BERS-2.

As demonstrated, the SAI taps a number of areas that are not addressed by the BERS-2 and thus might add information to the strength assessment process. Greater depth and breadth of content in assessing strengths will increase the clinical utility of a strength-based assessment because it increases the possibility of identifying strengths. This is particularly relevant when you consider children who appear to have had limited opportunities to develop internalized strengths.

The Relationship Between Strengths and Mental Health

In order to further maximize the clinical utility of the strength-based approach, a better understanding of the strengths phenomenon in general is needed. Specifically, we need to improve our understanding of the theoretical relationship between strengths and mental health. While interest in the empirical validation of strength tools has increased recently, large-scale studies examining the merits of a strength-based approach with respect to clinical utility are lacking (Cosden, Panteleakos, Gutierrez, Barazani, & Gottheil, 2004; Jimerson et al., 2004). Further research is necessary to explain the effects of strengths on emotional and behavioral difficulties in children and adolescents. Enhancing our understanding of the relationship between strengths and mental health could contribute to improved identification of high-risk youth, advance preventative strategies, and inform treatment plans for children and adolescents (LeBuffe & Shapiro, 2004).

A number of studies have begun to investigate the relationship between strengths and mental health. For instance, Lindemann (2001) examined strengths and functional impairment in a group of 128 children and adolescents. Strengths were measured using

the BERS and functional impairment was measured using the Child and Adolescent Functional Assessment Scale (CAFAS, Hodges, 1994). Findings indicated that youth who scored higher on the strengths measure showed lower levels of functional impairment at intake. Strengths were also predictive of functioning level 6 months later. Similarly, Pye (2006) found that high strengths scores on the SAI predicted fewer behaviour problems among a population of young children.

Reid and colleagues (2000) also examined the relationship between strengths and mental health. Researchers provided preliminary evidence for distinct patterns of strengths across groups by assessing 418 students with various clinical characteristics. They examined three groups of 7 to 18 year old students: students with emotional and behavioral disorders (EBD), students with learning disabilities (LD), and students with no functional impairments (control). Results demonstrated that there was a significant difference across groups in measure of strengths, as determined by the BERS. The difference was greatest between the EBD group and the control group, with the control group receiving significantly higher strength scores compared to the EBD group. In fact, the control group scored significantly higher on each of the individual BERS subscales compared to the EBD group. The LD group also scored significantly lower than the control group in measure of strengths, but the differences were less pronounced. These results have major implications for classifying students with EBD, and more generally, provide strong support for the relationship between strengths and mental health.

Another example of this type of research was Lyons and colleagues' (2000) empirical study in which researchers looked at the prevalence of strengths among 450 youth, and the relationship between strengths and clinical characteristics. Strengths were

measured using the CASA (Lyons et al., 1997). The youth sample was made up of 5 to 19 year olds previously admitted to a residential treatment program for mental health disorders. Some of the youth included in the study had already been discharged at the time of assessment and others were receiving ongoing treatment.

Lyons and colleagues (2000) found evidence to support the relationship between strengths and clinical and functional characteristics. The study found that the presence of strengths varied across individuals and that strengths were negatively associated with symptoms and risk behaviors, and positively associated with functioning in youth. Furthermore, hierarchical regression models revealed that level of strengths predicted treatment effectiveness. Controlling for levels of risk at admission, youth with a higher strength score at the start of treatment demonstrated fewer risk factors following treatment.

Similarly, Cosden and colleagues (2004) found that strengths predicted treatment outcome in a group of 215 adolescents participating in an outpatient drug treatment program. The 12 to 15 month treatment program emphasized personal skills and competency development in an attempt to reduce recidivism. Researchers found that level of strengths measured at the start of treatment was positively associated with successful completion of the program. In particular, family, behavioral, and school-based strengths predicted treatment success.

Finally, Farmer and colleagues (2005) also contribute to this area of literature by demonstrating a relationship between level of strengths and clinical characteristics. Two hundred and seventy-nine adolescents from rural, low-income communities were included

in the study. Youth were identified as at risk for developing emotional and behavioral disorders, but had not been diagnosed with any psychopathology.

Overall, Farmer and colleagues (2005) found that levels of developmental risk were negatively correlated with strengths, as measured by the BERS. This pattern was particularly strong for girls whose total strength scores were negatively associated with problematic characteristics (aggressiveness, attention problems, and interpersonal problems). Although not significant, this trend was also demonstrated among boys. In particular, boys who had lower strength scores had greater risks associated with externalizing behavior problems, aggression, attention problems, bullying, being bullied by peers, and manipulating friendships.

In summary, there is a growing body of literature supporting the relationship between youth strengths and mental health (clinical characteristics, functional impairment, risk factors, and treatment outcome) (Cosden et al., 2004; Farmer et al., 2005; Lindemann, 2001; Lyons et al., 2000; Reid et al., 2000). These findings have strong implications for mental health service providers. Empirical validation of the negative relationship between adolescent strengths and mental health concerns lends considerable support to the use of strength-based approaches (as an alternative to the traditional problem-focused approaches) in case management, prevention, and treatment efforts. However, empirical validation of the utility of strength-based assessments and interventions is only in its infancy and more research is needed.

Individual Differences in the Strengths-Mental Health Relationship

A number of researchers are calling for a closer examination of the individual differences in the strengths and mental health relationship (Jimerson et al., 2004;

Lindemann, 2001; Reid et al., 2000). Further research in this area could inform our understanding of who has what strengths, which strengths most impact mental health outcomes, which clinical characteristics are most impacted by strengths, and how individual difference variables impact the relationship between strengths and mental health (Lyons et al., 2000). In other words, further research in this area could contribute to the development of strength profiles, which could then contribute to more effective intervention strategies.

To date, research attempting to delineate child and adolescent strength profiles has been exceedingly limited. Despite this, preliminary data indicate that the relationship between strengths and mental health is, in fact, a complex relationship influenced by a number of intervening variables. Some of the variables that have been presumed to influence the overall effect of strengths on mental health characteristics include quantity and type of strengths measured, internalizing and externalizing personalities, and comorbidity (Farmer et al., 2005; Jimerson et al., 2004; Reid et al., 2000; Weisz, Jensen, & McLeod, 2005). However, empirical studies examining the impact of these and other variables on the strengths and mental health relationship are limited.

Recently, one group of researchers did investigate the association between individual strengths and interpersonal difficulties (Anderson, Rawana, Brownlee, & Whitley, 2010). Specifically, Anderson and colleagues assessed patterns of strengths associated with the bullying experience among a group of 85 youth. Researchers found that specific strengths (strengths in school and personality functioning) were associated with lower perceived victimization, while other strengths (strengths in spiritual and cultural identification) were actually associated with greater perceived victimization.

Although the mental health characteristics considered in this study were narrow in focus, these preliminary results contribute significantly to our understanding of the individual differences in the strengths and mental health relationship.

In a similar study, Whitley, Rawana, Pye, and Brownlee (2010) examined the association between individual strengths and behaviour problems in educational settings. Among the 54 students assessed, researchers found that fewer behaviour problems were significantly correlated with higher strengths scores in the following strengths domains: school, personality, peer relationships, and personal / physical care. Whitley and colleagues also reported that gender impacted the relationship, with male students reporting higher correlations between behaviour problems and strengths compared to female students among the latter strengths domains. These results also contribute significantly to our understanding of the individual differences in the strengths and mental health relationship.

Another group of researchers examined some of the individual differences in the strengths and mental health relationship on a broader scale and using a larger sample size. Walrath, Mandell, Holden, and Santiago (2004) investigated the relationship between child strengths and functional impairment in a group of 1838 children with various levels of functional impairment. Youth strengths were assessed using the BERS and functional impairment was assessed using the CAFAS. In addition, Walrath and colleagues examined how the relationship between strengths and functional impairment differed as a function of demographic characteristics. Demographic characteristics considered included age, sex, race, ethnic background, and household income.

Overall, Walrath and colleagues (2004) found a moderate relationship between youth strengths and functional impairment. Results indicated that there was a negative correlation between a child's measure of strengths and their functional impairment. Specifically, there were significant differences in overall BERS scores between groups of adolescents with minimal, moderate, marked, or severe levels of functional impairment, with the more severely impaired children scoring significantly lower on the strengths measure. Therefore, the results from this study support previous findings indicating that child and adolescent strengths differ as a function of impairment level (Lindemann, 2001; Lyons et al., 2000).

Although results revealed an overall negative correlation between youth strengths and functional impairment, all four groups of children (minimal, moderate, marked, and severe impairment) demonstrated near or above average levels of strengths. Walrath and colleagues (2004) conclude that, "this finding provides evidence that strengths and impairment are not opposite ends of the same continuum, but rather are separate constructs" (p. 6). This evidence contributes to our understanding of the strengths phenomenon.

With respect to the individual differences in the strengths and mental health relationship, Walrath and colleagues (2004) found the relationship between strengths and functional impairment to be relatively consistent across most demographic subgroups. In other words, the relationship between strengths and functional impairment did not differ as a function of demographic characteristics. One exception was the effect of sex on the strengths-impairment relationship. Results revealed a significant difference in the strengths-impairment relationship between males and females. Boys had higher strengths

at greater levels of functional impairment than girls (Walrath et al., 2004). While this research indicates that sex is an intervening variable in the strengths and mental health relationship, it is an isolated result and additional research needs to be conducted to confirm this finding.

The study by Walrath and colleagues (2004) represents a significant advancement in the evolution of strengths research, as it was the first study to empirically examine individual differences in the strengths and mental health relationship on a broad scale with a large sample size. However, broad conclusions cannot be drawn about the strengths phenomenon on the basis of a single empirical study. Furthermore, Walrath and colleagues focused only on demographic influences and failed to consider the effect of clinical, psychological, and social/environmental variables on the strengths and mental health relationship. Additional knowledge about the relationship between strengths and mental health in children and adolescents is clearly needed.

Since strengths research is still in its infancy, it may be necessary to examine related fields of psychological research in order to generate testable hypotheses about the strengths phenomenon. In developing theories about which variables might impact the strengths and mental health relationship, variables that have been identified in other areas of research as impacting mental health concerns should be considered. In this way, future research decisions are being made based on empirically supported findings, rather than relying on subjective judgments.

One specific area of mental health that may contribute to our understanding of the strengths and mental health relationship, is substance abuse. The substance abuse literature has received a great deal of research attention looking at variables that impact

substance abuse and treatment effectiveness. Variables that have been identified in this literature as impacting substance abuse, may be important to consider in the present study which examines mental health concerns more broadly. This area of literature may inform the present study due to the vast amount of research looking at variables that impact mental health, but also because a great deal of the research in this area focuses on substance use among the adolescent population. Since the present study focuses on strengths and mental health concerns among the adolescent population, results from research in this area may be particularly relevant to the present study.

For instance, Godley, Kahn, Dennis, Godley, and Funk (2005) examined the impact of environmental variables on substance use and substance-related problems following treatment. Five hundred and fifty-two adolescents who participated in an outpatient drug treatment program were assessed 3, 6, 9, and 12 months after participating in the treatment program. Godley and colleagues found that family conflict, family cohesion, and social support predicted substance use and substance-related problems following treatment.

In a study of 176 adolescents attending an outpatient drug treatment program, Friedman, Terras, and Kreisher (1995) also identified a number of family and client characteristics that were predictive of functioning level post-treatment. Forty-two predictor variables were assessed, including three demographic variables (age, sex, and education). Level of functioning post-treatment was based on six criteria: family functioning, family relationships, the adolescent's perception of family functioning, family independence, substance use, and psychopathology.

Friedman and colleagues (1995) found that, although none of the demographic variables predicted substance use following therapy, sex predicted reductions in psychological symptoms and age predicted improvements in family functioning and relationships following treatment. In particular, females showed reduced psychopathology and older participants demonstrated improved family relationships. Other independent variables that were found to predict positive treatment outcome included adolescent motivation, independence, and autonomy, greater emphasis on moral and religious values, fewer interpersonal conflicts with the mother, and not going to parents for help with problems.

While Friedman and colleagues (1995) focused mainly on family relationship variables, a recent study by Wills, Resko, Ainette, and Mendoza (2004) examined the validity of both family and peer relationships in predicting adolescent substance use. Wills and colleagues assessed perceived parent and peer emotional support in a multiethnic sample of 1826 adolescent substance users. Researchers found that peer support was positively correlated with adolescent substance use and that parent support was negatively correlated with adolescent substance use. The relationship between perceived support and substance use was also mediated by a number of personal characteristics of the adolescent, including good self-control, poor self-control, and a risk-taking tendency.

Overall, there are a number of social/environmental factors emerging from this research that appear to be related to substance abuse, including: perceived social and family support, family conflict and cohesion, and moral and religious values (Friedman et al., 1995; Godley et al., 2005; Wills et al., 2004). A number of demographic and adolescent characteristics have also emerged, including: age, sex, self-control, risk-taking behavior, as

well as motivation and independence (Friedman et al., 1995; Wills et al., 2004). In developing theories about which variables might impact the strengths and mental health relationship, the variables that have been identified in other areas of research as impacting mental health concerns should be considered. Since the abovementioned variables have been shown to have a direct impact on one area of mental health concerns when considered in isolation, it is reasonable to assume that they may have an influence on the more complicated strengths-mental health relationship. A number of these variables will be considered in the present study as the strengths and mental health relationship is examined more closely.

Present Study

Researchers have only recently begun to examine the relationship between adolescent strengths and mental health, and very few studies have considered the impact of within-group variables on this relationship. The present study was designed to address this gap in the strengths literature. Given the relative newness of this area of psychology, there is a dearth of well-articulated theories regarding strengths and human functioning (Epstein & Sharma, 1998). Consequently, exploring and developing plausible theories regarding the relationship between strengths and mental health should be at the forefront of strength-based research. In contrast to the theory-testing approach typical of empirical research, the present study is exploratory in nature.

The primary purpose of the present study is to increase our understanding of the strengths phenomenon in the adolescent population. In order to advance our understanding of the strengths concept, the relationship between adolescent strengths and mental health is explored. Specifically, strength scores for clinical and non-clinical

participants are examined. An attempt is then made to replicate previous findings demonstrating a negative association between overall strengths and a continuous measure of mental health concerns. The present study also investigates how the strengths and mental health relationship differs as a function of type of strengths measured and mental health presentation. The association between strengths and various individual measures of mental health (managing anxiety, managing mood, self-harm, somatic complaints, regulation of attention, impulsiveness, activity level, social problems, thought problems, conduct, and aggressive behaviour) is considered, and the link between various dimensions of strengths (family/ home functioning, school functioning, employment, leisure and recreation, peer functioning, personality functioning, personal and physical care, community involvement, spiritual and cultural identity, and current and future goals) on overall mental health is investigated.

In addition, the present study contributes to the development of adolescent strength profiles by examining individual differences in the strengths and mental health relationship. The effect of various demographic and social/environmental variables on the strengths-mental health relationship is investigated. In other words, the present study will determine whether the impact of strengths on mental health changes after the variance accounted for by other variables is considered. Additional independent variables considered in the present study include: sex, age, ethnic group, living situation, and various measures of family functioning (cohesion, expressiveness, conflict, independence, achievement orientation, intellectual and cultural orientation, active and recreational orientation, moral-religious emphasis, organization, and control). Finally, since the existing literature suggests that sex may moderate the relationship between strengths and mental

health (Walrath et al., 2004), a moderation analysis was also conducted in the present study. The effect of the interaction between strengths and sex on mental health was considered.

The present study proposes that further examination of the relationship between strengths and mental health and of the individual difference variables that impact this relationship, will help clinicians and researchers to better understand the effect of strengths on mental health outcomes in the adolescent population. Establishing strength profiles based on these findings may provide guidelines to aid in treatment decisions, consequently supporting the growth of a strength-based approach to treating children and adolescents.

The growth of a strength-based approach to treating children and adolescents should be further facilitated by the development of comprehensive strength-based assessment tools. The secondary purpose of the present study is to develop and empirically validate the Strength Assessment Inventory for Children and Adolescents (SAI) (Rawana et al., 2006). In light of the recent movement towards positivity within psychology, an increase in the number of effective strength-based assessment tools is needed. The SAI is a strength-based assessment tool for children and adolescents. It was developed to address this need in the literature and has recently undergone review by mental health care workers in order to establish content validity.

