PERSONAL STRENGTHS AND THEIR INFLUENCE ON MENTAL HEALTH AND ACADEMIC OUTCOMES

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Abstract

Building personal strengths is an inherent part of typical development. Existing research attests to the protective effects of key strengths, such as self-esteem, family connectedness, and positive peer relationships among children and adolescents (Van Voorhees et al., 2008). Despite the growing interest in the role of strengths during childhood and adolescence, few studies have examined strengths from developmental and multidimensional perspectives. In the current study, a developmental framework was applied to study the effect of groupings, or profiles, of personal strengths on both academic and social emotional outcomes among a sample of children and adolescents (N = 414; M_{age} = 12.58). Three distinct profiles of personal strengths were identified: a *High Strengths, Moderate Strengths,* and *Low Strengths* profile. Each profile was associated with a unique set of personal strengths. Age and gender differences were detected, indicating that older children were more likely to belong to the *Moderate Strengths* profile than younger children, and boys had a greater likelihood of belonging to the *Low Strengths* group than girls. Better mental health and academic outcomes were associated with a greater probability of belonging to the *High Strengths* profile, and a lower probability of belonging to the *Low Strengths* and profile. Lower academic engagement was associated with a greater likelihood of belonging to the *Moderate Strengths* profile. Findings from the current study contribute to the growing literature on strengths and positive youth development and are relevant to researchers, clinicians, educators, and policy-makers.

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Personal Strengths and Their Influence on Mental Health and Academic Outcomes

Increasingly, mental health researchers are recognizing the limitations of deficit-based models of development and, thus, a shift in focus from vulnerability factors to protective factors has emerged. The zeitgeist towards a positive psychology framework includes the perspective that wellness is more than the absence of mental health symptoms (Seligman & Csikszentmihalyi, 2000). Whereas a deficit-model seeks to reduce difficulties and prevent maladaptive outcomes, positive psychology contends that it is equally important to foster strengths and strive for optimal functioning (Seligman & Csikszentmihalyi, 2000). Accordingly, researchers are beginning to highlight the importance of examining both negative and positive outcomes, as well as outcomes that are broadly-defined, given the wide-spreading effect of strengths (Masten & Cicchetti, 2010; Schwartz, Pantin, Coatsworth, & Szapocznik, 2007).

A focus on strengths is particularly advantageous within the field of child and adolescent mental health, as articulated by theorists, researchers, and clinicians alike who suggest that the building of personal strengths and competencies is part of a normative developmental progression (e.g., Damon, 2004; Jimerson, Sharkey, Nyborg, Furlong, 2004; Lerner, 2009; Park, 2004; Masten, 2001). An understanding of personal strengths during childhood and adolescence is also important for promoting mental health across the lifespan, as many mental health issues first arise during these early developmental periods (Kirby & Keon, 2006; Waddell, McEwan, Shepherd, Offord, & Hua, 2005). There is literature to support the protective effects of key strengths, such as self-esteem,

family connectedness, and positive peer relationships on mental health outcomes (Nguyen, Rawana, & Flora, 2011; Van Voorhees et al., 2008).

Personal strengths are defined as characteristics and competencies that allow youth to survive adversity and minimize mental and physical health problems, while promoting personal growth and well-being (Park, 2004; Park & Peterson, 2009; Rawana & Brownlee, 2009). They are conceptualized as "developed competencies and characteristics embedded in culture and are valued by the individual and society" (Rawana & Brownlee, 2009, p. 10). Accordingly, personal strengths encompass traits, behaviours, and skills and differ from resiliency factors, which refer only to those qualities that promote adaptive coping in the context of adversity (Rutter, 2007). Rawana and Brownlee's (2009) definition of strengths is more inclusive than resiliency factors, and focus on the *characteristics*, or qualities, within the person and the *competencies*, or skills, that are purposefully developed over time and equip a young person to successfully navigate their environment. Characteristics facilitate the expression of competencies. Baumrind (1998) explained that "it takes virtuous character to will the good, and competence to do good well" (p. 13), suggesting that characteristics and competencies act in synergy to demonstrate positive attributes. From a clinical perspective, competencies can be regarded as relatively more mendable skills than characteristics that are ideal targets for intervention and programming (Rawana & Brownlee, 2009).

The inclusivity of Rawana and Brownlee's (2009) definition invites comparison to the concept of *developmental assets*, which refers to a set of skills, experiences, relationships, and behaviours that enable young people to develop into successful adults

(Benson, 1996; Roehlkepartain, Benson, & Sesma, 2003). The term *developmental assets* was coined by the Search Institute, a group of researchers devoted to better understanding positive youth development (Benson, 1996; Roehlkepartain, Benson, & Sesma, 2003). While there is some overlap between Rawana and Brownlee's definition of *strengths* and the Search Institute's definition of *assets*, there are a few key distinctions. For example, assets can be classified as internal or external assets depending on whether they are internal characteristics (e.g., interpersonal competence, sense of purpose, honesty, caring) or external resources provided by the young person's environment (e.g., support from parents, positive view of youth within the community, caring school climate). Strengths as defined by Rawana and Brownlee, on the other hand, refer primarily to internal factors, which are further grouped into *characteristics* and *competencies*. For the purpose of the current study, Rawana and Brownlee's (2009) definition was adopted and will be referred to as *personal strengths* to distinguish them from resiliency factors and developmental assets.

Despite a growing interest in understanding personal strengths among children and adolescents, few studies to date have examined personal strengths from a developmental perspective that acknowledges the dynamic influence of strengths across stages of development. Furthermore, studies that have noted the protective effect of personal strengths have arbitrarily focused on one singular dimension of personal strengths (e.g., optimism or self-esteem; Lagacé-Séguin & d'Entremont, 2010; Orth, Robins, & Widaman, 2012) with minimal attempt to understand the interplay between specific types of personal strengths that co-occur. There is a need to improve the field's

understanding of *strengths constellations*, or the unique profiles of strengths that vary from person to person (Biswas-Diener, Kashdan & Minhas, 2011). Such a shift in conceptualization of personal strengths calls for a person-centred approach that focuses on identifying typologies or profiles of personal strengths that frequently co-occur. The current study was the first known empirical study to apply a developmental framework to understanding the impact of groupings, or profiles, of personal strengths on both mental health and academic outcomes. Furthermore, the current study examined broadly defined outcomes that are both adaptive and maladaptive. Maladaptive outcomes reflect consequences, such as social and emotional difficulties, which interfere with development, whereas adaptive outcomes, such as school engagement and well-being, promote healthy development. The findings from the current study contribute to the growing literature on personal strengths and positive youth development by examining multidimensional clusters, or profiles, of personal strengths across development and linking these strengths profiles to important developmental outcomes.