The present study involves a number of tests to further establish the psychometric properties of the SAI. Specifically, in order to establish external validity (generalizability) of the SAI, results from the strength-based assessment tool are compared for ethnic group (comparing Aboriginal and non-Aboriginal youth), and for males versus females. In order

to establish concurrent validity, results from the SAI are compared to results from an established strength-based assessment tool. Since the BERS-2 is widely used and has sound psychometric properties (reviewed above), the BERS-2 is used in the current study to establish concurrent validity of the SAI. And finally, the reliability of the measure in terms of concordance between parents/guardians and youth ratings, and internal consistency is examined. Overall, the type of information that is gathered in the present study is crucial to move us toward developing more effective treatment alternatives aimed at reducing mental health disorders among the adolescent population.

Method

Participants

One hundred and fourteen participants were recruited from nine public schools in the Thunder Bay community. Sixteen clinical participants were recruited from the Children's Centre, Thunder Bay. Four of the clinical participants (25.0 %) were recruited from an outpatient treatment program (The New Experiences Program), three (18.8%) were recruited from a community-based residential treatment program (SAIL), and nine (56.2%) were recruited through social workers at the Lakehead Public School Board. Clinical participants suffered from a range of social, emotional, and behavioural difficulties, and were participating in individual and/or group psychotherapeutic interventions. In total, 130 adolescents (33.8% male and 66.2% female) were included in the study. Adolescents ranged in age from 12 to 16 years of age (M = 14.4, SD = 1.65) and grades 7 to 11 were assessed. All participants were attending school, except for one adolescent who was being home schooled. According to the Child and Family Services Act (1990), a child 12 years old or older may receive treatment without parental approval or knowledge. In

order to protect client privacy, youth who were seeking services at the Children's Centre without their parent/guardian's knowledge were not included in the study. No other exclusion criteria were implemented.

The majority of participants were Caucasian (88.5 %), while 5.4 % were Aboriginal, and 3.1 % were from other origins. With respect to living arrangements, 66.9% of participants were living with both parents, 10.8% were living with one biological parent and one step-parent, 8.5% were living with their mother, 3.1% living with their father, 3.8% were in shared custody, and 4.6% were living in other situations (with foster parents, aunts and uncles, grandparents, or a group home).

Measures

Strength Assessment Inventory for Children and Adolescents (SAI). The SAI is a comprehensive strength-based assessment tool developed by Rawana, Brownlee, and Hewitt (2006). The SAI consists of 116 items reflecting 10 areas of child and adolescent strengths: Family / Home Functioning, School Functioning, Employment, Leisure and Recreation, Peer Functioning, Personality Functioning, Personal and Physical Care, Community Involvement, Spiritual and Cultural Identity, and Current and Future Goals. Items are rated on a 4-point Likert-type scale (0 = not at all, 1 = sometimes, 2 = often, 3 = very often) and respondents have the option of identifying items that do not apply. Both child self-report (SAIC) and parent report (SAIP) versions of the SAI were utilized in the present study (see Appendixes A and B). Focus groups were conducted in order to establish content validity of the SAI (described above), and remaining psychometric properties will be addressed in the present study.

The following procedure was employed for scoring the newly developed SAI: Domain scores for the SAI were calculated by adding individual item scores and dividing by the total possible score for that domain. If individuals responded with "does not apply" for a particular item, this item was not included in the total for that domain. The SAI's global measure, a strength quotient, was calculated by adding the participant's total score for all 10 domains, then dividing by the total number of domain scores. In order to preserve reliability and validity, domain scores were not calculated if three or more individual responses were missing. If fewer than three items were missing within a domain, missing items were prorated by calculating the mean from the existing scores (Tabachnik & Fidell, 2001).

Behavioral and Emotional Rating Scale-2nd Edition (BERS-2). The BERS was originally developed by Epstein and Sharma (1998) and was the first empirically validated child and adolescent assessment tool focused solely on the measurement of strengths. The BERS-2 (Epstein, 2004) consists of 52 items that assess five areas of childhood strength: Interpersonal Strength, Family Involvement, Intrapersonal Strength, School Functioning, and Affective Strength. A brief subscale assessing career strengths is also included. The BERS-2 provides norm-referenced scale scores as well as a global strength quotient for children and adolescents. Items are rated on a Likert-type scale from 0 to 3 (0 = not at all like, 1 = not much like, 2 = like, 3 = very much like). As described previously, the BERS-2 possesses very good psychometric properties.

The Brief Child and Family Phone Interview (BCFPI) Parent Self-Report Form. The BCFPI is a structured clinical intake and outcome interview for youth 3-18 years of age (Cunningham, Pettingill, & Boyle, 2001). The BCFPI provides standardized scale scores of

common behavioural and emotional problems (Regulation of Attention, Impulsiveness, and Activity Level; Cooperation with Others; Conduct; Separation from Parents; Managing Anxiety; Managing Mood; Self Harm), and composite scores of Externalizing Behaviour, Internalizing Behaviour, as well as an overall Total Problems score. In addition, the BCFPI evaluates the impact of these problems on child and family functioning, and assesses empirically relevant risk and protective factors, the family's readiness for change, and potential service barriers. Individual items are rated on a Likert-type scale from 1 to 3 (1 = none, 2 = a little, 3 = a lot).

Although the BCFPI does not yield sufficient information to be used as a diagnostic tool, each mental health subscale evaluates traits that are consistent with the structure of problems described in the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013), (Cunningham et al., 2001). For instance, the BCFPI Regulation of Attention, Impulsivity, and Activity Levels scale describes traits that are consistent with symptoms of Attention Deficit Hyperactivity Disorder, the BCFPI Cooperativeness with Others scale assesses traits that are consistent with symptoms of Oppositional Defiant Disorder, and the BCFPI Conduct scale evaluates traits that are consistent with symptoms of Conduct Disorder, as outlined in the DSM-5. Similarly, high scores on the BCFPI Separation from Parents scale correspond to symptoms of Separation Anxiety Disorder, high scores on the BCFPI Managing Anxiety scale are consistent with DSM-5 Anxiety Disorders, and high scores on the BCFPI Managing Mood scale are consistent with symptoms of Major Depression, as outlined in the DSM-5.

Overall, the BCFPI meets accepted psychometric standards (Cunningham et al., 2001). The scales for the BCFPI were statistically derived using factor and reliability

analyses, and the tool was found to have adequate internal consistency. Content validity for the BCFPI was ensured by selecting items that correspond with DSM-5 diagnostic criteria, and the tool appeared to measure valid constructs that showed high correlation with related measures. In 2001, the Ministry of Community and Social Services and the Ontario Ministry of Health and Long-Term Care mandated that all Ontario funded providers of Children's Mental Health Services use the BCFPI as a primary intake measure.

Youth Self-Report (YSR) and Child Behavior Checklist (CBCL). The YSR and the CBCL (Achenbach & Rescorla, 2001) are standardized tools developed to assess behavioural issues in youth, completed by the youth and parent respectively. Specifically, the YSR and CBCL are parallel measures designed to assess competencies (Activities, Social, School, and Total Competence scales) and problems. Problems scales are grouped into Internalizing syndromes (Somatic Complaints, Anxious/Depressed), Externalizing syndromes (Delinquent Behavior, Aggressive Behavior), and syndromes that are neither Internalizing nor Externalizing (Social Problems, Thought Problems, Attention Problems, Self-Destruct/Identity Problems). The measures each consist of 112 items endorsed on a 3-point Likert-type scale (0 = Not True, 1 = Somewhat or Sometimes True, 2 = Very True or Often True), and require approximately 15 minutes to complete.

The YSR and CBCL are part of a multiaxial system for assessing adolescents, which includes cognitive and physical assessment information, information from parents (including the CBCL) and teachers, and information collected directly from the adolescent (including the YSR). The YSR presents individual items that are parallel to ratings on the CBCL, and can be used to compare scores obtained from the youth and those obtained from parents.

An abundance of research has been conducted to establish the psychometric properties of the YSR and the CBCL. Content and criterion-related validity were supported by the ability of individual items and scale scores on the YSR and CBCL to discriminate between clinical and non-clinical populations. Also, both measures have been found to have adequate test –retest reliability (over a 7-day period as well as a 7-month period), and adequate internal consistency (Achenbach & Rescorla, 2001).

Family Environment Scale (FES), The Real Form, Third Edition. The FES Form R was developed by Moos and Moos (1994) to measure an individual's perception of their current family functioning. The FES Form R consists of 90 items and respondents are asked to answer "True" or "False" for each item. The FES provides standardized scores of Family Relationship Dimensions (cohesion, expressiveness, conflict), Personal Growth Dimensions (independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis), and System Maintenance Dimensions (organization, control). Internal consistencies for each of the 10 FES subscales ranged from moderate to high, with higher internal consistency demonstrated among more diverse samples (Moos, 1990). Intercorrelations were found to be similar for parents and children (Moos & Moos, 1994). With respect to test-retest reliability, researchers found that the measure was stable over a 1-week interval (Gehring & Feldman, 1988), as well as 2-month and 4-month intervals (Moos & Moos, 1994). Although additional reliability and validity indices of the measure are limited, the existing research suggests that the FES Form R has adequate psychometric properties overall.

Procedure

Youth were recruited through the Lakehead Public School Board and the Children's Centre Thunder Bay in Thunder Bay, Ontario Canada, following ethical approval from Lakehead University, the Lakehead Public School Board, and the Children's Centre. Initially, cover letters describing the study and authorization forms were forwarded to principals (see Appendices C and D), teachers (see Appendices E and F), and intake staff (see Appendices G and H), who then identified youth who met study inclusion criteria (described above). Once interested youth were identified, researchers provided cover letters describing the nature of the study and consent forms for participation in the study to adolescents (see Appendices I and J) and to their parents or legal guardians (see Appendices K and L). Participants were told that the study would investigate aspects of youth's functioning, and involved completing a number of questionnaires related to strengths and behavioural and emotional problems. Study measures were not administered until informed consent was obtained from both the adolescent and their parent or guardian. Potential participants from the clinical group were assured that participation was completely voluntary and that their services at the Children's Centre Thunder Bay would not be affected if they chose not to participate.

Adolescents who agreed to participate in the study were provided a battery of questionnaires requiring approximately 60 minutes to complete. Testing for participants in the clinical group was completed during one scheduled session with the investigator, immediately before or after a prescheduled treatment session. Testing for individuals in the non-clinical group was completed during one scheduled session at the student's school with the investigator. A group administration of test measures was conducted for participants recruited from elementary schools, and individual sessions were conducted

for participants recruited from high schools. The measures for all groups included both self-report tools and tools administered by the investigator. In addition, three questionnaires regarding adolescents' strengths and functioning were provided to the adolescent's parent or guardian to be completed at home and returned in a pre-paid envelope. Finally, following receipt of signed consent forms from parents or guardians and youth in the clinical groups, information was collected about the youth's functioning from tools previously administered by intake staff. Adolescent participants were each provided five dollars in Tim Horton's gift certificates for participating in the study, and each participant's name was entered into a draw to win one prize of one hundred dollars. Upon completion of the study, debriefing forms (see Appendix K) were forwarded to study participants.

Data Analyses

Main Analyses. Independent samples *t*-tests were conducted comparing strengths scores of clinical and non-clinical participants, and correlational analyses were used to examine the strength of the association between overall strengths and continuous measures of mental health concerns. Specifically, externalizing, internalizing, and total problem scores from the Brief Child and Family Phone Interview, the YSR, and the CBCL were used to represent broad mental health concerns, and strength quotients from the SAIC and the SAIP were used to represent strengths. Incorporating multiple measures of strengths and mental health allowed for the examination and reduction of potential biases with individual measures. For instance, some measures demonstrated low inter-rater reliability, and other tools measuring similar constructs appeared to have varying levels of specificity and sensitivity.

Both parent and self-reports were used to measure participant's strengths and mental health characteristics. Where appropriate, scores from the SAIP were compared with scores on the CBCL, and scores from the SAIC were compared to scores from the YSR in order to minimize interference in analyses from low inter-rater reliability resulting from the use of multiple informants.

Correlation matrices were also generated to determine which strengths are most related to mental health scores, and which mental health concerns are most affected by overall strength scores. In order to examine these relationships, SAIC and SAIP domain scores (family functioning, school functioning, employment, leisure and recreation, peer functioning, personality, personal and physical care, community involvement, spiritual and cultural identity, and goals) were compared with overall YSR, CBCL, and BCFPI scores (internal, external, and total problem scores). Dimension scores from the YSR and CBCL (anxiety/depression, depression, somatic, social, thought, attention, rules, aggression, and other) and from the BCFPI (regulating attention items, impulsivity, regulating attention population, cooperation, conduct, separation, managing anxiety, and managing mood) were used to represent various dimensions of mental health concerns.

In order to develop a more comprehensive theoretical understanding of the relationship between strengths and mental health, the impact of additional independent variables was also considered. Standard multiple regression analyses were used to examine the relationship between strengths and mental health, while considering the impact of the following variables: sex, age, ethnic group, family structure, and various measures of family functioning (cohesion, expressiveness, conflict, independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation,

moral-religious emphasis, organization, and control). These analyses were conducted in order to examine the unique impact of strengths on mental health after the variance from other variables is accounted for. Finally, a moderated regression analysis was conducted, looking at the effect of the interaction between strengths and sex on mental health concerns.

Assessing psychometric properties of the Strength Assessment Inventory (SAI). Correlation analyses were used to establish concurrent validity of the SAI, by examining the relatedness between scores obtained on the SAI and the BERS-2. Correlation analyses were also used to establish the degree of concordance between parents/guardians and youth ratings, and the internal consistency of the measure (comparing individual scales on these measures). Independent samples *t*-tests were conducted comparing groups based on sex and ethnicity in order to establish generalizability of the SAI.

Results

Preliminary Analyses

Descriptive Date. Table 1 lists the mean total and subscale scores for the Strength Assessment Inventories (child self report and parent report versions).

Data Screening. Prior to any analyses, the data were examined for accuracy of data entry and missing values. The distribution of data was then examined for the presence of univariate outliers. Total scores from each measure were converted to *z*-scores to identify outliers. No standard scores were greater than +/- 3.29 ($p < .001$, two-tailed; Tabachnik & Fidell, 2001).

In order to assess assumptions of normality, the distribution of total scores from each measure were examined for skewness and kurtosis. Standardized scores indicated

that skew and kurtosis were nonsignificant for all data sets except SAIP scores. The distribution of scores from the SAIP appeared to be negatively skewed, suggesting a non-normal distribution. However, given the large sample size used in the present study, the impact of significant skewness and kurtosis diminishes (Tabachnik & Fidell, 2001). Visual inspection of a scatterplot suggested that the skewness in the SAIP distribution was minimal.

Scatterplots were also generated in order to assess linearity and homoscedascity. Bivariate scatterplots between predictor variables and the dependent variable indicated linear relationships between variables. Visual examination of scatterplots of the standardized residuals

by the regression standardized predicted values, suggested that residuals for each predictor

Table 1

Means, Standard Deviations, and Ranges for Total and Subscale Scores of the Strength Assessment Inventory (Child Self Report and Parent Report)

Measure and Subscale	Means (Standard Deviations)	Range
Strength Assessment Inventory (Child Self Report)		
Strength Quotient	0.64 (0.13)	0.33 – 0.90
Family/Home Functioning	0.68 (0.16)	0.25 – 0.97
School Functioning	0.66 (0.18)	0.19 – 1.00
Employment	0.69 (0.22)	0.08 – 1.00
Leisure and Recreation	0.62 (0.15)	0.23 – 0.98
Peer Functioning	0.73 (0.16)	0.28 – 0.95
Personality Functioning	0.66 (0.18)	0.26 – 1.00
Personal and Physical Care	0.66 (0.18)	0.21 – 1.00
Community Involvement	0.59 (0.24)	0.00 – 1.00
Spiritual and Cultural Identity	0.44 (0.21)	0.00 – 0.93
Current and Future Goals	0.76 (0.20)	0.24 – 1.00
Strength Assessment Inventory (Parent Report)		
Strength Quotient	0.65 (0.16)	0.17 – 0.93
Family/Home Functioning	0.72 (0.19)	0.11 – 1.00
School Functioning	0.74 (0.21)	0.10 – 1.00
Employment	0.73 (0.20)	0.08 – 1.00
Leisure and Recreation	0.57 (0.15)	0.12 – 0.86
Peer Functioning	0.71 (0.20)	0.31 – 0.97
Personality Functioning	0.67 (0.18)	0.17 – 1.00
Personal and Physical Care	0.64 (0.19)	0.11 – 0.95
Community Involvement	0.67 (0.22)	0.00 – 1.00
Spiritual and Cultural Identity	0.45 (0.20)	0.10 – 1.00
Current and Future Goals	0.70 (0.23)	0.00 – 1.00

variable have a relatively even distribution. In other words, homoscedascity was indicated. Hence, the assumptions of linearity and homoscedasticity were not violated in the present study.