Theoretical Perspectives of Personal Strengths in Childhood and Adolescence

Along with the growing interest in strengths, theories that incorporate elements of positive psychology with what is known about child and adolescent development have emerged in recent decades. Noteworthy contributions to the field's understanding of strengths in childhood and adolescence have come from general developmental theories, such as the developmental psychopathology perspective, and strengths-based theories like the positive youth development perspective. More recently, an integrative theory has been proposed that draws from aspects of both the developmental psychopathology and

positive youth development perspective. A review of these theories, and their relevance to the current study is presented.

Developmental Psychopathology Perspective

The notion of individual variation in outcomes is central to our understanding of personal strengths with respect to the developing child or adolescent. The developmental psychopathology framework adopts a continuous approach through the stages of childhood and adolescence and seeks to understand how individual differences in outcomes evolve over development, with a focus on risk/vulnerability (i.e., any influence in a person's life that increases the probability of a negative outcome) and protective factors (i.e., factors that increase positive outcomes, regardless of adversity or risk; Cicchetti & Rogosch, 2002). A developmental psychopathology perspective proposes that protective factors attenuate an individual's risk for, and thus decrease the likelihood of, problematic outcomes (Tusaie & Dyer, 2004). Person-environment interactions are emphasized and understood to be a bidirectional transaction (Glantz & Leshner, 2000; Sameroff, 2000). Normative and typical development is of particular interest and informs our understanding of atypical development and factors that contribute to the emergence of psychopathology (Cicchetti & Rogosh, 2002; Masten, 2006).

Development is comprised of a number of age- and stage-relevant tasks (Cicchetti & Rogosch, 2002). An individual's relative success or difficulty in completing these tasks at the appropriate points in development is significant in determining subsequent adjustment or maladjustment (Masten, Burt, & Coatsworth, 2006; Masten & Coatsworth, 1998). During middle childhood, important stage relevant tasks include school

adjustment and achievement; establishing and maintaining friendships; and following the rules for prosocial conduct within school, the family, and the community. During adolescence, crucial stage-salient tasks include successful transition to secondary schooling, academic achievement, forming close friendships, development of romantic relationships, and deriving a cohesive sense of self-identity (Masten et al., 2006). Young people make use of personal strengths, referred to as *protective factors*, to navigate and successfully resolve salient development tasks and to avoid negative outcomes. A scaffolding of skills is implied, such that one's ability to tackle stage-relevant tasks during a given developmental period depends on the quality of resolution of stage-salient tasks during the preceding developmental stage (Masten et al., 2006; Masten & Coatsworth, 1998).

A developmental psychopathology perspective provides a useful framework for exploring how personal strengths can protect from pathology to promote the successful negotiation of normative stage salient issues described earlier (Luthar, Cicchetti, & Becker, 2000; Sroufe, Egeland, Carlson, & Collins, 2005). The theory also provides a model for understanding how personal strengths develop over time. In line with a developmental psychopathology perspective, the current study employed a person-centered approach that acknowledges individual differences and was guided by identified stage-relevant tasks through childhood and adolescence. Despite the important contributions of the developmental psychopathology framework, the theory tends to focus on pathology and negative outcomes. Given the current study's focus on personal strengths, it is important that the developmental psychopathology perspective be

complemented by a strengths-based developmental theory, such as the positive youth development perspective.

Positive Youth Development Perspective

Positive youth development (PYD) is a framework that takes a strengths-based approach to human development (Damon, 2004; Lerner, 2009; Lerner, Almergi, Theokas, & Lerner, 2005). Childhood and adolescence are regarded as periods that present opportunities to capitalize on resources for optimal development. Such a framework emphasizes the measurement of positive outcomes, or "thriving behaviours", such as academic success and wellbeing. Consistent with Rawana and Brownlee's (2010) definition of personal strengths, PYD identifies five components that comprise positive development. These are referred to as the *Five C's*, and encompass, competence, character, confidence, connection, and caring (Lerner et al., 2005).

According to PYD, strengths are reflected through one's interaction with the environment (Lerner, 2009). The current study adopted a person-in-environment framework that assesses personal strengths along two dimensions: 1) characteristics that exist within an individual, and 2) competencies that are purposefully developed over time to successfully navigate developmental challenges in one's environment. Characteristics and competencies can act independently or in harmony with one another, however, ideally internal characteristics are at the core of and are the driving force behind competence (Baumrind, 1998; Rawana & Brownlee, 2009). In other words, optimal functioning is achieved when a young person's internal characteristics are compatible with and are able to support the expression of his or her competencies (Lerner, 2009).

Also drawing from both developmental psychopathology and PYD, an integrative model of development has been proposed (Schwartz et al., 2007) and is used to inform outcomes selected for investigation for the current study.

An Integrative Model of Psychosocial Development

Researchers guided by a developmental psychopathology framework are interested in maladaptive outcomes (e.g., conduct problems, substance use, depression), whereas PYD research focuses on adaptive outcomes (e.g., academic success, competence). Despite this fundamental difference, theorists have identified remarkable overlap between PYD and developmental psychopathology, and have proposed an integrative model that underscores the importance of examining both thriving and problematic outcomes (Schwartz et al., 2007). In developmental psychopathology researchers are interested in protective factors, whereas in PYD the focus is on strengths. Conceptually, these mechanisms overlap considerably but are studied within the context of maladaptive outcomes in developmental psychopathology and adaptive outcomes in PYD. Schwartz and colleagues (2007) posit that existing literature has noted relationships between a young person's environment (e.g., family, school, peers, and neighbourhood) with both adaptive and maladaptive developmental trajectories. Positive and negative outcomes are also associated with internal factors, such as self-concept, temperament, attitudes, and beliefs. Thus, similar mechanisms appear to underlie both the problematic outcomes supported by developmental psychopathology and the thriving outcomes supported by PYD. Moreover, both perspectives highlight the importance of plasticity

and relationships between the person and their environment (Dodge & Pettit, 2003; Lerner, Freund, DeStefanis, & Habermas, 2001).