Finally, correlation matrices of predictor variables from each proposed regression model were evaluated for multicollinearity. Correlations between predictor variable scores ranged from .01 to .67. Therefore, multicollinearity did not pose a problem for multiple regression analyses in the present study, since each value was well below the recommended standard of 0.80 to 0.90 (Field, 2009).

Assessing psychometric properties of the Strength Assessment Inventory (SAI)

Content Validity. Content validity of the SAI was determined through a comprehensive review of the strengths literature, as well as a series of discussions held with clinicians and researchers. Each professional attending the discussions had experience working with the adolescent population and was familiar with strength-based research, assessment, and treatment approaches. Comments regarding the content, format, and wording of the parent and adolescent versions of the SAI were collected, and modifications to individual items and strength domains were made accordingly. This process resulted in refinement of the format and structure of the measure, expansion of domains and individual item content, and increasing appropriateness for youth regarding content, while minimizing redundancy and poorly worded items.

Internal Consistency. Internal consistency reliability estimates (Cronbach, 1951) were computed for each subscale as well as the overall measure.

Youth self-report. The internal consistency of the SAIC subscales was firmly established, with Cronbach alpha coefficients ranging from 0.69 (personal and physical

care; 8 items) to 0.91 (personality functioning; 18 items). Internal consistency was also high for the measure overall, with an alpha coefficient of 0.85 (10 items).

Parent/Guardian report. The internal consistency of the SAIP was also firmly established, with Cronbach alpha coefficients ranging from 0.80 (leisure and recreation; 19 items) to 0.94 (personality functioning; 18 items). Internal consistency was also high for the measure overall, with an alpha coefficient of 0.87 for the SAIP (10 items).

Generalizability. In order to establish generalizability of the SAI, results were compared for sex (male versus female) and ethnicity (Aboriginal versus non-Aboriginal youth). Levene's test for equality of variances revealed that the homogeneity of variance assumption was not violated among groups.

Youth self-report. No differences in strength scores were found between males (M = 0.63, SD = 0.14) and females (M = 0.65, SD = 0.12) using the SAIC [$t(128) = -0.99$, p = 0.32]. However, a significant difference was demonstrated between Aboriginal youth (M = 0.54, SD = 0.10) and non-Aboriginal youth (M = 0.65, SD = 0.13) based on scores from the SAIC [$t(124) = 2.39$, $p < 0.05$].

Parent/Guardian report. No differences in strength scores were found between males (M = 0.64, SD = 0.15) and females (M= 0.65, SD = 0.16) using the SAIP [$t(102) = -0.26$, p = 0.79]. With respect to ethnicity, no significant differences in strength scores were found between Aboriginal youth (M = 0.57, SD = 0.13) and non-Aboriginal youth (M = 0.65, SD = 0.16) using the SAIP [$t(99) = 1.04$, p = 0.30].

As a result, generalizability for the SAI was established for sex based on results from the present study, but groups based on ethnicity may differ in youth rated strength scores. Additional research is necessary in order to explore this finding further.

Concurrent Validity. In order to examine the degree of relatedness between the SAI and the BERS-2, a correlation matrix was generated. All SAI and BERS-2 subscales were included in the correlation matrix, as well as the SAI's global strength quotient and the BERS-2 global strength index.

Youth self-report. In general, correlations were moderate to high across SAIC and BERS-2 subscales, ranging from 0.22 to 0.68. Most of the correlations were significant at the .01 level, except between the SAIC Peer Functioning and Employment subscales and several of the BERS-2 subscales. These SAIC subscales were significantly correlated with only half of the BERS-2 subscales. The SAIC Spiritual and Cultural Identity subscale was not significantly correlated with any of the BERS-2 subscales. When subscales that assessed similar constructs were compared, all correlations were significant, except between the BERS-2 Career subscale and the SAIC Employment subscale (r = .18, p = .10). Finally, the overall BERS-2 Strength Index demonstrated a significant correlation with the SAIC Strength Quotient [r (116) = 0.56, p < .001].

Parent/Guardian report. Correlations between the SAIP and BERS-2 subscales were more modest, ranging from .20 to .38. The following SAIP subscales were significantly correlated to most BERS-2 subscales at the .01 or .05 level: Family / Home Functioning, Leisure and Recreation, Personal and Physical Care, Community Involvement, and Current and Future Goals. School Functioning and Personality Functioning subscales failed to show significant correlations with several of the BERS-2 subscales, and Employment, Peer Functioning, and Spiritual and Cultural Identity failed to demonstrate significant correlations with any of the BERS-2 subscales. When subscales that assessed similar constructs were compared, all correlations were significant, except between the

BERS-2 Career subscale and the SAIP Employment subscale (r = .26, p = .07). Further, the SAIP peer functioning (r = .17, p = .49) and personality functioning (r = .19, p = .06) subscales were not significantly correlated with the corresponding BERS-2 subscales. Finally, the overall BERS-2 Strength Index demonstrated a significant correlation with the SAIP Strength Quotient [$r(93) = 0.33$, $p < .01$].

Despite some discrepancy (particularly between the BERS-2 Career subscale and the SAI Employment subscales), these findings provide strong support for the concurrent validity of the SAI. Several of the correlation coefficients from corresponding subscales and overall strength scores from these two measures are close to or exceed 0.35, which is considered necessary in order to establish concurrent validity (Hammill, Brown, & Bruant, 1989, as cited in Trout et al., 2003).

Concordance between parents/guardians and youth ratings. A correlation matrix was also generated to ascertain the degree of relatedness between parent and youth ratings of strengths. The correlation between the strength quotient ratings for parents and youth was 0.36 ($p < .001$). At the subscale level, the correlation coefficients ranged from 0.27 (leisure and recreation) to 0.65 (school functioning). All were significant at the .001 level except family functioning and leisure and recreation, which were significant at the .01 level. The only subscales for which parent and youth ratings were not significantly correlated were employment (r = .09, p = .55) and peer functioning (r = .22, p = .44). Although parent and youth ratings were significantly correlated for the majority of subscales, the expected value of 0.80 for optimal concordance between raters was not met for the overall strength quotients or for individual subscales (Salvia & Ysseldyke, 2001, as cited in Epstein & Synhorst, 2008).

Main Analyses

Association between strengths and clinical status. An initial analysis exploring the relationship between strengths and clinical status was conducted. Specifically, strength scores for clinical and non-clinical participants were considered. Given results from the literature, that show a negative relationship between strengths and mental health, it is theoretically plausible that strength scores from clinical groups will differ significantly from strength scores from non-clinical groups. Results from the present analyses did show some variation in clinical group as expected.

Youth self-report. Results from the SAIC failed to demonstrate the expected relationship between groups. Using the SAIC, clinical participants (M = 0.63, SD = 0.11) did not score significantly lower than non-clinical participants (M = 0.64, SD = 0.13), $t(128) = -.33$, $p = 0.74$, as expected. Levene's test was not significant when considering results from the SAIC ($F = 0.99$, $p = 0.32$).

Parent/Guardian report. Considering results from the SAIP, clinical participants' strength scores were significantly lower (M = 0.48, SD = 0.22) compared to non-clinical participants' strength scores (M = 0.67, SD = 0.13), $t(13.23) = -3.16$, $p < .01$. Of note, Levene's test for equality of variances was significant when considering results from the SAIP ($F = 10.87$, $p < .01$), so equal variances of the groups were not assumed.

Association between overall strengths and mental health scores.

Youth self-report. A correlation matrix revealed a significant negative association between the SAIC strength quotient and the following YSR scores: total problem scores ($r = -.349$, $p < .001$), internalizing problem scores ($r = -.197$, $p < .05$), and externalizing problem scores ($r = -.321$, $p < .001$). Although not statistically significant, a negative association was

also demonstrated between the SAIC strength quotient and the following BCFPI scores: total problem scores (r = -.160, p = .106), internalizing problem scores (r = -.103, p = .298), and externalizing problem scores (r = -.189, p = .056).

Parent/Guardian report. The SAIP strength quotient demonstrated significant negative correlations with all problem scores measured, including the following CBCL scores: total problem scores (r = -.598, p < .001), internalizing problem scores (r = -.529, p < .001), and externalizing problem scores (r = -.571, p < .001), as well as the following BCFPI scores: total mental health concerns scores (r = -.557, p < .001), internalizing problem scores (r = -.403, p < .001), and externalizing problem scores (r = -.607, p < .001).

Association between strength domains and individual measures of mental health. Additional correlational analyses were conducted looking at which strengths are most related to mental health scores, and which mental health concerns are most affected by overall strength scores. Since the Brief Child and Family Phone Interview (BCFPI) failed to demonstrate a significant relationship with strengths using the SAIC and to reduce low inter-rater reliability bias, only results from the YSR and the CBCL were considered in these analyses. Overall, parent scores of strength domains were more strongly correlated with individual problem scores from the corresponding CBCL, compared to when adolescent self-report data were considered.

Youth self-report. Although overall strengths using adolescent self-report showed a significant negative correlation with total problem scores using the YSR, results were inconsistent when individual strength domains and individual problem scores from these measures were considered (see Table 2). In fact, strength in personality functioning was the only strength domain that demonstrated a significant negative correlation with each

mental health concern measured. Strengths in family functioning, school functioning, personal and physical care, community involvement, current and future goals, and overall strength scores were significantly correlated with most mental health concerns, but strengths in leisure and recreation, peer functioning, and spiritual and cultural identity were correlated with very few mental health

Table 2

Correlations Between Strength Assessment Inventory for Children and Adolescents (Child/Adolescent Self-Report Form) Subscales and Youth Self Report Dimension Scores

Subscale	Internal	External	Total	Anxiety/ Depression	Depression	Somatic
FF	-.23**	-.38**	-.36**	-.20*	-.29**	-.15
SF	-.17	-.49**	-.43**	-.07	-.14	-.25**
ES	.13	-.03	-.04	.18	-.07	-.01
LR	.02	-.04	-.01	.11	-.22*	-.06
PF	-.08	-.27*	-.22	.02	-.03	-.10
PrF	-.39**	-.27**	-.43**	-.30**	-.45**	-.34**
PC	-.25**	-.13	-.30**	-.13	-.31**	-.20*
CI	-.27**	-.30**	-.34**	-.07	-.30**	-.20*
SI	.13	-.12	.02	.21	.01	.07
CG	-.12	-.23*	-.25**	-.04	-.17	-.14
SQ	-.20*	-.32**	-.35**	-.06	-.29**	-.19*

(*table continues*)

Note. Columns represent YSR dimensions, whereas rows indicate SAIC subscales. FF = Family / Home Functioning. SF = School Functioning. ES = Employment Strengths. LR = Leisure and Recreation. PF = Peer Functioning. PrF = Personality Functioning. PC = Personal and Physical Care. CI = Community Involvement. SI = Spiritual / Cultural Identity. CG = Current and Future Goals. SQ = Strength Quotient.

*$p < .05$. **$p < .01$.

Table 2 (continued)

Correlations Between Strength Assessment Inventory for Children and Adolescents (Child/Adolescent Self-Report Form) Subscales and Youth Self Report Dimension Scores

Subscale	Social	Thought	Attention	Rules	Aggression	Other
FF	-.32**	-.19*	-.31**	-.28**	-.36**	-.23**
SF	-.27**	-.30**	-.49**	-.50**	-.44**	-.21*
ES	-.03	-.01	-.06	-.11	-.05	.15
LR	-.07	-.05	-.04	-.06	-.08	.09
PF	-.25*	-.10	-.17	-.30*	-.33**	-.08
PrF	-.43**	-.24**	-.39**	-.26**	-.30**	-.23**
PC	-.31**	-.23**	-.31**	-.13	-.14	-.24**
CI	-.26**	-.21*	-.22*	-.33**	-.26**	-.12
SI	.03	.13	.01	-.23*	-.04	-.04
CG	-.24**	-.06	-.29**	-.19*	-.24**	-.17*
SQ	-.32**	-.17	-.38**	-.33**	-.31**	-.19*

Note. Columns represent YSR dimensions, whereas rows indicate SAIC subscales. FF = Family / Home Functioning. SF = School Functioning. ES = Employment Strengths. LR = Leisure and Recreation. PF = Peer Functioning. PrF = Personality Functioning. PC = Personal and Physical Care. CI = Community Involvement. SI = Spiritual / Cultural Identity. CG = Current and Future Goals. SQ = Strength Quotient.

*$p < .05$. **$p < .01$.

concerns, and strengths in employment failed to show a significant negative correlation with any of the mental health concerns measured. As demonstrated in Table 2, most of the mental health concerns were equally impacted by individual strength domains, except for problems with

anxiety and depression, which demonstrated a significant negative relationship with only strengths in family functioning and personality functioning.

Parent/Guardian report. When parent reports were looked at, the only strength domains that did not demonstrate a significant negative correlation with most of the individual problem domains and total problem scores were spiritual and cultural identity and employment (see Table 3). Each of the other strength domains showed a significant negative correlation with each problem score measured, with the exception of a few. In other words, adolescents who scored high on these individual strengths were rated as having fewer problems in each of the mental health concerns domains, according to parent reports. Spiritual and cultural identity was not significantly related to externalizing problems, anxiety and depression, social problems, somatic complaints, or aggressive behaviour. Strength in employment failed to show a significant relationship with most of the problem domains including, externalizing problems, anxiety and depression, social problems, attention problems, rule-breaking behaviour, aggressive behaviour, and other problems.

Using parent reports, it appears that strengths in family functioning, school functioning, leisure and recreation, personality functioning, personal and physical care, community involvement, current and future goals, peer functioning, and total strength scores have the greatest impact on reducing individual and overall mental health concerns.

Total problem scores, internalizing problem scores, depression, and thought-related problems were found to be the problem domains most impacted by higher strength scores. Each of these problem domains

Table 3

Correlations Between Strength Assessment Inventory for Children and Adolescents (Parents, Teachers, and Mental Health Staff From) Subscales and Child Behavior Checklist Dimension Scores

Subscale	Internal	External	Total	Anxiety/ Depression	Depression	Somatic
FF	-.45**	-.64**	-.57**	-.36**	-.51**	-.42**
SF	-.39**	-.56**	-.56**	-.38**	-.38**	-.44**
ES	-.29*	-.19	-.29*	-.25	-.27*	-.34*
LR	-.43**	-.43**	-.45**	-.38**	-.48**	-.33**
PF	-.76**	-.64**	-.71**	-.68**	-.69**	-.52*
PrF	-.57**	-.66**	-.66**	-.54	-.64**	-.40**
PC	-.40**	-.40**	-.46**	-.41	-.46**	-.35**
CI	-.40**	-.34**	-.35**	-.27**	-.47**	-.34**
SI	-.26*	-.18	-.24*	-.21	-.44**	-.14
CG	-.37**	-.43**	-.46**	-.37**	-.46**	-.29**
SQ	-.53**	-.57**	-.60**	-.45**	-.62**	-.43**

(*table continues*)

Note. Columns represent CBCL dimensions, whereas rows indicate SAIP subscales. FF = Family / Home Functioning. SF = School Functioning. ES = Employment Strengths. LR = Leisure and Recreation. PF = Peer Functioning. PrF = Personality Functioning. PC = Personal and Physical Care. CI = Community Involvement. SI = Spiritual / Cultural Identity. CG = Current and Future Goals. SQ = Strength Quotient.

*$p < .05$. **$p < .01$.

Table 3 (continued)

Correlations Between Strength Assessment Inventory for Children and Adolescents (Parents, Teachers, and Mental Health Staff Form) Subscales and Child Behavior Checklist Dimension Scores

Subscale	Social	Thought	Attention	Rules	Aggression	Other
FF	-.37**	-.50**	-.42**	-.49**	-.62**	-.43**
SF	-.48**	-.56**	-.65**	-.60**	-.58**	-.47**
ES	-.21	-.45**	-.21	-.26	-.21	-.26
LR	-.39**	-.42**	-.46**	-.46**	-.42**	-.32**
PF	-.73**	-.70**	-.77**	-.74**	-.68**	-.34
PrF	-.58**	-.59**	-.60**	-.55**	-.66**	-.51**
PC	-.42**	-.49**	-.46**	-.37**	-.42**	-.41**
CI	-.33**	-.40**	-.32**	-.42**	-.34**	-.24**
SI	-.12	-.34**	-.32**	-.25*	-.12	-.22*
CG	-.43**	-.50**	-.51**	-.46**	-.45**	-.43**
SQ	-.50**	-.61**	-.58**	-.56**	-.57**	-.48**

Note. Columns represent CBCL dimensions, whereas rows indicate SAIP subscales. FF = Family / Home Functioning. SF = School Functioning. ES = Employment Strengths. LR = Leisure and Recreation. PF = Peer Functioning. PrF = Personality Functioning. PC = Personal and Physical Care. CI = Community Involvement. SI = Spiritual / Cultural Identity. CG = Current and Future Goals. SQ = Strength Quotient.