Researchers have suggested that positive and negative outcomes may not be mutually exclusive, meaning that they can co-occur within an individual (Greenspoon & Saklofske, 2001; Schwartz et al., 2007). Thus, it is important to examine the extent to which similar, or complementary, mechanisms are associated with both adaptive and maladaptive developmental outcomes. A growing number of studies have recognized that by examining both successful and maladaptive adjustment, researchers are in a better position to promote positive outcomes among children and adolescents (e.g., Freeman, King, Kuntsche, & Pickett, 2011). Moreover, Masten and Cicchetti (2010) discussed the cascading influence of protective factors, in that personal strengths tend to result in cumulative effects that spread across domains. It has been noted that certain competencies are robustly associated with broad and wide-reaching outcomes, suggesting the utility of examining broad outcomes, such as social emotional difficulties, rather than narrow outcomes, such as depressive symptoms. Guided by this framework, the current study examined broadly-defined positive developmental outcomes (i.e., subjective happiness and student engagement) as well as negative outcomes (i.e., social-emotional difficulties) to better understand how each are affected by personal strengths.

Personal Strengths as a Multidimensional Construct

Previous research on personal strengths has tended to either conceptualize strengths as a unidimensional construct or has focused only on frequencies of occurrence. For example, while seminal studies by Benson (1996) and Roehlkepartain, Benson, &

Sesma (2003) considered strengths multidimensionally, they only examined the number of strengths endorsed by young people and did not consider the interplay between various strengths. Thus these studies take a variable-centred approach and do not examine whether certain strengths systematically co-occur together within a person. Indeed, strengths-based researchers and clinicians often take an isolationist approach and focus on a single strength in particular (e.g., self-esteem, optimism), or when multiple strengths are considered, they are not conceptualized to interact with one another. The implicit assumption is that a given personal strength exists in isolation, disconnected from the influence and co-occurrence of other strengths.

Although theorists have drawn attention to this limitation (Dahlsgaard, 2005; Park, 2004), research has yet to establish a more comprehensive, multidimensional operationalization of personal strengths. Park (2004) urged a broader conceptualization of personal strengths that allows for differences across individuals. Gillham and colleagues (2011) proposed that specific strengths are often correlated with other specific strengths such that the benefits of specific strengths likely reflect the effects of other strengths that were not assessed. Similarly, Biswas-Diener, Kashdan, and Minhas (2011) discussed the need to improve the field's understanding of *strengths constellations*, or the unique profiles of strengths that vary from person to person, and propose the value of examining pairings or groupings of personal strengths. Such a shift in conceptualization of personal strengths calls for a person-centred approach that focuses on identifying typologies or profiles of strengths that frequently co-occur.

Given the current study's multidimensional conceptualization of personal strengths, it is important to use a multidimensional measure to assess personal strengths. However, the majority of validated measures assess a single strength at a time (the reader is referred to Tedeschi & Kilmer, 2005 for a review). For example, the Strengths and Difficulty Questionnaire (SDQ), provides a comprehensive and multidimensional assessment of children's difficulties and problem behaviours, but only assesses prosocial conduct as the sole index of personal strength (Goodman, 1997; 2001). Thus, the SDQ is more appropriately used as a potential measure of negative and positive outcome rather than an index of personal strengths per se. One exception is the Strength Assessment Inventory (SAI; Rawana & Brownlee, 2010). Unlike the other well-known multidimensional measure of personal strengths, the Values in Action Inventory of Strengths for Youth (VIA-Y; Park & Peterson, 2006), the SAI was developed specifically for children and adolescents. Whereas the VIA-Y mostly assesses character strengths (e.g., kindness, humour, modesty), the SAI includes personal strengths that are derived from both characteristics (e.g., optimism, faith, culture) and competencies (e.g., interpersonal skills, school functioning, self-awareness). *Characteristics* are those qualities that reside within the individual and are, to a certain extent, fundamentally and effortlessly endowed. *Competencies* reflect personal strengths, or skills, that are purposefully developed by the individual over time (Rawana & Brownlee, 2010). In the current study, the SAI was used to assess personal strengths as a multidimensional construct that includes family relationship skills, functional academic skills, peer relationship skills, enjoyment of constructive activities, self-awareness, daily living skills,

optimism, and faith/culture. Rawana and Brownlee's (2010) definition of personal strengths, as comprised of both *characteristics* and *competencies*, was employed. Examples of *characteristics* included optimism, sense of faith/culture, and enjoying age-appropriate activities. *Competencies* included personal strengths such as family and peer interpersonal skills, school functioning, self-awareness, and daily living skills.

Personal Strengths Across Development

Despite the emergence of theories to emphasize the importance of strengths and guide research, much remains to be understood about exactly how personal strengths change across developmental stages. As described above, the developmental psychopathology perspective suggests that transitions through childhood and adolescence involve the scaffolding of skills and competencies (Masten & Cicchetti, 2010). Key transitional periods, including late childhood into early adolescence, and early adolescence into late adolescence are accompanied by unique developmental tasks that require different skills to navigate successfully (Masten & Cicchetti, 2010; Masten & Coatsworth, 1998). It would be expected that the salience of specific strengths, both as individual factors and as clusters, would vary with age. Theorists have articulated the dynamic nature of one's ability to adapt successfully, depending on the interaction and accumulation of internal and environmental factors at any given point in a child's life (Masten, Best, & Garmezy, 1990; Rutter, 1991; Tedeschi & Kilmer, 2005; Tusaie & Dyer, 2004; Wright, & Masten, 2005).

Research has provided empirical support for differences in the prevalence of specific strengths across development; however, previous studies have arbitrarily grouped

together all types of personal strengths and focused on the number of strengths, rather than on meaningful clusters of co-occurring personal strengths. Expanding on Benson's (1996) earlier study with children, Roehlkepartain and colleagues (2003) identified twenty internal and twenty external developmental assets (i.e., intrapersonal and environmental strengths) that contribute to an adolescent's transition from children into caring and responsible adults. Furthermore, they found age differences in the prevalence of developmental strengths, in that younger children (grades 4 to 8) tend to experience relatively more strengths than older adolescents (grades 9 to 12). However, by focusing on only the number of strengths without differentiating between specific types of strengths, the authors suggest that all strengths are equally significant. It is problematic to consider strengths such as self-esteem and optimism, which have been robustly related to child well-being (Orth, Robins, & Meier, 2009; Seligman, Reivich, Jaycox, & Gillham, 1995), in the same light as "strengths" such as time spent on homework, which have not been well supported by existing research.