*$p < .05$. **$p < .01$.

produced a significant negative relationship with each of the strengths measured. However, if the low correlations with strengths in employment and spiritual and cultural identity were eliminated, almost all of the problem scores would demonstrate a significant negative

relationship with each of the strength domains measured.

In summary, while overall strengths and mental health concerns are negatively correlated for both parent and adolescent self-report, this finding is more robust using parent reports. When the relationship between individual strengths and mental health concerns was considered, high scores on most strength domains were significantly related to low scores on most mental health domain scores. The strength scores that appear to have the least impact on mental health concerns appear to be spiritual and cultural identity and employment, while strengths in personality functioning were most consistently related to mental health concerns. The mental health concerns that appear to be most impacted by strengths are overall problem scores, internalizing problems, depression, and thought-related problems.

Individual differences in the strengths and mental health relationship. In order to further examine the relationship between strengths and mental health, standard multiple regression analyses were then conducted with consideration given to the impact of various demographic and social/environmental variables. Regression analyses allow researchers to measure the effect of multiple independent variables on a single outcome variable. In the present study, the incremental effects of strengths on mental health concerns over and above a subset of additional independent variables were examined.

Results from these analyses contribute to the development of strength profiles in the adolescent population.

The criterion variable considered in each regression equation constructed was the adolescent's measure of mental health (YSR and CBCL scores), and the adolescent's strength scores (SAIC and SAIP scores were considered independently in each regression analysis conducted) were entered simultaneously with the other predictor variables. The maximum number of additional independent variables included in regression analyses was determined based on the following equation: $N > / 50 + 8m$, where N = total number participants and m = the permissible number of variables (Tabachnik & Fidell, 2001). This resulted in a maximum of 10 variables to be included in regression analyses.

As a data reduction procedure, results from correlation matrices were utilized for determining which potential predictor variables would be included in regression equations. Specifically, potential predictor variables that were most highly correlated to the dependent variable were considered. Additionally, a number of variables were considered in regression equations because they were found in previous research to have impacted strengths or mental health concerns, or because they appeared relevant and to have face validity for measuring strengths and mental health concerns (Friedman et al., 1995).

Effect of social/environmental variables on the strengths-mental health relationship. Predictor variables selected for analysis in the first regression equation had a central focus on family functioning. The following variables derived from the Family Environment Scale were included as independent variables in the first regression equations constructed: cohesion, expressiveness, conflict, independence, achievement

orientation, intellectual and cultural orientation, active and recreational orientation, moral-religious emphasis, organization, and control. The measure of strengths included in the analysis as a predictor variable was the strength quotient derived from the SAIC and SAIP. The dependent variable considered in the regression equation was the adolescent's measure of mental health (YSR and CBCL scores).

Youth self-report. In these initial regression analyses, only family conflict ($\beta = .29$, $p < .05$) and emphasis on moral and religious values ($\beta = .21$, $p < .05$) significantly predicted mental health scores when YSR scores were utilized. The regression model focused on family functioning was significant when YSR results were used as the dependent variable, $F(11, 94) = 4.66$, $p < .001$ and explained 35.3% (27.7% adjusted) of the variance in mental health scores.

Parent/Guardian report. Only overall strength scores ($\beta = -.72$, $p < .001$) significantly predicted mental health scores when CBCL scores were utilized. The regression model was also significant when CBCL results were used as the dependent variable, $F(11, 73) = 6.93$, $p < .001$ and this model explained 51.1% (43.7% adjusted) of the variance in mental health scores.

Effect of demographic variables on the strengths-mental health relationship. A second set of regression analyses, similarly constructed, were performed to determine which demographic variables significantly impacted the strengths and mental health relationship. The following four demographic variables were selected as predictor variables in the second set of regression equations constructed: sex, age, ethnicity, and living situation. Again, the measure of strengths included in the analysis as a predictor variable was the strength quotient derived from the SAIC and SAIP, and the dependent

variable considered in the regression equation was the adolescent's measure of mental health (YSR and CBCL scores).

Youth self-report. When the results from the YSR were used as the criterion variable, a significant model emerged [$F(5, 115) = 6.34$, $p < 0.01$], and the model explained 21.6% (18.2% adjusted) of the variance in mental health scores. Two of the four predictor variables entered into the model were found to significantly predict mental health scores, including overall strength score ($\beta = -.39$, $p < .001$) and sex ($\beta = .26$, $p < .01$).

Parent/Guardian report. When the results from the CBCL were entered as the criterion variable, a significant model again emerged [$F(5, 93) = 17.85$, $p < .001$], and the model explained 49.0% (46.2% adjusted) of the variance in mental health scores. Only overall strength scores ($\beta = -.63$, $p < .001$) and sex ($\beta = .16$, $p < .05$) significantly predicted mental health scores.

Effect of demographic and social/environmental variables on the strengths-mental health relationship. In the third set of regression analyses, results from the previous analyses were combined in order to determine which variables most significantly impacted mental health scores, after taking into account the impact of the other predictor variables. The following variables were included in the third set of regression analyses: overall strength scores, sex, ethnicity, living situation, age, family cohesion, family conflict, and emphasis on moral and religious values. The dependent variable considered in the regression equation was the adolescent's measure of mental health (YSR and CBCL scores).

Youth self-report. When results from the YSR were considered as the criterion variable, a significant model emerged, $F(8, 94) = 6.92$, $p < .001$), and the model explained 37.1% (31.7% adjusted) of the variance in mental health scores. One of the eight variables

entered into the model significantly predicted mental health scores at the .01 level (sex), and two variables significantly predicted mental health scores at the .05 level (overall strength scores and emphasis on moral and religious values) (see Table 4).

Parent/Guardian report. When results from the CBCL were considered as the criterion variable, a significant model emerged, $F(8, 77) = 10.32$, $p < .001$), and the model explained 51.7% (46.7% adjusted) of the variance in mental health scores. Of the eight predictor variables

Table 4

Summary of Simple Regression Analysis for Variables Predicting Adolescent Mental Health (Youth Self Report scores) (*N* = 95)

Variable	*B*	*SE B*	β
Strengths	-44.10	22.10	-0.20*
Sex	14.71	5.35	0.25**
Ethnicity	-17.51	9.81	-0.16
Living situation	1.37	5.35	0.02
Age	-1.08	1.58	-0.06
Family cohesion	-0.37	0.19	-0.24
Family conflict	0.43	0.25	0.21
Family moral and religious values	0.48	0.22	0.19*

*$p < .05$. **$p < .01$.

entered into the model, only overall strength scores significantly predicted mental health scores (see Table 5). Although the results were not statistically significant ($p = 0.16$), sex also appeared to impact mental health scores.

Overall, strengths appear to have a unique impact on mental health concerns, even when the influence of several demographic and social / environmental variables is considered.

Moderated regression analysis. In addition to strength scores, sex appears to have an impact on mental health scores in the present study. Analyses in the present study indicate that sex correlates positively with mental health outcomes when youth self reports are considered ($r = 0.23$, $p < .01$), as well as when parent reports are considered ($r = 0.17$, $p < .05$). In other words, being female (sex = 2) correlates more strongly than being male (sex = 1) with mental health concerns. As discussed previously, the existing literature also suggested that sex impacts mental health scores and that the relationship between strengths and impairment is different for males than it is for females (Walrath et al., 2004). Given these findings, a moderated regression model was tested in the present study to determine the effect of the interaction between strengths and sex on mental health concerns. A product term was calculated to represent the interaction between strengths and sex, and then strengths, sex, and the product term were entered into the regression model simultaneously to predict mental health. The dependent variable considered in the regression equation was the adolescent's measure of mental health (YSR and CBCL scores). In order to avoid problems with multicollinearity, centered variables were computed from each predictor variable as recommended by Aiken and West (1991). Testing the

interaction via a moderated regression analysis helped to determine if the strength of the relationship between strengths and mental health changes as a function of sex.

Table 5

Summary of Simple Regression Analysis for Variables Predicting Adolescent Mental Health (Child Behavior Checklist scores) (*N* = 78)

Variable	*B*	*SE B*	β
Strengths	-100.67	13.29	-0.67***
Sex	6.42	4.56	0.12
Ethnicity	-19.35	13.14	-0.12
Living situation	4.89	4.87	0.09
Age	0.28	1.35	0.02
Family cohesion	0.17	0.16	0.12
Family conflict	0.24	0.22	0.13
Family moral and religious values	0.11	0.17	0.05

***$p < .001$.

Youth self-report. When adolescent self-reports were considered, the raw score regression coefficient for the SAIC x sex product term was $b = -0.075$, $t(123) = -0.899$, $p = 0.371$. Although sex predicted mental health scores independently in the previous analyses, there was no statistically significant interaction between strengths and sex in predicting mental health in this model.

Parent/Guardian report. When parent reports were considered, however, the addition of the interaction term predicted mental health above and beyond the independent contributions of strengths and sex. In other words, sex was found to moderate the relationship between strengths and mental health. The raw score regression coefficient for the SAIP x sex product term was $b = -0.279$, $t(99) = -3.739$, $p < 0.001$. The interaction is depicted visually in Figure 1. The scatterplot reveals that females have lower strengths at greater levels of mental health concerns than males. Overall, the relationship between strengths and mental health concerns is stronger for females ($r = -0.77$, $p < .001$) than it is for males ($r = -0.34$, $p = .05$).

Discussion

An attempt was made in the current investigation to replicate previous findings demonstrating a significant relationship between adolescent strengths and mental health concerns. The current investigation offers a significant contribution to this area of research by also investigating which strengths have the greatest impact on mental health concerns, which mental health domains are most impacted by strengths, and what variables impact the relationship between adolescent strengths and mental health. It was hypothesized that the relation of mental health concerns to strengths would be moderated through other variables, and the results were largely consistent with this prediction.

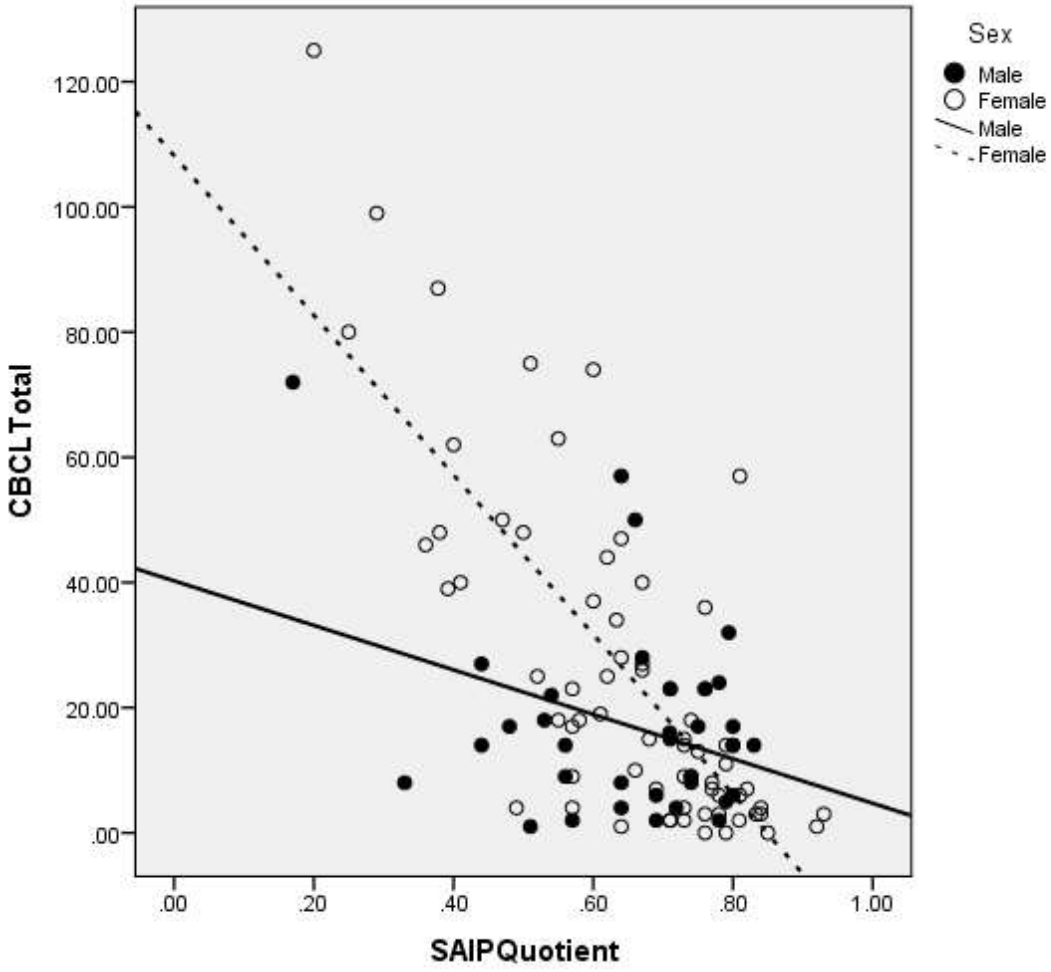

Figure 1. Strengths (SAIP Quotient) X sex interaction effect for predicting mental health concerns (CBCL Total).

Association between strengths and clinical status

Preliminary analyses comparing strengths scores for clinical and non-clinical participants produced mixed results. Given findings from the literature (including results from the present study), which show a negative relationship between strengths and continuous measures of mental health concerns, it is theoretically plausible that strength scores will be lower for clinical groups compared to non-clinical groups. In the present study, results looking at parent reports of adolescent strengths confirmed this theory. However, results looking at adolescent self-reports failed to provide these results. While these results may put into question the SAI's ability to distinguish between expected groups, they may also be a reflection of a small clinical population or measurement biases. In particular, adolescent self-reports may provide a measure of strengths that is unique, which influences the relationship between strengths and mental health concerns. Additional research looking at this relationship is needed.

Association between overall strengths and mental health scores

Overall, results demonstrated a significant negative association between strengths and continuous measures of mental health concerns. Although this relationship was not significant when results from the SAIC and BCFPI were considered, this discrepancy is likely better explained by the variation in raters between the two measures (the SAIC was completed by youth, while the BCFPI was completed by parents). When results using the same raters were considered, high strength scores were consistently related to low scores on mental health domains. These results are consistent with the existing literature (Cosden et al., 2004; Farmer et al., 2005; Lindemann, 2001; Lyons et al., 2000; Oswald et al., 2001; Reid et al., 2000; Walrath et al., 2004).

For example, Farmer et al. (2005) found that parent reports of adolescent strengths were negatively associated with parent reports of adolescent risk factors in a rural low-income community. Similarly, results from the Lyons et al. (2000) study showed that fewer adolescent strengths were associated with greater symptoms, risk behaviours, and functional impairment. Other researchers have shown that strengths can successfully discriminate between adolescents with and without mental health concerns (LeBuffe & Shapiro, 2004). Researchers have also shown that level of strengths measured prior to treatment predicted the successful reduction of risk behaviours throughout a residential treatment program (Lyons et al., 2000), and that the negative association between strengths and pathology persists over time (Lindemann, 2001).

Association between strength domains and individual measures of mental health

Given the overall relationship between adolescent strengths and mental health concerns, it was hypothesized that individual strength domains would also be negatively correlated to individual mental health domains. As expected, high scores on most individual strength domains were significantly related to low scores on most of the mental health domains. In other words, adolescents who scored high on individual strength domains had fewer problems in each mental health domain.

The most common strengths reported were family, school, peer, goal, and employment related strengths, while the least common strengths reported were spiritual and cultural strengths, community involvement, and recreational strengths. Strengths in personality, family functioning, school functioning, and peer functioning demonstrated the strongest association with overall mental health concerns. Similarly, Lyons and colleagues (2000) found that strengths in family functioning and personality were the most common

strengths and believed to be the most strongly associated with mental health concerns. Park and Peterson (2008) reported that spirituality was one of the least common strengths endorsed by youth, and that close relationships within the family and peer group showed the strongest association to positive mental health. Finally, results from the Oswald et al. (2001) study showed that mental health concerns were inversely related to all individual strength domains except academic functioning.