Existing literature suggests that the prevalence of specific strengths changes with age and seems to reflect the changing developmental demands that come with each stage of development. Park (2004) proposes that some character strengths are evident from a young age, but that the expression of these strengths changes with time. For example, secure attachment in infancy and early childhood may translate into caring and trust during later childhood and adolescence. Moreover, character strengths from an early age often establish the foundation for the development of age-appropriate competencies later in life (Park, 2004). Thus, secure attachment might also set the stage for the development

of emotion regulation and interpersonal skills in middle childhood, when these skills become consolidated (Cassidy & Shaver, 2008). In turn, emotion regulation skills allow for the development of cognitive coping skills in adolescence (Rawana, Flett, McPhie, Nguyen, & Norwood, 2012). In general, a pattern of scaffolding and building competencies onto existing characteristics is proposed (Park, 2004; Rawana & Brownlee, 2009). In contrast to the findings of Roehlkepartain and colleagues (2003), it would follow that personal strengths, more specifically competencies, would accumulate as children mature. In the current study, constellations of personal strengths comprised of both characteristics and competencies were conceptualized, allowing for a richer examination of age effects.

With respect to developmental tasks, research shows that younger children are faced with resolving stage relevant tasks of middle childhood that are predominately competence-based, such as school adjustment, and following rules for prosocial conduct (Masten et al., 2006). It is likely that these competencies are emerging and not yet stabilized by childhood. While personal strengths may exist during this age, young children are not likely equipped with the insight to, nor is it of great benefit to them to identify more nuanced characteristics within themselves. Furthermore, Park (2004) points out that many personal strengths, such as open-mindedness and fairness, require a degree of cognitive maturation that may not be in place during childhood. Thus, it would be expected that younger children would report fewer overall strengths than adolescents. During early adolescence, individuals begin to learn more about themselves and may be more adept at identifying internal characteristics than younger children (Eccles, 1999).

Furthermore, early adolescents are able to reflect on their own personal strengths and weaknesses, facilitating the development of desired competencies (Eccles, 1999). Thus, it might be expected that individuals in early adolescence would report more overall strengths than younger children, due to both an increased awareness of existing characteristics and a steady accumulation of competencies with age. By middle/late adolescence, individuals are at a more advanced stage of development and might report more internal strengths related to passions and interests, future goals, self-identity, spirituality, and purpose (Benson & Scales, 2009). For example, Good and Willoughby (2008) noted marked increases in spirituality during the adolescent years, a time when individual identity formation is salient. Similarly, Benson (2004) found evidence to support the fusion of self-identity formation and spiritual development during adolescence. Thus, older adolescents would be expected to report the greatest number of overall personal strengths, as a result of increases in both characteristics and competencies.

The current study adopted a dynamic conceptualization of personal strengths across development, understanding that manifest strengths – both characteristics and competencies – would vary with age in response to developmentally appropriate demands. Using an integrative model of development and a person-centred approach, the current study examined the salience of different clusters of personal strengths across childhood and adolescence.

Personal Strengths and Gender

In addition to developmental differences, gender differences with respect to personal strengths have also been supported by previous research; however, no known study has investigated gender as it relates to groups of personal strengths, and few studies have concurrently examined several personal strengths at once. Roehlkepartain and colleagues (2003) found that girls tended to report a greater number of strengths than boys; however, Roehlkepartain and colleagues' (2003) focus on frequency, and limited consideration of the interplay between strengths were limitations of their findings. Among young adults, it has been found that women tend to report higher levels of strengths related to interpersonal factors, such as love and kindness, than men (Peterson, Park, & Seligman, 2006; Shimai, Otake, Park, Peterson, & Seligman, 2006). Men tend to report higher levels of bravery and creativity than women (Shimai et al., 2006).

Several studies have noted gender differences when specific personal strengths are examined individually. For example, Puskar and colleagues (2010) found that girls reported lower levels of optimism and self-esteem than boys. Boys are more likely to report personal strengths related to participation in extracurricular activities compared to girls (Lerner, 2009). These findings are in contrast to those of Roehlkepartian and colleagues (2003), suggesting that the relationship between gender and strengths is complex. Similarly, research on self-esteem has noted gender by age effects in that gender differences tend to become less salient with age (Kling, Shibley Hyde, Showeres, & Boswell, 1999); however, in the absence of substantial empirical evidence, it is not possible to make specific predictions regarding interaction effects between gender and

age. The current study examined the interaction between multiple strengths to determine whether gendered findings among adults are also present among children and adolescents.

Developmental Outcomes of Personal Strengths

Research has consistently shown that the presence of personal strengths can both prevent psychopathology and promote positive outcomes; however, few studies have examined outcomes related to personal strengths (Proctor, Maltby, & Linley, 2011; Brownlee, Rawana, Franks, Harper, Bajwa, O'Brien, & Clarkson, 2013). It should also be noted that the bulk of the existing studies focus on adults and on a singular strength rather than profiles comprised of a constellation of personal strengths (Gillham et al., 2011). Often, personal strengths are examined as mediators or moderators for risk factors (e.g., Christens & Peterson, 2012; Kia-Keating, Dowdy, Morgan, & Noam, 2011; Rutter, 2007). Such study designs align best with models of resiliency that examine adaptive outcomes within vulnerable populations. For the current study, a more inclusive framework was adopted, whereby the use of personal strengths is part of typical and normative development, providing advantage to all young people regardless of risk or vulnerability. Accordingly, personal strengths were examined as direct effects, rather than as mediators or moderators. Furthermore, given the wide-reaching effects of personal strengths, broadly-defined positive and negative outcomes were examined.

Personal Strengths and Mental Health

Several studies have examined the effect of specific personal strengths on specific mental health outcomes. For example, optimism has been shown to predict better

emotional and behavioural health (e.g., lower levels of depression and anxiety) and greater life satisfaction, achievement, health, and overall adjustment (Bromley, Johnson, & Cohen, 2006; Cardemil, Reivich, & Seligman, 2002; Gillham & Reivich, 2004; Gillham et al., 2011; Scheier, Carver, & Bridges, 2001; Seligman, Schulman, & Tryon, 2007; Yu & Seligman, 2002). Insight and empathy have been associated with lower levels of conduct problems (Bromley et al., 2006), whereas spirituality has been linked to lower risk for substance abuse (Ritt-Olson et al., 2004).

Despite the wide-reaching effects of personal strengths on specific mental health outcomes, few studies have examined either groupings of strengths and broadly-defined positive outcomes, such as well-being (defined as subjective happiness or life satisfaction). For example, using a qualitative, free parental description design, Park and Peterson (2006, 2009) found personal strengths that were related to interpersonal relationships (i.e., *strengths of the heart:* gratitude, hope, love, and zest) were more closely connected to well-being than were strengths related to cognitive processes (i.e., *strengths of the head*: creativity, judgement, appreciation of beauty). With regard to gender differences, research has not established a relationship between overall well-being and gender, although the extent to which personal strengths are related to well-being may vary with gender (Park & Peterson, 2006). Researchers have called for an examination of several developmental outcomes to provide insight into which strengths are most relevant to specific tasks (e.g., Gillham et al., 2011). It is possible that cognitively-oriented strengths are more salient for outcomes such as academic performance. Personal

strengths are likely related to many aspects of well-being, so it is important to examine broad outcomes, such as subjective general happiness.

Personal Strengths and Academic Outcomes

In addition to associations between personal strengths and mental health and well-being, research has found links between personal strengths and academic outcomes. In general, children with a greater number of strengths fare best in school (e.g., Duckworth & Seligman, Schwartz, Hopmeyer Gorman, Nakamot, & Toblin, 2005). Again, studies have either focused on a single specific personal strength at a time, such as self-discipline (Duckworth & Seligman, 2006), social capital (Hill & Craft, 2003), authoritative parenting style (Baumrind, 1989; Spera, 2005), or positive peer relationships (Schwartz et al., 2005), or have considered multiple strengths, without examining groupings of personal strengths. Moreover, these findings have tended to investigate achievement outcomes, such as grade point average (GPA), standardized test scores, and attendance. For example, Roehlkepartain and colleagues (2003) found compelling links between number of individual strengths and not only current GPA, but also future GPA among children and adolescents. They also found that, despite the stability of GPA generally, students who experienced decreases in the number of strengths were twice as likely to experience decreases in GPA. Thus, the association between specific personal strengths and academic performance has been documented; however, research has focused on personal strengths in isolation from one another and has yet to examine how profiles of strengths that are comprised of a constellation of personal strengths relate to achievement.

With regard to gender, girls typically outperform boys in overall academic achievement and especially in subjects related to reading and literacy (Cho, 2007). Researchers have linked this female advantage to underlying personal strengths that promote achievement and are also more common among girls, such as self-discipline, attentiveness, and organizational skills (Duckworth & Seligman, 2005; Grolnick, Gurland, Jacob, & Decourcey, 2005). Whereas GPA and achievement are frequently used as academic indicators, the strengths-based nature of the current study aligns best with the examination of broader, more strengths-focused academic outcomes, such as school satisfaction, school connectedness, or student engagement.

Personal Strengths and Student Engagement

Student engagement is defined as a multidimensional construct that encompasses four distinct domains: the behavioural domain, the academic domain, the cognitive domain, and the psychological/emotional domain (Appleton, Christenson, Kim, & Reschly, 2006). Student engagement has been identified as a predictor of academic success (e.g., higher rates of attendance, higher GPA), emotional adjustment, and prosocial behaviour (Hirschfield & Gasper, 2011; Lanza & Taylor, 2010; Leonard, 2009; Lewis, Huebner, Malone, & Valois, 2011; Li, Lerner, & Lerner, 2010). Although student engagement is strongly linked to academic achievement and has been frequently examined as a mediating or moderating variable, a growing number of researchers propose that due to the conceptual complexity of the construct, research should consider student engagement as an outcome in and of itself and examine factors that moderate the development of engagement (Appleton, Christenson, & Furlong, 2008; Fredricks,

McColskey, Meli, Mordica, Montrosse, & Mooney, 2011). For example, a number of studies examine the effect of gender on student engagement, but the findings have been mixed, with some studies reporting higher levels of student engagement among girls than boys (Covell, 2010; Kinderman, 2007; Li & Lerner, 2011; Sirin & Rogers-Sirin, 2005; Woolley & Bowen, 2007), while others report the opposite (Daly, 2007; Lewis, 2010; Tucker et al., 2002), or no gender effects (Hirschfield & Gasper, 2011; Linnakylä & Malin, 2008). Developmental effects have been noted, such that girls reported lower levels of student engagement in younger age groups, while boys reported lower levels of student engagement in older age groups (Hedvat, 2009; Ueno & McWilliams, 2010). The current study sought to clarify gender and age effects by examining both dimensions separately, as well as how they interact with one another.

In addition to being influenced by gender and developmental stage, student engagement requires many personal strengths (e.g., interpersonal skills, discipline, persistence, future goals; Appleton et al., 2006). An examination of personal strengths may also clarify the complex role of gender with respect to student engagement. In a study with children in Grades 3 to 6, hope, a characteristic similar to optimism, mediated the relation between school contextual factors and school satisfaction (Hui & Sun, 2010). The only study to investigate protective factors that contribute to student engagement specifically focussed on a singular strength that was relevant only to students from immigrant backgrounds. Gonzales and colleagues (2008) found that adolescents who endorsed traditional cultural values reported higher levels of student engagement. Further

research is required in order to expand our understanding of how personal strengths, especially different profiles of strengths, are linked to student engagement.

While student engagement can be considered a personal strength in and of itself, theorists have identified the construct as an important indicator of positive outcome, or thriving behaviour due to its complexity and multifaceted nature (Appleton et al., 2006; Benson & Scales, 2009). Although existing research suggests some overlap between student engagement and personal strengths, there is substantial evidence that student engagement and personal strengths are separate concepts (Jimerson, Campos, & Greif, 2003). For example, specific personal strengths, such as social competence and creativity, have been highlighted for their potential in fostering student engagement among children and adolescents, which suggests they are distinct concepts (Morrison, Brown, D'Incau, O'Farrell, & Furlong, 2006). Given that the strengths measured in the current study (the SAI) does not include a school engagement subscale, student engagement is used as an academic outcome measure that reflects internal and external connectedness to school.[1]

To summarize, there is a growing interest in the role of personal strengths in the normative development of children and adolescents. Unlike resiliency factors, personal strengths offer benefits to all children, regardless of exposure to adversity, and reflect both *characteristics* that exist within the individual, and *competencies* that are developed over time (Rawana & Brownlee, 2009). Despite a shift in attention to personal strengths rather than deficits, the research to date has been limited by a unidimensional conceptualization of personal strengths and an insufficient consideration of

[1] The SAI contains two subscales that assess school functioning (Strengths at School) and community engagement (Strengths from Being Involved), which are both conceptually different from student engagement reflecting sense of connectedness one feels with their school.