Of note, there were several comparisons in the present study between individual strength and mental health domains that failed to demonstrate a significant negative relationship. For instance, strengths in employment and spiritual and cultural identity appear to have the least impact on mental health concerns. Lyons and colleagues (2000) also reported that involvement in a religious group and identification of a career goal were two of the least common strengths endorsed among the adolescent population. Perhaps the low frequency of reported strengths in these areas resulted in an inability to establish clinical significance in their relationship to mental health concerns in the present study.

While strengths in employment and spiritual and cultural identity appeared to have the least impact on mental health concerns according to both parent and youth ratings, the remaining strengths showed some variation between parent and youth ratings. Parent ratings suggest that the remaining strengths all correlate significantly with most mental health concerns. According to youth self-report, however, strengths in leisure and recreation and peer functioning also failed to correlate with mental health concerns. These findings suggest that parent and youth reports of strengths and mental health concerns may provide uniquely different information. Parents may have a more objective view of their child's recreational and peer functioning, or youth ratings may provide a more

insightful assessment of these strengths. In order to capitalize on the impact strengths appear to have on mental health concerns in youth, more research examining the impact of individual strengths on mental health from the perspective of both parents and youth is required.

Each of the mental health domains showed a significant relationship with strengths, except for anxiety and depression concerns which were minimally impacted by strengths. The failure to show a significant negative correlation between adolescent strengths and internalizing symptoms (such as anxiety and depression concerns) has also been discussed in previous research. Harniss and colleagues (1999) found nonsignificant correlations between strengths and most of the internalizing problem dimensions assessed. The authors suggest that these findings may be due to the inadequacy of rating scales in measuring internal states. Epstein, Nordness, and colleagues (2002) also suggest that measuring strengths using a rating scale may hamper the ability to assess internal states, and suggest that strength scales tend to be more focused on externalizing traits. These observations, in combination with results from the present study, suggest that more research on the assessment of internal states is warranted.

Individual differences in the strengths and mental health relationship

When individual differences in the strengths and mental health relationship were considered, results showed that demographic variables and family characteristics impacted the relationship differently when parent ratings were considered compared to adolescent ratings. Overall, strengths had a unique impact on mental health scores, even after the influence of several demographic and social / environmental variables were considered. Several analyses revealed that sex and emphasis on moral and religious values within the

family also uniquely contributed to the variance in mental health scores, particularly when adolescent reports were considered. When parent ratings were considered, however, the relationship between strengths and mental health appeared to be more consistent across demographic subgroups. When parent ratings were considered, sex appeared to impact mental health concerns, but these results were not significant.

Further analyses revealed that, when parent reports were considered, there was a significant interaction effect of sex on the relationship between strengths and mental health. In other words, although sex did not appear to have a unique impact on parent ratings of mental health scores when the impact of other variables were also considered, the association between strengths and mental health changed as a function of sex in the present study. The relationship between strengths and mental health appears to be stronger for females than for males.

Of note, while individual strengths in spiritual and cultural identity impacted mental health concerns minimally (as discussed previously), family emphasis on moral and religious values did significantly impact mental health concerns according to adolescent self-reports. Perhaps the assessment of adolescent strengths should include an emphasis on morality and religion specifically (in addition to questions related to spirituality and cultural values). Future research in this area needs to consider what these different but related terms mean to adolescents and their parents, and further examine how these various domains impact mental health concerns.

Previous research has reported that living situation, sex, age, and certain family characteristics may impact adolescent strengths and mental health concerns separately (Epstein, Ryser, et al., 2002; Epstein, Synhorst, Cress, & Allen, 2009; Friedman et al., 1995;

Godley et al., 2005; & Oswald et al., 2001). It was reasonable to assume then, that these variables would also impact the relationship between strength and mental health scores. While results from the present study did demonstrate that sex impacted the relationship between strengths and mental health concerns, the remaining variables did not significantly predict mental health outcomes, and the interaction of these variables with strengths scores, therefore, was not explored.

As discussed previously, the study by Walrath and colleagues (2004) was the first and only known attempt to empirically examine individual differences in the strengths and mental health relationship on a broad scale in a clinical setting, prior to the present study. Walrath and colleagues found that boys had higher strengths at greater levels of impairment compared to girls, but that the relationship did not differ as a function of the other demographic variables considered. Age and ethnicity appeared to impact the relationship, but results were not clinically significant. The researchers did not consider the impact of additional social or environmental variables on the relationship.

These results are relatively consistent with results from the present study, as both studies found sex to significantly impact the relationship between adolescent strengths and mental health concerns. The study by Walrath et al. showed that males had greater strength scores at greater levels of functional impairment compared to females. In other words, the negative correlation between strengths and mental health appeared to be weaker for males. Similarly, results from the present study indicate that the relationship is stronger for females than it is for males. Therefore both studies support sex as a moderator variable in the relationship between strengths and mental health.

It should be noted that, while certain family characteristics impacted mental health concerns in the present study when adolescent reports were considered, additional social/environmental variables were not considered in the study by Walrath and colleagues. Further, the study by Walrath and colleagues (2004) only examined parent ratings of strengths and impairment, and adolescent self-reports were not considered. Results from the present study suggest that multiple informants may provide unique and valuable information in further understanding the relationship between strengths and mental health. Demographic and family variables may have a greater impact on mental health concerns when considered from the viewpoint of the adolescent, as results from the present study suggest.

Psychometric properties of the Strength Assessment Inventory

The present study also provided valuable information on the psychometric properties of the SAI. For instance, content validity and internal consistency (a measure of test reliability based on inter-item correlations) of the measure were firmly established. Content validity for the SAI was established through a systematic item selection process, ensuring that test items were measuring the intended construct. The ability of the SAI to generalize between males and females was also demonstrated. However, results failed to show that the tool can be generalized among different cultural populations. Specifically, results from the present study suggest that groups based on ethnicity may differ in the type and quantity of strengths reported. Additional research is necessary in order to explore this finding further.

Concurrent validity (the degree to which a measure correlates with a previously validated test) was also established for the SAI based on results from the present study.

Strong correlations between the overall strength scores from the SAI and the BERS-2 (an established strength-based assessment tool), as well as between theoretically similar strength domains on each of these measures were demonstrated. The discrepancy noted between the SAI employment subscales and the BERS-2 career subscale was expected given the item content of these subscales. Specifically, the SAI employment subscale assesses employment related skills (such as "uses money carefully," and "works well with others"), while the BERS-2 career subscale items are oriented more towards career planning (i.e., "actively plans for his or her future," and "has identified career goals"). The SAI's spiritual and cultural identity subscale was not significantly correlated with any of BERS-2 subscales, suggesting that this subscale provides unique information. In other words, these items assess aspects of an adolescent's strength profile that are not captured by the BERS-2. As noted previously, correlations between the SAIP and the BERS-2 subscales were more modest compared to the correlations between the SAIC and BERS-2 subscales. Also, the correlation between the BERS-2 Strength Index and the SAIC Strength Quotient was stronger than the correlation between the BERS-2 Strength Index and the SAIP Strength Quotient. Low inter-rater agreement may account for both of these results, since parents completed the SAIP and youth completed the BERS-2.

The present study failed to provide strong evidence of parent-child agreement on SAI ratings. Parent and youth ratings of strengths were significantly correlated, but correlations failed to meet the criteria for optimal reliability values. Low agreement between parent and youth reports suggests that parent and youth reports of strengths provide uniquely different information. These results are consistent with much of the existing literature comparing strength scores from multiple informants. van der Meer,

Dixon, & Rose (2008) reported low agreement between parents and children using the Strength and Difficulties Questionnaire. Taylor (2003) also examined the difference in strength scores from multiple informants, and found that parent and professional reports of adolescent strengths differed significantly. In fact, previous research suggests that rating scales from multiple informants rarely agree (Achenbach, McConaughy, & Howell, 1987; Friedman et al., 1999; Oswald et al., 2001). Although some studies have reported moderate to high levels of agreement between raters of strength-based assessment measures (Synhorst et al., 2005; Epstein et al., 1999; Friedman et al., 2003), many of these studies looked at results from adult dyads and did not examine parent-child agreement. Research has shown that, while agreement of strength-based rating scales between multiple informants is limited, parent and youth ratings tend to produce the greatest inconsistencies (Synhorst et al., 2005; Taylor, 2003; Van Roy, Groholt, Heyerdahl, & Clench-Aas, 2010).

Deficit-based measures tend to produce even greater rates of inconsistency between raters (McConaughy, Stanger, & Achenbach, 1992; Orliss, 2005; Van Roy et al., 2010). In a meta-analytic review of 119 studies, Achenbach and colleagues (1987) reported a relatively high level of agreement ($r = 0.60$) between similar informants on deficit-based rating scales, but only small degrees of association ($r = 0.28$) were found between different types of informants overall. Specifically, parent and youth ratings of behavioral and emotional problems showed low levels of agreement ($r = 0.25$). Of note, researchers also reported that correlations between multiple informants were significantly lower for adolescents compared to younger children.

In contrast to these findings as well as results from the present study, Synhorst and colleagues (2005) reported greater consistency between parent and youth ratings of

strengths. Moderate cross-informant agreement was reported when researchers assessed the inter-rater reliability of the BERS-2 using parent and youth reports. Correlations between parent and youth ratings were higher than is typically reported between this dyad. The discrepancy between our results and those from the Synhorst et al. study may be due to differences in participant characteristics. For instance, the present study included clinical participants, whereas the Synhorst et al. study assessed a non-clinical group of adolescents.

As the present study suggests, there are some inconsistencies between adolescent strengths and mental health concerns reported by parents and those reported by the adolescents themselves. This discrepancy may be attributed to family dynamics, temporal and contextual changes in adolescent behaviour, the presence and severity of clinical characteristics, parental psychopathology, and demographic factors (Friedman et al., 1999; Van Roy et al., 2010). When looking at behavioural problems in adolescents, Younstrom, Loeber, & Stouthamer-Loeber (2000) found that parents who were experiencing mood and anxiety related concerns reported higher levels of functional impairment compared to their children. Van Roy and colleagues (2010) found that adolescents reported more emotional and behavioural problems than did their parents, and suggested that this discrepancy may have been due to qualitative aspects of the parent-child relationship and family dynamics at the time of the assessment. Results from the present study support the notion that demographic variables and characteristics of the family do influence adolescents' perceptions of problems and strengths. In addition, previous studies have also suggested that inter-rater reliability may be less consistent for internalizing versus externalizing

characteristics (Costello, Edelbrock, & Costello, 1985; Silverman & Eisen 1992), which may have further impacted results from the present study.

These results highlight the importance of assessing strengths using multiple informants in order to provide a more holistic view of youth strengths (Synhorst et al., 2005). The consideration of both parent and youth ratings is a strength of the present study. Very few previous studies in the strength-based literature have looked at the relationship between strengths and mental health concerns from the perspective of parents as well as the adolescents themselves.

Overall, results from the present study support the notion that adolescent strengths are inversely related to mental health concerns, and that this relationship appears to be impacted by demographic variables, family characteristics, and informant type. The present study also provided valuable information on the psychometric properties of the newly developed SAI, yielding evidence to suggest that it is a robust instrument. Specifically, content validity, internal consistency, external validity, and concurrent validity of the SAI were established. Results from the present study demonstrated low levels of concordance between the parents/guardians and youth ratings of strengths using the SAI, and possible explanations for this are discussed. As with any new instrument, further evaluation of the psychometric characteristics is required.

Study Strengths

Overall, the design of the present study is quite sound. A particular strength of the methodology was the relatively large sample size, including both clinical and nonclinical participants. An additional strength of the present study was the use of well-established and reliable adolescent assessment measures, as well as the use of multiple measures of

strengths and mental health. Incorporating multiple measures of strengths and mental health allowed for the examination and reduction of potential biases with individual measures. The present study also capitalized on the use of multiple informants, using both parent and youth ratings of strengths and mental health concerns. The current study was the first of its kind to empirically examine the impact of additional independent variables on the strengths and mental health relationship, while considering the perspectives of both parents and youth.

Study Limitations

Several limitations of the present study should also be noted. First, it may be argued that our sample was biased given the participant selection process. The present study relied exclusively on volunteers, and only data from parents who completed forms within a reasonable period of time were included in analyses. Characteristics of individuals who volunteer for experiments may differ to some extent from the general population, and thus, may influence the generalizability of our findings. It is likely that the least compliant adolescents were not located through the recruitment procedure. Further, there may have been an impact of demand effect since a monetary reward was offered to participants.

The generalizability of this research may be limited in other ways as well. For instance, the sample included adolescents from a single geographic region, and participants were not randomly selected. Results from this Northern Ontario based population cannot be directly generalized to other populations. It is possible that these results would differ if replicated across a more diverse population from samples across the country.

The lack of ethnic diversity and the small number of clinical participants included in our sample may have further limited the generalizability of this research. Clinical

participants made up only 12% of our total sample, and 89% of our total sample was from a majority ethnic background. Difficulty recruiting participants, especially for the clinical group and those from different ethnic backgrounds, resulted in less than optimal sample sizes in comparison groups. As a result, the sample may not account for the representation of ethnic minorities, such as Aboriginal youth, who may have different strengths and mental health concerns than non-Aboriginal youth. Generalizability to other regions and to groups of ethnic minorities must be cautiously considered. Also, while mental health concerns, and not clinical diagnoses, were assessed in the present study, recruiting more participants from clinical settings (with more severe mental health concerns) would have provided greater diversity for comparison.

Although the present study was the first of its kind to empirically examine the impact of demographic and environmental variables on the relationship between adolescent strengths and mental health concerns, there remains a wide range of variables that were not assessed in the current research. Additional variables that might also influence the strengths and mental health relationship include household income, parental education and employment status, a current or previous course of psychological or pharmacological treatment, family size, and parental psychopathology.

In addition, the version of the Strength Assessment Inventory (Rawana et al., 2006) used in the present study has since been modified and several improvements were made on the instrument during the latest revisions. It is possible that the data on the students' strengths were not as accurate as they might have been with the revised instrument.

Although the large sample size used in the present study minimizes the impact of skewed data, the distribution of SAIP scores did violate the assumption of normality.

Although significant skewness often does not deviate enough from normality with large sample sizes to make a substantive difference in analyses (Tabachnik & Fidell, 2001), this is another limitation of the present study.

Finally, the study did not investigate how the relationship between strengths and mental health changes over time. Previous research suggests that this may be a dynamic relationship (Epstein, Hertzog, et al., 2001; Farmer et al., 2005), and understanding how adolescent strengths impact emotional and behavioural development over time is essential to the development of strength profiles. The cross-sectional design of the study also prevented the assessment of the test-retest reliability of the SAI. These concerns argue for a prospective study of adolescent strengths.

Despite these short-comings and the need for further research, the present findings contribute significantly to the strength-based literature, and specifically, to the development of strength-based assessment measures. The current investigation suggests that the SAI is a valid and reliable assessment tool and may be recommended as a measure of adolescent strengths.

Clinical Implications

Results from the present study support an inverse relationship between adolescent strengths and mental health concerns. Further, results inform our understanding of which strengths most impact mental health, demonstrate how clinical characteristics influence overall strength scores, and identify individual difference variables that appear to impact the strengths and mental health relationship. In this way, results from the present study contribute to the development of adolescent strength profiles. Establishing strength

profiles may provide guidelines to aid in assessment, prevention, and intervention efforts aimed at reducing mental health disorders among the adolescent population.

Assessment. The growth of a strength-based approach to treating adolescents requires the development of comprehensive strength-based assessment tools. Despite the need for future research, results from the present study indicate that the SAI is a psychometrically sound instrument. Given the paucity of existing strength-based assessment measures, these results support the use of the SAI as a valuable contribution to the assessment of adolescent strengths, and may be superior to any existing strength-based measures in the depth and breadth of strengths assessed. Specifically, the SAI assesses a number of strengths (including strengths related to a youth's spiritual and cultural identity) that are not assessed by existing strength-based assessment measures. The SAI may be useful in measuring individual strength profiles among youth, which in turn, can inform case management strategies and intervention efforts.