developmental factors (Gilham et al., 2011). Furthermore, studies often do not investigate outcomes associated with personal strengths (Proctor et al., 2011). In the current study, personal strengths were defined as a multidimensional construct and conceptualized to co-occur in groupings, or profiles, of personal strengths. Previous research on personal strengths has also placed little emphasis on the role of age. According to the developmental psychopathology perspective, children and adolescents face different developmental tasks, and it would be expected that the salience of personal strengths profiles would vary with age (Masten & Cicchetti, 2010). Given that competencies are defined as skills that are expected to accumulate as children mature, it is expected that children would experience an increase in personal strengths as they develop. In the current study, both competency- and characteristic-oriented personal strengths were examined, allowing for a deeper investigation of age effects. With regard to gender, previous studies have found that girls tend to report a greater number of strengths than boys (Roehlkepartain et al., 2003); however, the role of gender as it relates to groupings, or profiles, of personal strengths has yet to be examined. Given the wide-reaching effects of personal strengths on a person's development, it is important to include broadly defined outcomes, such as well-being, social-emotional difficulties, student engagement, and academic functioning (Masten & Cicchetti, 2010). Guided by both an integrative model of psychosocial development that combines principles from both developmental psychopathology and positive youth development frameworks, the current study examined both positive and negative outcomes (Schwartz et al., 2007).

Current Study

The overarching goal of the current study was to better understand how characteristics and competencies develop across three important developmental stages: late childhood, early adolescence, and mid- to late adolescence, as well as how personal strengths affect social emotional and academic outcomes. To accomplish this goal, the current study identified unique groups, or profiles, of personal strengths and investigated their salience across age, gender, and developmental outcomes.

Objectives

The current study sought to examine the salience of different profiles of personal strengths in a sample of school-aged children and adolescents. The current study was guided by four main objectives:

1) to examine personal strengths as a multidimensional construct and identify distinct profiles of personal strengths among children and adolescents aged 8 to 18 years;
2) to examine whether profiles of personal strengths vary by age group;
3) to examine whether profiles of personal strengths vary by gender; and
4) to examine the link between strength profiles and important developmental outcomes (i.e., well-being, social/emotional difficulties, academic achievement, and student engagement).

Hypotheses

The following hypotheses were proposed and relate to each study objective:

1) With regard to objective 1, it was expected that distinct profiles of personal strengths would be identified based on students' self-reported personal strengths. Profiles refer to patterns of responses across personal strengths domains and can be used to describe groupings, or constellations, of strengths that are most salient within each profile. Strengths profiles would be qualitatively distinct from one another and would be used to classify students, based on group membership probability. There are few data available on profiles of strengths. In this study, it was expected that at least three distinct profiles of personal strengths would be identified. It was expected that a subset of the sample would be characterized by elevated scores on all personal strengths domains, or a *High Strengths* profile, another subset would exhibit moderate levels of personal strengths, and fall into a *Moderate Strengths* profile, and the remaining individuals would be characterized by low scores on all personal strengths, or a *Low Strengths* profile. Profiles would refer to the pattern of scores across each personal strength subscales.

    Within each profile, it was expected that different personal strengths would significantly distinguish membership and that personal strengths would vary in their salience within each of these profiles. Personal strengths were classified into *characteristics* and *competencies. Characteristics* refer to qualities within the person, while *competencies* refer to skills that are purposefully developed over time and equip a young person to successfully navigate their environment. In the current study, *characteristics* included optimism, sense of faith/culture, enjoyment of age-appropriate activities. *Competencies* included

strengths such as family and peer interpersonal skills, school functioning, self-awareness, and daily living skills. Salient personal strengths were examined and considered in light of their classification as either a *characteristic* or *competency.*

Additionally, it was expected that a unique subset of personal strengths that when elevated would be protecting, and when low would be compromising. Elevated levels of personal strengths were considered protective when they were associated with a lower likelihood of belonging to the *Low Strengths* group, but a greater likelihood of belonging to the *Moderate Strengths* group. Conversely, low levels of strengths were deemed to be vulnerabilities when they were associated with a lower likelihood of belonging to *Moderate Strengths* group, but a greater likelihood of belonging to the *High Strengths* group. In other words, personal strengths were protecting if they increased one's likelihood of belonging to the *High Strengths* rather than the *Moderate Strengths* group; whereas they were compromising if they increased one's likelihood of belonging to the *Low Strengths* group rather than the *Moderate Strengths* group.

2) Regarding objective 2, it was hypothesized that students at different ages would be faced with unique developmental tasks relevant to their developmental stage. Thus, membership in strengths profiles was expected to differ across age groups. Previous research suggests that personal strengths accumulate as children develop. Accordingly, it was expected that the mean age would be lowest for the *Low Strengths* profile and highest for the *High Strengths* profile. Similarly, it was expected that the *Low Strengths* profile would be most typical for children in the

late childhood group (age 8 to 11). With age, children are able to increase competencies and build on existing personal strengths. Thus, it was expected that the *Moderate Strengths* profile would be most typical among early adolescents (age 12 to 14) and the *High Strengths* profile would be most typical during mid- to late-adolescence (age 15 to 18).

3) Regarding objective 3, the salience of personal strengths profiles was expected to differ for boys and girls. Previous research has suggested that girls tend to report higher levels of personal strengths than boys. Thus, it was expected that membership in the *High Strengths* profile would be associated with girls, and membership in the *Low Strengths* profile would be associated with boys. It was also expected that gender will interact with age to predict outcomes, such that gender effects would vary with age.
4) With regard to objective 4, students who are likely to be classified in the *High* and *Moderate Strengths* profiles were expected to report better outcomes than students in the *Low Strengths* profile. Outcomes have been defined as: levels of subjective happiness, levels of social/emotional difficulties, academic engagement, and average grades.

Method

Procedure

This project was part of a larger study and was completed in collaboration with 1) the Wellington Catholic District School Board (n = 5 schools), located in south-western Ontario, and 2) Lakehead Public Schools (n = 5 schools), located in north-western

Ontario. Ethics approval was obtained from the Research Ethics Boards at all affiliated post-secondary institutions (i.e., Lakehead University, University of Guelph, York University) and participating school boards. Students were invited to participate in an in-class survey consisting of a battery of measures selected to assess strengths, student engagement, and social-emotional well-being. Surveys were administered electronically, if school resources were sufficient (i.e., wireless web access was in place). Alternatively, students completed paper surveys. Electronic surveys were completed using a netbook provided by the research team or using computer labs located within schools. Participants provided parental consent and youth assent (see Appendix A) and had the option of declining to answer any question, as well as the ability to opt out of the survey at any point. Further details about data collection procedures are provided in Appendix B.