Prevention. The mental health literature indicates that up to 20% of preschool aged children demonstrate emotional or behavioural dysfunction, which may be predictive of psychological disorders later in life (Cress, Epstein, & Synhorst, 2010). For instance, 75% of anxiety disorders begin in childhood or adolescence (Kessler, Berglund, Demler, Jin, & Walters, 2005). These findings highlight the need for increased focus on prevention efforts. Early identification of risk factors and prevention efforts in children and adolescents may be more effective than treating well established mental health problems in adults (Cress et al., 2010). In a recent meta-analysis, Wolf (2005) found that prevention efforts are effective in maximizing skills and competencies and minimizing problems in children and adolescents.

Despite these findings, many youth with mental health concerns are not being identified or treated until well into their adolescence (Levitt, Saka, Romanelli, & Hoagwood, 2007; Forness et al., 2000). While the medical establishment has emphasized the importance of checkups in the identification and prevention of disease for years, the same cannot be said for mental health services (Fox, Halpern, & Forsyth, 2008). Improving early identification and prevention efforts in mental health services could reduce the prevalence of psychological disorders or minimize their impact, which in turn, could minimize the personal and social costs associated with mental health problems.

It has been suggested that the failure to adequately implement mental health prevention programs is partially due to the inability to identify asymptomatic youth (Levitt et al., 2007). However, as the present study suggests, prevention programs focusing on strengths may help to alleviate this problem. Other research has also demonstrated that strengths identified during adolescence may contribute to a decreased risk of developing a wide range of behavioural problems and psychiatric disorders during early adulthood (Bromley et al., 2006).

Understanding the relationship between adolescent strengths and mental health concerns, and the development of adolescent strength profiles may contribute significantly to current prevention efforts. Assessing strengths or a lack of strengths in particular areas may be a precursor allowing earlier identification of youth who are at risk of developing mental health concerns. Until recently, efforts aimed at preventing mental health problems among adolescents have focused on the early identification of symptoms and deficits (Farmer et al., 2005). However, a strength-based approach can be implemented prior to the emergence of problematic behaviours. Improving our understanding of adolescent

strength profiles can guide these early intervention efforts. Rather than waiting for the onset of challenging symptoms, children can be assessed for the absence or relative weakness of strengths, and intervention programs can be implemented to expand individual strength profiles (LeBuffe & Shapiro, 2004).

For instance, Albrecht and Braaten (2008) assessed a group of 110 elementary school students and found that students referred for disciplinary action reported significantly fewer strengths compared to students who were never referred. Given the relationship between strengths and early behaviour problems, the authors suggest that strength-based assessments may be critical in facilitating prevention programs by identifying youth lacking behavioural competencies, thus allowing intervention strategies to be implemented early. Early intervention may help to identify youth who are at risk for developing behaviour problems, preclude behavioural problems resulting in disciplinary action, and ultimately reduce the number of students at risk for antisocial behaviour and school failure (Albrecht & Braaten, 2008).

Strength-based programs also have the potential to help nonclinical individuals resolve problems, as well as to achieve personal goals and make positive contributions to their community (Brownlee et al., 2012). In this way, strength-based programs may help to prevent problems and enhance functioning among nonclinical populations. Results from the Brownlee et al. (2012) study demonstrated the potential of the strengths perspective in a nonclinical population. Researchers studied the impact of a strength-based approach to teaching. A strengths assessment and treatment model was administered with every student in an elementary school and not only those students considered “at risk.” According to Brownlee and colleagues, the strength-based program implemented by the

school resulted in a more positive school environment overall. The program transformed the way in which teachers communicated with their students, improved the way in which students perceived their own potential, and provided increased motivation for students to overcome barriers and achieve their goals (Brownlee et al., 2012). These results provide preliminary support for the use of strength-based programs in nonclinical populations.

Treatment. Over the past two decades, researchers and clinicians have begun to recognize that deficit-based treatment programs are not adequately meeting the needs of adolescents with emotional and behavioural disturbances (Nickerson et al., 2004). Although adolescents often improve while in treatment, these gains are not maintained following treatment termination (Curry, 1991). A strength-based approach to treatment encourages internal changes, which maximizes the transfer of treatment gains. Rather than simply altering problematic behaviour, strength-based interventions address the underlying problems (Jimerson et al., 2004). Adolescents are provided the opportunity to learn skills and competencies that will moderate the impact of environmental risks and help them to maintain treatment gains in a less restrictive environment (Lietz, 2004). Given the considerable social and biological changes experienced throughout adolescence (Brown, 2001), the introduction of strength building strategies to existing intervention programs could prevent the onset of psychological problems, minimize the negative impacts of developmental challenges, and improve treatment outcomes.

Despite the growing interest in strength-based intervention programs, a framework for strength-based assessments and intervention guidelines has been lacking. In general, clinicians interested in strength-based interventions have been encouraged to identify existing strengths, encourage and support these strengths in the child's environment, and

provide opportunities for the development of new and existing strengths (Epstein & Sharma, 1998; Wieck et al., 1989). Recently, researchers have begun to discuss the critical elements of a strength-based intervention more specifically (Cox, 2008; Rawana & Brownlee, 2009).

For instance, Cox (2008) proposed a three-step process for building on youth strengths. The steps include conducting a thorough assessment of the adolescent's personal strengths, followed by a formal process of strengths recognition (Cox, 2008). Finally, Cox recommends creating an "enabling niche" rich in resources and rewards, in which youth are encouraged to make some positive changes.

Rawana and Brownlee (2009) also proposed a framework for strength-based interventions. Theirs relies on a comprehensive assessment of strengths, incorporating a self-evaluation as well as evaluations by significant others. Four foundational components (engagement, exploration, expansion, and evolution) are introduced to guide treatment formulation (Rawana & Brownlee, 2009). Each of the four stages in the proposed strength assessment and treatment model emphasizes the identification and utilization of the adolescents' strengths (Rawana & Brownlee, 2009). In the first stage ("engagement"), relationships between youth and significant others are formed which centre on youths' positive attributes (Brownlee et al., 2012), thus setting the tone for subsequent interactions. A comprehensive assessment of youth strengths occurs in the "exploration stage," followed by an examination of how these strengths can help to alleviate life challenges in the "expansion stage." Finally, in the "evolution stage," youth are encouraged to utilize their strengths in order to implement change (Brownlee et al., 2012). Duncan and colleagues (2007) add that, while establishing trust and rapport within relationships is

critical (as suggested in Rawana and Brownlee's "engagement" stage), establishing trust and rapport within the treatment environment could also contribute to a successful strength-based intervention.

In general, there is good preliminary research evidence to support the effectiveness of intervention programs that identify and support adolescent strengths (Bromley, et al., 2006; Brownlee et al., 2009; Jimerson et al., 2004; Lietz, 2004; Murray & Belenko, 2005; Park & Peterson, 2008; Tedeschi & Kilmer, 2005; Oswald et al., 2001). In fact, it has been suggested that intervention programs aimed at identifying and enhancing strengths can reduce negative symptomatology in children and adolescents better than, or as well as, deficit-based intervention programs (Park & Peterson, 2008; Rudolph & Epstein, 2000).

For instance, Johnson (2003) examined the effect of a strength-based intervention program on treatment retention and treatment success. Treatment aimed to foster interpersonal strengths, strengths in personality, and strengths in family functioning. Researchers found that the strength-based intervention program resulted in higher treatment retention rates, a decrease in the number of required treatment sessions, and increased competencies post-treatment. Gensterblum (2002) also examined the impact of a strength-based treatment model, and found that the adolescents in the program demonstrated significantly more adaptive behaviours and significantly fewer maladaptive behaviours following treatment.

Clearly, the implementation of strength-based interventions is only in its infancy, and further investigation is required. Results from the present study lend support to the use of strength-based interventions as a viable treatment option, by demonstrating a clear relationship between strengths and mental health concerns, and introducing adolescent

strength profiles to guide treatment decisions. Results from the present study also highlight the importance of demonstrating flexibility when applying strength-based intervention techniques to accommodate individual and cultural differences (Rashid, 2009). For instance, results from the present study indicate that the relationship between strengths and mental health is stronger for females than it is for males. Although further investigation is required, these results suggest that implementing strength-based interventions might be particularly relevant when treating female adolescents.

Directions for Future Research

The present study makes a significant contribution to the strength-based literature by enhancing our understanding of the theoretical relationship between adolescent strengths and mental health. Applying this knowledge to existing clinical practices will allow for a more holistic approach to treating adolescents with mental health concerns. Future research efforts need to focus on developing and testing strength-based intervention programs, using randomized controlled trials, in order to provide structure to the practice of strength-based interventions and empirical support for their effectiveness.

Although results from the present study add considerably to our understanding of the complex relationship between adolescent strengths and mental health, future research is needed to examine this relationship further. Future research will help to clarify why particular strengths appear to have a greater impact on certain mental health concerns, to shed light on the intervening variables in the strengths and mental health relationship, and ultimately to establish adolescent strength profiles. In particular, future research is needed to replicate the findings discussed in the present study regarding the impact of sex on the relationship between strengths and mental health, and to examine the impact of variables

not discussed in the current research. For instance, future research looking at the impact of family size, household income, parental education and employment, psychological or pharmacological treatment efforts, and parental psychopathology on the relationship between strengths and mental health, could help to propagate the development of adolescent strength profiles.

The relationship between adolescent strengths and mental health could be further elucidated by replicating the current study using a more clinically and ethnically diverse population. Broadening these comparison groups to include youth from different cultural and racial backgrounds (including Aboriginal youth), as well as adolescents with more severe or a broader range of mental health concerns, would provide greater diversity for comparison, thus broadening our understanding of adolescent strength profiles and allowing us to generalize results with more confidence. Grouping clinical participants by diagnoses and systematically assessing differences in strength profiles between groups could also add considerably to the information provided in the present study.

Although there have been major strides in understanding the complex relationship between adolescent strengths and mental health, the present research does not shed any light on how the strengths and mental health relationship changes over time. Additional research is needed to help clarify the dynamic nature of this relationship. In particular, longitudinal research could further our understanding of developmental changes in adolescent strength profiles and of how these changes impact the strengths-mental health relationship over time. Longitudinal research in this area could improve our understanding of the temporal relationship between developing strengths and mental

health concerns, and allow researchers to consider the long-term effect of strengths on emotional and behavioural development.

Furthermore, longitudinal research would allow the opportunity to examine the causal link between strengths and mental health. The emphasis of the present study is on the clinical utility of the strength-based approach to the prevention, assessment, and treatment of mental health concerns in youth. Therefore, results were interpreted in terms of the impact strengths have on mental health. However, the correlational nature of the present study prevented any indication of actual causation. Describing how strengths and additional independent variables impact mental health is theoretically the most informative interpretation, but a clear causal model cannot be assumed. While focusing on the impact strengths have on mental health concerns in youth has practical implications, future research needs to consider the direction of the causal link and the notion that mental health concerns may also impact the development of strengths.

Longitudinal research could also provide the opportunity for additional reliability testing of the SAI. Specifically, the short-term and long-term test-retest reliability of the SAI could be determined by assessing the stability of scores across time. As with any newly developed assessment measure, researchers should continue to examine the psychometric characteristics of the SAI with larger and more diverse samples. The preliminary results from the present study also highlight the need to examine multiple informants in strengths assessment, and the differential impact of intervening variables when multiple informants are considered.

Summary of Research

Results from the present study contributed to the development of adolescent strength profiles. Replicating previous findings demonstrating an inverse relationship between strengths and mental health concerns increased the robustness of the strength-based research. The present study advanced our understanding of this relationship by making use of multiple informants in examining the impact of individual difference variables. The present study also contributed to the assessment of adolescents, by providing valuable information on the psychometric properties of the newly developed SAI.

As with any field of scientific inquiry, our knowledge and understanding of adolescent mental health is an evolving process. Historically, mental health service providers have taken a problem-focused approach in assessing and treating adolescents with mental health concerns. The traditional deficit-based approach has contributed significantly to the evolutionary process of adolescent mental health research. The more recent shift in focus towards positive psychology and strengths, however, is essential in advancing knowledge of adolescent mental health. The current study demonstrates the importance of strengths in understanding adolescent mental health and further advances the evolutionary process of strength-based research.

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Appendix A

Strength Assessment Inventory –C

STRENGTH ASSESSMENT INVENTORY FOR CHILDREN AND ADOLESCENTS

CHILD/ADOLESCENT SELF-REPORT FORM

This Strength Checklist reflects areas of strengths of the child/adolescent in:

1) Family / Home Functioning
2) School Functioning
3) Employment
4) Leisure and Recreation
5) Peer Functioning
6) Personality Functioning
7) Personal and Physical Care
8) Community Involvement
9) Spiritual and Cultural Identity
10) Current and Future Goals

By:
Rawana, E.P., Brownlee, K., and Hewitt, J., (2006)
Modified from: **Rawana, E.P., Cryderman, B., and Thompson, B. (2000)**

Instructions: The Strength Checklist can be completed by the child/adolescent.

Please answer questions focusing on the **last 6 months** and answer as honestly as possible. Some of the items may not apply. Please make your best effort to answer each question and only check *Does Not Apply* if absolutely necessary. Feel free to write additional comments in the spaces provided.

DATE: February 23, 2006

Full Name: _____
FIRST MIDDLE LAST

Male ☐ Female ☐

Age: _____

Birth Date: Month _____ Day _____ Year _____

Ethnic Group or Race:
- Caucasian ☐
- Black ☐
- Asian ☐
- Native ☐
- Hispanic ☐
- Other: _____

School: _____

Grade: _____

Home schooled: ☐ Not attending school: ☐

Current Living Situation (e.g., with both parents, group home, foster home): ____

_____

_____

Today's Date: Month _____ Day _____ Year _____

Strength in the Family / Home Environment

In this section we are interested in understanding your strengths in the family / home environment.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I express concern for other family members.					
I enjoy participating in family activities.					
I trust a family member with important information.					
I get along with my brothers or sisters.					
I get along with other family members.					
I care that my behaviour upsets other family members.					
I follow the rules at home.					
I am especially close to one or more family members. If yes, please provide the name and relationship of this person:					
I take responsibility for my behaviour within the family.					
I am respectful to family members.					
I complete chores when asked.					
I am open and honest with my parent(s) or guardian(s).					
I care for a pet.					

Comments: _____

_____

_____

Strength in School Functioning

In this section we are interested in understanding your strengths in the school environment.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I study for tests.					
I use note-taking in school (e.g., copying from the board, writing what the teacher is saying).					
I use listening skills in school.					
I pay attention in class.					
I work by myself in the classroom when it is appropriate to do so.					
I complete homework assignments.					
I achieve at or above my grade level in reading.					
I complete work on time in the classroom.					
I have a positive relationship with school staff.					
I get involved in school sports (e.g., try out for teams, support teams).					
I get involved in school activities.					
I enjoy school.					
I go to my classes.					
I arrive on time to my classes.					

Comments: _____

_____

_____

Strength Related to Employment

In this section we are interested in understanding your strengths in employment attitudes and behaviours.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I use money carefully (e.g., saving, budgeting).					
I offer to do odd jobs for money (e.g., extra chores, shoveling snow, cutting grass).					
I take steps to prepare for employment (e.g., babysitting course, CPR course, preparing a resume).					
I apply for jobs, or contact possible employers.					
I show up for work.					
I arrive on time for work.					
I work hard when on the job.					
I work well with others.					

Comments: _____

_____

_____

Strength in Leisure/Recreational Activities

In this section we are interested in understanding your strengths in leisure and recreation.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I like to watch non-violent sports on T.V. (e.g., football, baseball, hockey).					
I am a fan of a sports team.					
I watch an educational T.V. show.					
I take part in a particular sport outside of school.					
I enjoy listening to music.					
I play a musical instrument.					
I like to read.					
I like to write (e.g., poems, stories, journal entries).					
I use the computer for age-appropriate activities.					
I enjoy artistic activities (e.g., photography, drawing, crafts).					
I take part in community activities.					
I baby-sit or care for younger children.					
I can find appropriate activities to do when I'm bored.					
I take part in physical activity (e.g., going for walks, bike rides, roller blading).					
I enjoy baking or cooking.					
I enjoy games (e.g., board games, card games, age-appropriate video games).					
I am willing to try new activities.					

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I enjoy outdoor activities (e.g., hunting, fishing, camping).					
I enjoy other hobbies (e.g., card collecting, scrap booking).					

Comments: _____

_____

_____

Strength in Peer Relationships

In this section we are interested in understanding your strengths in peer relationships. (That is, relationships with people around your own age.)

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I associate with a positive peer group.					
I experience concern for my peers.					
I am open and honest with my peers.					
I demonstrate leadership with my peers.					
I am accepted by my peers.					
I get along with a peer group.					
I can determine safe and unsafe behaviours and make choices for myself in a peer group.					
I handle conflict with peers effectively and safely.					
I know when to access adult assistance for peer struggles.					
I am especially close to one or more friends.					

The following items apply to adolescents recently or currently involved in romantic relationships:

I am honest and open with my romantic partner.					
I am committed to healthy relationships.					
I make responsible choices regarding sexual relations.					

Comments: _____

_____

_____

Strength in Personality Functioning

In this section we are interested in understanding your strengths in personality.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I have sense of humour.					
I am enthusiastic about life.					
I am open to new experiences.					
I have a positive attitude towards life.					
I use anger management skills.					
I can identify my personal strengths.					
I am appropriately confident.					
I can accept disappointments.					
I can accept positive and/or negative feedback.					
I try to make up for my weaknesses in a positive way.					
I have a good sense of right from wrong.					
I am willing to ask for help when needed.					
I have effective problem solving skills.					
I demonstrate creativity or artistic skills.					
I can evaluate my own behaviours.					
I have a positive body image.					
I am able to cope with strong emotions (such as sadness and grief).					
I am able to self-regulate emotions.					

Comments: _____

_____

_____

Strength in Personal and Physical Care

In this section we are interested in understanding your strengths in personal and physical care.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I take part in fitness activities.					
I have good personal hygiene.					
I have good eating habits.					
I have good sleeping habits.					
I keep my personal space clean (dust, vacuum).					
I keep my personal space tidy (put clothes away, make the bed).					
I have an interest in fashion/style.					
I take medications as prescribed.					

Comments: _____

_____

_____

Strength Related to Community Involvement

In this section we are interested in understanding your strengths in the community environment.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I am an active member of a community organization that promotes a healthy lifestyle (e.g., club, team, program).					
I am respectful of community members and community leaders (e.g., police, teachers).					
I am respectful of community property.					
I attend community events.					
I volunteer in community events and/or organizations.					
I feel like a part of the community.					

Comments: _____

_____

_____

Strength Related to Spiritual and Cultural Identity

In this section we are interested in understanding your strengths in spiritual and cultural identity.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I participate in spiritual or religious activities (e.g., church, prayer).					
I feel a connection with nature.					
I have spiritual or religious beliefs.					
I actively participate in cultural or ethnic activities (e.g., dance, song, ceremony).					
I have a commitment to my cultural values.					
I am engaged in learning and expanding knowledge of my cultural heritage.					
I have a sense of pride in my ethnic roots or cultural heritage.					
I have respect for other cultural backgrounds.					
I have a sense of purpose and meaning in life.					
I speak a second language.					

Comments: _____

_____

_____

Current and Future Goals

In this section we are interested in understanding your strengths in future goals and aspirations.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
I am motivated to achieve future goals.					
I work to achieve or maintain a certain grade level in school.					
I have a plan for myself for the future (family, career, dreams).					
I anticipate and plan for future life changes.					
I have appropriate commitment to my goals.					
I am willing to work hard to achieve something in the next six months.					
I use appropriate planning skills.					

Comments: _____

_____

_____

Appendix B

Strength Assessment Inventory –P

STRENGTH ASSESSMENT INVENTORY FOR CHILDREN AND ADOLESCENTS

PARENTS, TEACHERS, AND MENTAL HEALTH STAFF FORM

This Strength Checklist reflects areas of strengths of the child/adolescent in:

11) Family / Home Functioning
12) School Functioning
13) Employment
14) Leisure and Recreation
15) Peer Functioning
16) Personality Functioning
17) Personal and Physical Care
18) Community Involvement
19) Spiritual and Cultural Identity
20) Current and Future Goals

By:
Rawana, E.P., Brownlee, K., and Hewitt, J., (2006)
Modified from: **Rawana, E.P., Cryderman, B., and Thompson, B. (2000)**

Instructions: The Strength Checklist can be completed with parents, teachers, or mental health staff who are familiar with the child/adolescent.

Please answer questions focusing on the **last 6 months** and answer as honestly as possible. Some of the items may not apply. Please make your best effort to answer each question and only check *Does Not Apply* if absolutely necessary. Feel free to write additional comments in the spaces provided.

DATE: February 23, 2006

Information about the child/adolescent: (Please Print)

Full Name: _____
FIRST MIDDLE LAST

Male ☐ Female ☐

Age: _____

Birth Date: Month _____ Day _____ Year _____

Ethnic Group or Race:
- Caucasian ☐
- Black ☐
- Asian ☐
- Native ☐
- Hispanic ☐
- Other: _____

School: _____

Grade: _____

Home schooled: ☐ Not attending school: ☐

Current Living Situation (e.g., with both parents, group home, foster home): _____

_____

Information about the person completing this questionnaire: (Please Print)

Name: _____

Relationship to Child / Adolescent: _____

Today's Date: Month _____ Day _____ Year _____

Additional Comments: _____

_____

_____

Strength in the Family / Home Environment

In this section we are interested in understanding the child's/adolescent's strengths in the family / home environment.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Expresses concern for other family members.					
Enjoys participating in family activities.					
Trusts a family member with important information.					
Interacts positively with siblings.					
Interacts positively with other family members.					
Cares that his/her behaviour upsets other family members.					
Complies with the rules at home.					
Is particularly close to one or more family members. If yes, please provide the name and relationship of this person:					
Takes responsibility for his/her behaviour within the family.					
Is respectful to family members.					
Completes chores as requested.					
Is open and honest with parents or guardian.					
Cares for a pet.					

Note: For teachers filling out this section, please answer only those items for which you have knowledge.

Comments: _____

_____

_____

Strength in School Functioning

In this section we are interested in understanding the child's/adolescent's strengths in the school environment.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Studies for tests.					
Uses note-taking in school (e.g., copying from the board, writing what the teacher is saying).					
Uses listening skills in school.					
Pays attention in class.					
Works independently in the classroom when appropriate.					
Completes homework assignments.					
Achieves at or above grade level in reading.					
Completes work on time in the classroom.					
Has a positive relationship with school staff.					
Gets involved in school sports (e.g., tries out for teams, supports teams).					
Gets involved in school activities.					
Seems to enjoy school.					
Attends classes.					
Arrives on time for classes.					

Note: For parents filling out this section, please answer only those items for which you have knowledge.

Comments: _____

_____

_____

Strength Related to Employment

In this section we are interested in understanding the child's/adolescent's strengths in employment attitudes and behaviours.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Uses money carefully (e.g., saves, budgets).					
Offers to do odd jobs for money (e.g., extra chores, shoveling snow, cutting grass).					
Takes steps to prepare for employment (e.g., babysitting course, CPR course, preparing a resume).					
Applies for jobs or contacts possible employers.					
Shows up for work.					
Arrives on time for work.					
Works hard when on the job.					
Works well with others.					

Comments: _____

_____

_____

Strength in Leisure/Recreational Activities

In this section we are interested in understanding the child's/adolescent's strengths in leisure and recreation.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Likes to watch non-violent sports on T.V. (e.g., football, baseball, hockey).					
Is a fan of a sports team.					
Watches an educational T.V. show.					
Participates in a particular sport outside of school.					
Enjoys listening to music.					
Plays a musical instrument.					
Likes to read.					
Likes to write (e.g., poems, stories, journal entries).					
Uses the computer for age-appropriate activities.					
Enjoys artistic activities (e.g., photography, drawing, crafts).					
Participates in community activities.					
Baby-sits or cares for younger children.					
Can find appropriate activities when bored.					
Participates in physical activity (e.g., going for walks, bike rides, roller blading).					
Enjoys baking or cooking.					
Enjoys games (e.g., board games, card games, age-appropriate video games).					
Is willing to try new activities.					

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Enjoys outdoor activities (e.g., hunting, fishing, camping).					
Enjoys other hobbies (e.g., card collecting, scrap booking).					

Comments: _____

_____

_____

Strength in Peer Relationships

In this section we are interested in understanding the child's/adolescent's strengths in peer relationships. (That is, relationships with children/adolescent's around the child's own age.)

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Associates with positive peer group.					
Experiences concern for peers.					
Is open and honest with peers.					
Demonstrates leadership with peers.					
Is accepted by peers.					
Interacts positively with peer group.					
Determines safe and unsafe behaviours and makes choices for self in peer group.					
Handles conflict with peers effectively and safely.					
Knows when to access adult assistance for peer struggles.					
Is particularly close to one or more friends.					

The following items apply to adolescents recently or currently involved in romantic relationships (please answer only those items for which you have knowledge):

Is honest and open with romantic partner.					
Is committed to healthy relationships.					
Makes responsible choices regarding sexual relations.					

Comments: _____

_____

_____

Strength in Personality Functioning

In this section we are interested in understanding the child's/adolescent's strengths in personality.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Demonstrates a sense of humour.					
Is enthusiastic about life.					
Is open to new experiences.					
Has a positive attitude towards life.					
Uses anger management skills.					
Can identify his/her personal strengths.					
Is appropriately confident.					
Can accept disappointments.					
Can accept positive and/or negative feedback.					
Tries to compensate positively for his/her weakness.					
Has a good sense of right from wrong.					
Is willing to ask for help when needed.					
Demonstrates effective problem solving skills.					
Demonstrates creativity or artistic skills.					
Evaluates own behaviours.					
Has a positive body image.					
Is able to cope with strong emotions (such as sadness and grief).					
Is able to self-regulate emotions.					

Comments: _____

_____

_____

Strengths in Personal and Physical Care

In this section we are interested in understanding the child's/adolescent's strengths in personal and physical care.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Participates in fitness activities.					
Has good personal hygiene.					
Has good eating habits.					
Has good sleeping habits.					
Keeps personal space clean (dusts, vacuums).					
Keeps personal space tidy (puts clothes away, makes the bed).					
Has an interest in fashion/style.					
Takes medications as prescribed.					

Comments: _____

_____

_____

Strength Related to Community Involvement

In this section we are interested in understanding the child's/adolescent's strengths in the community environment.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Active member of a community organization that promotes a healthy lifestyle (e.g., club, team, program).					
Is respectful of community members and community leaders (e.g., police, teachers).					
Is respectful of community property.					
Attends community events.					
Volunteers in community events and/or organizations.					
Feels part of the community.					

Comments: _____

_____

_____

Strength Related to Spiritual and Cultural Identity

In this section we are interested in understanding the child's/adolescent's strengths in spiritual and cultural identity.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Participates in spiritual or religious activities (e.g., church, prayer).					
Feels a connection with nature.					
Has spiritual or religious beliefs.					
Actively participates in cultural or ethnic activities (e.g., dance, song, ceremony).					
Shows a commitment to cultural values.					
Is engaged in learning and expanding knowledge of cultural heritage.					
Demonstrates a sense of pride in ethnic roots or cultural heritage.					
Demonstrates a sense of respect for other cultural backgrounds.					
Has a sense of purpose and meaning in life.					
Speaks a second language.					

Comments: _____

_____

_____

Current and Future Goals

In this section we are interested in understanding the child's/adolescent's strengths in future goals and aspirations.

	Not At All	Sometimes	Often	Very Often	Does Not Apply
Is motivated to achieve future goals.					
Works to achieve or maintain a certain grade level in school.					
Has a plan for self for future (family, career, dreams).					
Anticipates and plans for future life changes.					
Shows appropriate commitment to goals.					
Is willing to work hard to achieve something in the next six months.					
Uses appropriate planning skills.					

Comments: _____

_____

_____

Appendix C

Cover Letter Given to Principals

Assessment of Strength Profiles in Adolescents and the
Relationship to Mental Health Concerns

Dear Principal,

The Lakehead Public School Board has agreed to participate in a research project being done by members of the Department of Psychology at Lakehead University. We are writing to request your assistance with this research project, which was designed to examine adolescent strengths and mental health. Jennifer Hewitt is currently in the Doctoral program in Psychology at Lakehead University, and is undertaking this project as her dissertation. Dr. Rawana is a faculty member of the Psychology Department, and the supervisor of this project. This research project has been approved by the Lakehead University Senate Research Ethics Board (807-343-8283)

Researchers have only recently begun to examine the relationship between adolescent strengths and mental health, and very few studies have considered the impact of moderating variables on this relationship. The present study was designed to address this gap in the strengths literature. Enhancing our understanding of the relationship between strengths and mental health could contribute to improved identification of high-risk youth, advance preventative strategies, and inform treatment plans for children and adolescents.

Overall, the purpose of this study is to:

1) further our understanding of the relationship between adolescent strengths and mental health, and
2) establish the psychometric properties of a newly established strength-based assessment tool: the Strength Assessment Inventory for Children and Adolescents (SAI).

To accomplish these goals, we would like to assess youth between 12 and 17 years old, who are receiving services from the Children's Centre Thunder Bay. Study findings based on these clinical groups will be compared to a non-clinical population labeled the control group. We would like to assess youth between 12 and 17 years old from elementary schools and high schools within the Lakehead Public School Board to serve as control participants. Youth recruited from within the Lakehead Public School Board who are also receiving services from the Children's Centre Thunder Bay will not be singled out and will not be excluded from participating in the study. Instead, information obtained from these youth will be included in the appropriate clinical group.

We will require participating youth to complete four questionnaires. The questionnaires will take approximately 60 minutes to complete, and will include two measures of strengths, one measure of emotional and behavioral difficulties, and one measure of family functioning. Testing for individuals in the control group will be completed during one scheduled session with the investigator. A group administration of test measures will be conducted for control participants from elementary schools, and individual sessions will be conducted for control participants from high schools. The measures for all groups will include both self-report tools and tools administered by the investigator. In addition,

parents/guardians will be asked to complete three questionnaires regarding their son/daughter's strengths and functioning. These questionnaires will be provided to parents/guardians to complete at home and returned in a pre-paid envelope.

If you agree to participate, we will ask you to forward cover letters and consent forms to teachers, describing the study and asking them to distribute cover letters and consent forms to interested students. These cover letters and consent forms will be sent home with each student for the parent/guardian to review. Youth and parents/guardians interested in participating will be asked to return signed consent forms to the researchers. A drop box will be available at each participating school for returned signed consent forms.

There are no known physiological or psychological risks or harm associated with participating in this study. The benefits of participating in this study include being a part of research that could advance knowledge about strengths in adolescents and contribute to the growth of a strength-based approach to treating adolescents. In addition, relations between the parent and the child may benefit when there is an increased focus on the child's positive characteristics and behaviours (during the strengths assessment). Finally, focusing on strengths can empower youth and increase their self-esteem.

Potential participants will be assured that participation is completely voluntary. If a participant wishes to withdraw at any time during the study, he or she is free to do so without consequence. Participants will also be assured that all information will be anonymous and kept confidential, and that the information will be stored in a secure location at Lakehead University for a period of 7 years.

Upon completion of this research, participants, including the Lakehead Public School Board, principals, and teachers are entitled to receive a summary of the results. If you wish to access these results, or have any questions about this study, you may contact me by telephone at (807) 344-9365 or by email at jenny_hewitt@hotmail.com. Thank you very much for your time and consideration in this matter.

Sincerely,

Jennifer Hewitt, M.A.
Doctoral Candidate (Clinical Psychology), Psychology Department, Lakehead University

Dr. Edward Rawana, Ph.D., C. Psych.
Assistant Professor, Psychology Department, Lakehead University

Appendix D

Authorization Form for Principals

PRINCIPAL CONSENT FORM FOR PARTICIPATION

My signature on this form indicates that I agree to my school's participation in the study concerning strengths and mental health. This study is being conducted by Jennifer Hewitt in the Department of Psychology for her doctoral dissertation under the supervision of Dr. Edward Rawana. I have received explanations about the nature of the study, its purpose, and its procedures. A brief summary of the results of this study will be available upon request.

Signing this form indicates that I understand the following:

- Participation in this study is voluntary and students may withdraw at any time without explanation and without penalty.
- My involvement in the study (distribution of cover letters and consent forms) is also voluntary and I may withdraw at any time without explanation and without penalty to myself or to students.
- All information provided is anonymous and will be kept confidential.
- All information collected during the study will be number coded and any reports of this study will not identify individual students as participants.
- In accordance with university policy, the data collected will be securely stored for seven years at Lakehead University and remain anonymous and confidential.

There are no known physical or psychological risks associated with participating in this study. The benefits of participating in this study include being a part of research that could advance assessment and treatment alternatives aimed at reducing mental health disorders among the adolescent population.