Participants

Participants were 414 students in Grades 4 to 12 in Ontario, Canada (57.5% girls, M_{age} = 12.58. SD_{age} = 2.22, age range = 8 to 18). One-hundred and fifty-six students belonged to the late childhood group (age 8 to 11; 37.7%), 154 to the early adolescent group (age 12 to 14; 37.2%), and 104 to the middle-late adolescent group (age 15 to 18; 25.1%). With regard to ethnicity, 322 participants (77.8%) identified as Caucasian, 30 (7.2%) as Asian, 7 (1.7%) as African/Caribbean, 12 (2.9%) as Hispanic/Latino, 14 (3.4%) as First Nation/Inuit/Metis, 5 (1.2%) as Middle Eastern, 2 (0.5%) as South Asian, and 22 (5.3%) did not specify an ethnic background. The majority of the sample (n = 363, 87.7%) lived with either one or both parents. Three hundred-and-thirteen participants

(75%) indicated that their parents were married or living together, 90 (21.8%) of the sample had parents who were divorced.

Measures

Personal Strengths

The Strengths Assessment Inventory (SAI; Rawana & Brownlee, 2010) was used to assess students' strengths. This inventory has been used in both clinical and research settings. The SAI is comprised of items that provide a comprehensive assessment of individual strengths across several domains of a young person's life (see Appendix C). The measure is a self-report measure consisting of items rated on a scale of 0 (*not at all*) to 3 (*almost always*) and reflects aspects of individual strength domains. The SAI is comprised of nine content scales that were theoretically derived: Strengths at Home, Strengths at School, Strengths During Free Time, Strengths with Friends, Strengths from Knowing Myself, Strengths from Keeping Healthy, Strengths from Being Involved, Strengths from Faith and Culture, and Strengths from Goals and Dreams. Individual personal strengths items were classified by the authors of the scale for the purposes of the present study into *characteristics*, or those that reside with minimal effort within the individual, and *competencies*, or those that represent skills that are more purposefully developed over time. Consultation with the developers of the SAI resulted in the classification of SAI scales as predominately reflecting characteristics or competencies based on wording of the specific items (E. Rawana, personal communication, May 4, 2013). For example, optimism was considered a characteristic because the majority of items reflected a disposition of positive expectancies and future orientation (e.g., "I have

a dream for when I am adult"). On the other hand, self-awareness was classified as predominantly competency-oriented because the majority of items reflected a set of skills related to knowing oneself (e.g., "I can listen and accept feedback, whether it is good or bad"). A summary of characteristics and competencies as they pertain to the SAI scales are presented in Table 1.

Content scales were comprised of varying numbers of items. Prorated scores for each of the nine scales were computed by taking the mean of each person's score to account for items that are not applicable to the respondent (e.g., items referring to siblings when the respondent is an only child). The prorated scores were then converted into percentage scores to allow for comparisons across domains. Percentage scores represented an individual's score on a given domain as a percentage of the total possible score within that subscale. The SAI has been shown to have good convergent and divergent validity, internal reliability, and test-retest reliability (Brazeau, Teatero, Rawana, Brownlee, & Blanchette, 2012; Rawana & Brownlee, 2010). In the current study, the Strengths from Being Involved subscale was not used in the analyses because it demonstrated poor internal consistency (Cronbach's alpha = .67). The remaining eight subscales demonstrated good reliability (Cronbach's alphas = .74 to .87).

Subjective Happiness

To align with tenets of positive psychology, an index of mental wellness was examined as one of the outcomes. Participants' well-being was assessed using the Subjective Happiness Scale (SHS; Lyubormirsky & Lepper 1999). The SHS is a 4-item measure that assesses general happiness, happiness relative to others, enjoyment of life,

and general unhappiness. The SHS has been validated for respondents aged 14 through adulthood and has also been administered to children as young as 9-years-old with good reliability (Holder & Klassen, 2010; O'Rourke & Cooper, 2010). Respondents rate each item on a 7-point Likert scale, with higher scores indicative of greater levels of subjective happiness (see Appendix D). A total composite score for global subjective happiness is computed by averaging responses to the four items. The SHS has been shown to have good internal consistency, test-retest reliability, and convergent and divergent validity (Lyubormirsky & Lepper 1999). Good internal consistency was found in the current sample (Cronbach's alpha = .78).

Social/emotional Difficulties

The Strengths and Difficulties Questionnaire (SDQ; Goodman 1997; 2001) is a 25-item measure that assesses the psychological adjustment of children and adolescents. The current study used the self-report SDQ Total Difficulties score, derived by summing the scores from all of the scales except the prosocial scale(Goodman 1997; 2001). The SDQ has been shown to have good validity and reliability (Goodman 1997; 2001). Items on the SDQ cover 25 attributes, including emotional symptoms, conduct problems, hyperactivity, and peer problems. Respondents rate each item on a 3-point Likert scale the extent to which each attribute is true of them (see Appendix E). The scale was found to be reliable for the current sample (Cronbach's alpha = .81).

Student Engagement

Participants' student engagement was examined as an academic outcome. Since the SAI measures community engagement (Strengths from Being Involved) and school

functioning (Strengths from School) and not one's connectedness to school per se, student engagement was assessed using the Student Engagement Instrument (SEI; Appleton et al., 2006). The SEI is a 33-item self-report survey designed for use with children in upper elementary and high school (see Appendix F). It has been shown to have good convergent and divergent validity, and internal reliability (Appleton et al., 2006). A total score was computed across subscales to reflect a global engagement score. The SEI was found to have good reliability in the current study (Cronbach's alpha = .93).

Academic Achievement

All participating schools were invited to provide academic data for the purpose of the current study. Of the ten schools surveyed only two schools allowed us to request parental consent to have report cards and Ontario School Records (OSR's) reviewed in order to be included in the current study. Both schools were High Schools in Guelph, Ontario. Parental consent was provided via a check-box on the consent form (see Appendix B). Out of a possible 159 students, 138 provided parental consent to share academic data. Thus, for this subset of the sample (N = 138, M_{age} = 15.00, 62.9% girls), overall grade average (percentage score) across all subjects for the academic year was used to assess academic achievement and represented a second academic outcome.

Analytic Plan

From a data analysis perspective, there were four overarching objectives to this study. First, I sought to identify and describe distinct profiles of personal strengths that could be used to classify students. Profiles refer to patterns of responses across personal strengths domains and can be used to describe groupings, or constellations, of strengths

that are most salient within each profile. Second, profile membership was compared across age groups. Third, gender differences across profiles were examined. Fourth, the associations between strengths profile membership and developmental outcomes were examined.