Name (Please Print): _____

Signed: _____

Date: _____

Appendix E

Cover Letter Given to Teachers

Assessment of Strength Profiles in Adolescents and the
Relationship to Mental Health Concerns

Dear Teacher,

The Lakehead Public School Board has agreed to participate in a research project being done by members of the Department of Psychology at Lakehead University. We are writing to request your assistance with this research project, which was designed to examine adolescent strengths and mental health. Jennifer Hewitt is currently in the Doctoral program in Psychology at Lakehead University, and is undertaking this project as her dissertation. Dr. Rawana is a faculty member of the Psychology Department, and the supervisor of this project. This research project has been approved by the Lakehead University Senate Research Ethics Board (807-343-8283)

Researchers have only recently begun to examine the relationship between adolescent strengths and mental health, and very few studies have considered the impact of moderating variables on this relationship. The present study was designed to address this gap in the strengths literature. Enhancing our understanding of the relationship between strengths and mental health could contribute to improved identification of high-risk youth, advance preventative strategies, and inform treatment plans for children and adolescents.

Overall, the purpose of this study is to:

1) further our understanding of the relationship between adolescent strengths and mental health, and
2) establish the psychometric properties of a newly established strength-based assessment tool: the Strength Assessment Inventory for Children and Adolescents (SAI).

To accomplish these goals, we would like to assess youth between 12 and 17 years old, who are receiving services from the Children's Centre Thunder Bay. Study findings based on these clinical groups will be compared to a non-clinical population labeled the control group. We would like to assess youth between 12 and 17 years old from elementary schools and high schools within the Lakehead Public School Board to serve as control participants. Youth recruited from within the Lakehead Public School Board who are also receiving services from the Children's Centre Thunder Bay will not be singled out and will not be excluded from participating in the study. Instead, information obtained from these youth will be included in the appropriate clinical group.

We will require participating youth to complete four questionnaires. The questionnaires will take approximately 60 minutes to complete, and will include two measures of strengths, one measure of emotional and behavioral difficulties, and one measure of family functioning. Testing for individuals in the control group will be completed during one scheduled session with the investigator. A group administration of test measures will be conducted for control participants from elementary schools, and individual sessions will be conducted for control participants from high schools. The measures for all groups will include both self-report tools and tools administered by the investigator. In addition,

parents/guardians will be asked to complete three questionnaires regarding their son/daughter's strengths and functioning. These questionnaires will be provided to parents/guardians to complete at home and returned in a pre-paid envelope.

If you agree to participate, we will ask you to forward cover letters describing the study and consent forms to interested students, to be sent home with each student for the parent/guardian to review. Youth and parents/guardians interested in participating will be asked to return signed consent forms to the researchers. A drop box will be available at each participating school for returned signed consent forms.

There are no known physiological or psychological risks or harm associated with participating in this study. The benefits of participating in this study include being a part of research that could advance knowledge about strengths in adolescents and contribute to the growth of a strength-based approach to treating adolescents. In addition, relations between the parent and the child may benefit when there is an increased focus on the child's positive characteristics and behaviours (during the strengths assessment). Finally, focusing on strengths can empower youth and increase their self-esteem.

Potential participants will be assured that participation is completely voluntary. If a participant wishes to withdraw at any time during the study, he or she is free to do so without consequence. Participants will also be assured that all information will be anonymous and kept confidential, and that the information will be stored in a secure location at Lakehead University for a period of 7 years.

Upon completion of this research, participants, including the Lakehead Public School Board, principals, and teachers are entitled to receive a summary of the results. If you wish to access these results, or have any questions about this study, you may contact me by telephone at (807) 344-9365 or by email at jenny_hewitt@hotmail.com. Thank you very much for your time and consideration in this matter.

Sincerely,

Jennifer Hewitt, M.A.
Doctoral Candidate (Clinical Psychology), Psychology Department, Lakehead University

Dr. Edward Rawana, Ph.D., C. Psych.
Assistant Professor, Psychology Department, Lakehead University

Appendix F

Authorization Form for Teachers

TEACHER CONSENT FORM FOR PARTICIPATION

My signature on this form indicates that I agree to my school's participation in the study concerning strengths and mental health. This study is being conducted by Jennifer Hewitt in the Department of Psychology for her doctoral dissertation under the supervision of Dr. Edward Rawana. I have received explanations about the nature of the study, its purpose, and its procedures. A brief summary of the results of this study will be available upon request.

Signing this form indicates that I understand the following:

- Participation in this study is voluntary and students may withdraw at any time without explanation and without penalty.
- My involvement in the study (distribution of cover letters and consent forms) is also voluntary and I may withdraw at any time without explanation and without penalty to myself or to students.
- All information provided is anonymous and will be kept confidential.
- All information collected during the study will be number coded and any reports of this study will not identify individual students as participants.
- In accordance with university policy, the data collected will be securely stored for seven years at Lakehead University and remain anonymous and confidential.

There are no known physical or psychological risks associated with participating in this study. The benefits of participating in this study include being a part of research that could advance assessment and treatment alternatives aimed at reducing mental health disorders among the adolescent population.

Name (Please Print): _____

Signed: _____

Date: _____

Appendix G

Cover Letter Given to Intake Staff

Assessment of Strength Profiles in Adolescents and the Relationship to Mental Health Concerns

Dear CCTB staff,

We are writing to request your assistance in a research project that we are conducting on adolescent strengths and mental health. Jennifer Hewitt is currently in the Doctoral program in Psychology at Lakehead University, and is undertaking this project as her dissertation. Dr. Rawana is a faculty member of the Psychology Department, and the supervisor of this project. This research project has been approved by the Children Centre Thunder Bay and the Lakehead University Senate Research Ethics Board (807-343-8283).

Historically, mental health service providers have taken a problem-focused approach in assessing and treating children and adolescents with mental health concerns. More recently, intervention programs aimed at identifying and enhancing strengths have garnered considerable empirical support. However, researchers have only recently begun to examine the relationship between adolescent strengths and mental health, and very few studies have considered the impact of moderating variables on this relationship. The present study was designed to address this gap in the strengths literature. Enhancing our understanding of the relationship between strengths and mental health could contribute to improved identification of high-risk youth, advance preventative strategies, and inform treatment plans for children and adolescents.

Overall, the purpose of this study is to:

1) further our understanding of the relationship between adolescent strengths and mental health, and
2) establish the psychometric properties of newly established strength-based assessment tool: the Strength Assessment Inventory for Children and Adolescents (SAI).

To accomplish these goals, we would like to assess youth between **12 and 17** years old, who are receiving services from the Children's Centre outpatient, specialized outpatient, and residential treatment programs. In order to protect client privacy, youth who are seeking services at the Children's Centre without their parent/guardian's knowledge will not be included in the study. Study findings based on the clinical groups will be compared to a non-clinical population labeled the control group, recruited from public schools in the Thunder Bay community. We will require participating youth to complete four questionnaires. The questionnaires will take approximately 1 hour to complete, and will include two measures of strengths, one measure of emotional and behavioral difficulties, and one measure of family functioning. Testing will be completed during one scheduled session with the investigator, immediately before or after a prescheduled treatment session. In addition, two questionnaires regarding the adolescent's strengths and functioning will be provided to the adolescent's parent/guardian to be completed at home and returned in a pre-paid envelope. Finally, following receipt of signed consent forms from parents/guardians and youth, information will be collected about the youth's functioning from tools previously administered by intake staff.

CCTB staff will identify youth who meet study inclusion criteria (described above) and cover letters describing the study and authorization forms will be forwarded to youth and their parent/guardian by CCTB staff. Potential participants will be asked to return signed authorization and consent forms to researchers if they are interested in participating or in learning more about the study. Study measures will not be administered until informed consent to participate is obtained from both the adolescent and their parent/guardian.

There are no known physiological or psychological risks or harm associated with participating in this study. The benefits of participating in this study include being a part of research that could advance knowledge about strengths in adolescents and contribute to the growth of a strength-based approach to treating adolescents. In addition, relations between the parent and the child may benefit when there is an increased focus on the child's positive characteristics and behaviours (during the strengths assessment), rather than focusing exclusively on what the child is doing wrong. Finally, focusing on strengths can empower youth and increase their self-esteem.

Potential participants will be assured that participation is completely voluntary and that their services at the Children's Centre Thunder Bay will not be affected by this study, whether they choose to participate or choose not to participate. If a participant wishes to withdraw at any time during the study, he or she is free to do so without consequence. Participants will also be assured that all information will be anonymous and kept confidential, and that the information will be stored in a secure location at Lakehead University for a period of 7 years.

Upon completion of this research, participants, including the Children's Centre Thunder Bay, are entitled to receive a summary of the results. If you wish to access these results, or have any questions about this study, you may contact me by telephone at (807) 344-9365 or by email at jenny_hewitt@hotmail.com. Thank you very much for your time and consideration in this matter.

Sincerely,

_____

Jennifer Hewitt, M.A.
Doctoral Candidate (Clinical Psychology), Psychology Department, Lakehead University

_____

Dr. Edward Rawana, Ph.D., C. Psych.
Assistant Professor, Psychology Department, Lakehead University

Appendix H

Authorization Form for Intake Staff

STAFF CONSENT FORM FOR PARTICIPATION

My signature on this form indicates that I agree to my school's participation in the study concerning strengths and mental health. This study is being conducted by Jennifer Hewitt in the Department of Psychology for her doctoral dissertation under the supervision of Dr. Edward Rawana. I have received explanations about the nature of the study, its purpose, and its procedures. A brief summary of the results of this study will be available upon request.

Signing this form indicates that I understand the following:

- Participation in this study is voluntary and students may withdraw at any time without explanation and without penalty.
- My involvement in the study (distribution of cover letters and consent forms) is also voluntary and I may withdraw at any time without explanation and without penalty to myself or to students.
- All information provided is anonymous and will be kept confidential.
- All information collected during the study will be number coded and any reports of this study will not identify individual students as participants.
- In accordance with university policy, the data collected will be securely stored for seven years at Lakehead University and remain anonymous and confidential.

There are no known physical or psychological risks associated with participating in this study. The benefits of participating in this study include being a part of research that could advance assessment and treatment alternatives aimed at reducing mental health disorders among the adolescent population.

Name (Please Print): _____

Signed: _____

Date: _____

Appendix I

Cover Letter Given to Adolescents

Dear Student,

The Lakehead Public School Board and your school have agreed to participate in a research project being done by members of the Department of Psychology at Lakehead University. We would like to invite you to participate in this study. We want to find out certain strengths that you may have. Strengths may include your relationships with family and friends, skills that you have in sports, at school, or at home, and other things that you think you do well.

We are also interested in finding out some information about your feelings, thoughts, and behaviors. Some adolescents find it extremely difficult to deal with certain thoughts and negative feelings, and may be having difficulty at home or at school because of these difficulties. By doing this research, we hope to learn some things that may help adolescents who are having these kinds of difficulties.

If you agree to take part in the study, you will be asked to answer some questions, which will probably take you about 60 minutes to complete. As a token of appreciation for your time, the researchers will enter every participant in a prize draw for a **$50 gift certificate** from Sport Chek at Intercity Mall in Thunder Bay. In addition, every participant will be provided with a **Tim Horton's coupon** for a drink and a doughnut.

It is important that you understand that participating in this project is voluntary, and that you may stop answering questions at any time. Also, to protect your privacy, any information about who you are (for example, your name) will not be included in the study, and all of your information will be kept in a safe place.

Thank-you,

Jennifer Hewitt
jenny_hewitt@hotmail.com
(807) 344-9365

Questions or comments may also be directed to:
Dr. Edward Rawana at (807) 343-8453, and/or
The Lakehead University Research Ethics Board at (807) 343-8283

Appendix J

Consent Form for Adolescents

CONSENT FORM

My signature on this form shows that I agree to take part in a study by Jennifer Hewitt and Dr. Edward Rawana on strengths, feelings, thoughts, and behaviors.

By signing this form, it means that I understand the following about the study:

- I will be asked to attend one session where I will answer some questions about strengths, as well as questions about my feelings, thoughts, and behaviors. The session will take approximately 60 minutes of my time.
- Participation in this study is voluntary and I may stop answering questions at any time.
- The information that I will provide will be kept private.
- The information gathered by this study will be stored in a secure place at Lakehead University for a period of 7 years, and all information that reveals personal information about me (for example, my name) will be stored apart from the information.

There are no known physical or psychological risks associated with participating in this study. The benefits of participating in this study include being a part of research that could help researchers learn to better assess and treat adolescents who experience emotional or behavioral difficulties.

Name (Please Print): _____

Signed: _____

Date: _____

Phone Number: _____

Appendix K

Cover Letter Given to Parents / Legal Guardians

Dear Parent/Guardian,

The Lakehead Public School Board and your child's school have agreed to participate in a research project being done by members of the Department of Psychology at Lakehead University. This research project has been approved by the Lakehead University Senate Research Ethics Board (807-343-8283). The purpose of the study is to examine the association between strengths and mental health and to develop an effective strength-based assessment tool. I would like to include your son/daughter in this study. As a token of appreciation for their time, the researchers will enter every participant in a prize draw for a **$50 gift certificate** from Sport Chek at Intercity Mall in Thunder Bay. In addition, every participant will be provided with a **Tim Horton's coupon** for a drink and a doughnut.

Participants will be asked to attend one session where they will complete a few brief questionnaires about strengths and mental health concerns. The session will take place after I have received written consent from both yourself and your son/daughter. The session will take approximately 60 minutes to complete, and will occur at your child's school. I will also ask you to complete three questionnaires regarding your son/daughter's strengths and functioning. These questionnaires will be provided to you to complete at home and returned in a pre-paid envelope.

Participation in this research study is completely voluntary. If for any reason your son/daughter does not want to complete the study, he/she will not be made to participate. Furthermore, he/she can withdraw from the study at anytime without explanation and without penalty. If you wish to give permission for your son/daughter to participate in the study, please sign the attached consent form and return it to your son/daughter. Your son/daughter will be asked to return signed consent forms to researchers, by leaving them in a drop box in his/her school.

If you would like to receive more information about the study, please contact me at jenny_hewitt@hotmail.com or Dr. Edward Rawana at (807) 343-8453. I appreciate your cooperation.

Thank you,

Jennifer Hewitt, MA

Department of Psychology, Lakehead University

Appendix L

Consent Forms for Parents / Legal Guardians

PARENT/GUARDIAN CONSENT FORM FOR PARTICIPATION

I give permission for my son/daughter to participate in this study concerning strengths and mental health. This study is being conducted by Jennifer Hewitt in the Department of Psychology for her doctoral dissertation under the supervision of Dr. Edward Rawana. I have received explanations about the nature of the study, its purpose, and its procedures. A brief summary of the results of this study will be available upon request.

Signing this form indicates that I understand the following:

- Participation in this study is voluntary and my son/daughter may withdraw at any time without explanation and without penalty.
- My involvement in the study (completion of three questionnaires at home about my son/daughter) is also voluntary and I may withdraw at any time without explanation and without penalty to myself or to my son/daughter.
- All information provided is anonymous and will be kept confidential.
- All information collected during the study will be number coded and any reports of this study will not identify your son/daughter as a participant.
- In accordance with university policy, the data collected will be securely stored for seven years at Lakehead University and remain anonymous and confidential.

There are no known physical or psychological risks associated with participating in this study. The benefits of participating in this study include being a part of research that could advance assessment and treatment alternatives aimed at reducing mental health disorders among the adolescent population.

Name (Please Print): _____

Signed: _____

Date: _____

Phone Number: _____

Appendix M

Debriefing Forms

DEBRIEFING FORM

Thank you for participating in this study. The purpose of the present study was to develop an effective strength-based assessment tool and to investigate the relationship between adolescent strengths and mental health. Specifically, we were interested in how different demographic and social/environmental variables would impact the relationship between adolescent strengths and mental health. In this study it is hypothesized that strengths will be negatively related to various measures of mental health. In other words, adolescents reporting more strengths will report fewer mental health concerns. The principle researchers are Jennifer Hewitt, doctoral student in Clinical Psychology at Lakehead University and Dr. Edward Rawana, Assistant Professor, Department of Psychology, Lakehead University.

If you would like a brief summary of the results you may obtain them by contacting the primary researcher (Jennifer Hewitt) by email (or telephone if preferred) following your meeting. If you request a brief summary and contact Jennifer, your name and contact information will be added to an address form for future contact. Results will not likely be available before August 2007. If you have any questions or concerns regarding this study please contact Jennifer Hewitt or Dr. Edward Rawana of the Department of Psychology at Lakehead University (see below for contact information).

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