Analyses were conducted using Mplus 7.0 (Muthén & Muthén, 2012) and the Statistical Package for the Social Sciences (SPSS 20). Data underwent standard procedures for cleaning and verifying assumptions of multivariate and univariate normality. Multivariate outliers were detected by examining Malhalbonious distances (Tabachnick & Fidell, 2007). Univariate outliers were detected using both tests of normality, as well as visual examinations of histograms (Tabachnick & Fidell, 2007).

Missing value analyses revealed that data were missing at random (MAR), allowing for the use of maximum likelihood estimation without the need for missing value substitution (Schafer & Graham, 2002). Descriptive statistics were conducted among the variables of interest for the entire sample (see Table 2). Pearson moment correlations are presented in Table 3 and revealed that all SAI subscales were significantly correlated with one another, reflecting the presence of a latent dimension (Bauer & Curran, 2004).

Latent Profiles of Personal Strengths

In order to address Objective 1 and identify distinct profiles of personal strengths, latent profile analyses (LPA; Goodman 1974) were conducted with the eight specified subscales of the SAI to detect the presence of latent profiles of strengths, or response patterns, across three developmentally meaningful age groups: late childhood (ages 8 to

11), early adolescence (ages 12 to 14), and mid- to late adolescence (ages 15 to 18). LPA is a multivariate, model-based approach, derived from traditional cluster analysis techniques. In LPA, it is assumed that there is an underlying latent categorical variable that has a number of categories or profiles. Profiles reflect a distinct pattern of responding to variables of interest, such as personal strengths domains. The technique allows for individuals to be assigned to one mutually exclusive category, hypothesized as one of the three profiles described earlier. Classification is person-centred, and based on participants' responses to observed variables of interest, using *posterior probability* estimates (Hagenaars & McCutcheon, 2002; Lanza, Flaherty, & Collins, 2003; McCutcheon, 1987). These posterior probabilities are estimates of how likely it would be for a given individual to belong in a given profile. Profile assignment for each participant is commonly achieved by *modal assignment*, a process by which the individual is assigned to the profile associated with the largest of the posterior probabilities for that individual. This statistical technique is advantageous for a number of reasons. Namely, LPA allows for continuous and categorical data and within profile heterogeneity (Wang & Hanges, 2010). LPA can also handle abnormal distributions, missing data, and modestly correlated variables (Vermunt & Magidson, 2002). Furthermore, LPA employs formal criteria and fit statistics to guide the determination of classes (Vermunt & Magidson, 2002). The continuous probability estimates also allow for a variety of follow-up statistical analyses, including regression analyses.

A combination of statistical indicators was used to assess model fit and aid in determining which model fits the data best. There is no formal cut-off to guide model

selection, so fit indices were compared to determine the best fitting solution. Fit indices included the Akaike Information Criterion (AIC; Akaike, 1987), the Bayesian Information Criterion (BIC; Schwarz, 1978) and the sample-size adjusted BIC (SABIC; Sclove, 1987), whereby lower values indicated a better fitting model. The Vuong-Lo-Mendell-Rubin (VLMR; Lo, Mendell, & Rubin, 2001) adjusted likelihood test is an inferential statistic that, when significant ($p < .05$) indicates that the specified model with k profiles fits better than a model with k-1 profiles (Muthén & Muthén, 2012). Finally, entropy scores were used to assess the accuracy of the model, with values closer to 1 reflecting greater accuracy. Average posterior probabilities for each profile were also considered, with higher values indicating greater accuracy in classifying individuals.

As a 3-profile model was expected (*High, Moderate,* and *Low Strengths*), 2-, 3-, and 4-profile models were specified and tested. To verify the distinctiveness between profiles, one-way Analyses of Variance (ANOVAs) were performed comparing profiles on the mean score for each SAI subscale. In order to describe the profiles, linear regressions were performed examining the association between class membership and each of the scores on the personal strength domains. To do this, separate multiple regressions were conducted for each profile, using posterior probability estimates as the dependent variables and SAI subscale scores entered simultaneously as the independent variable.

Personal Strengths Profiles and Age

Objective 2 of the study was to investigate the association between personal strengths profiles and age. In order to address this objective, the class probabilities and

class assignments generated from the LPA were extracted from Mplus and merged with the original dataset in SPSS. The mean age for each profile was compared using a one-way ANOVA. As a complementary analysis, separate two-way ANOVAs were conducted using posterior probability estimates generated from the LPA as a continuous independent variable. Comparisons between age groups (late childhood, early adolescence, and mid-/late adolescence) were conducted to determine if profile probabilities differed with gender Significant ANOVAs were followed up with pairwise comparisons, subjected to Bonferroni corrections to protect against Type I error, to probe significant effects.

Personal Strengths Profiles and Gender

Objective 3 of the study was to investigate the association between personal strengths profiles and gender. In order to address this objective, separate two-way ANOVAs were conducted using posterior probability estimates generated from the LPA as a continuous independent variable. Comparisons between boys and girls were conducted to determine if profile probabilities differed with gender. An age by gender interaction was also tested, using simple effects. Significant ANOVAs were followed up with pairwise comparisons, subjected to Bonferroni corrections to protect against Type I error, to probe significant effects.

Associations Between Personal Strengths Profiles and Developmental Outcomes

Objective 4 of the study was to examine the association between personal strengths profiles and developmental outcomes. To address Objective 4, multiple regression analyses were conducted using the posterior probability estimates as a

continuous predictor of mental health (i.e. subjective happiness and social/emotional difficulties) and academic (i.e., student engagement, attendance, and grades) outcomes. Separate multiple regressions were performed for each outcome. For mental health outcomes, scores on the SDQ (social/emotional difficulties) and SHS (happiness) were used as the dependent variables and group membership probability estimates for each profile were entered separately as independent variables. For academic outcomes, the SEI (student engagement) was the dependent variable, and probability estimates were the independent variables. For the subset of the sample (n = 138) who provided parental consent to access academic records, multiple regressions were performed with grades (as an average percentage for the year) as the dependent variable and posterior probability estimates as the independent variables.

Results

Latent Profile Analysis

To examine unique profiles of personal strengths, LPA was conducted using eight continuous subscales of the SAI. The percentage scores of the Strengths at Home, Strengths at School, Strengths with Friends, Strengths from Knowing Myself, Strengths from Keeping Clean and Healthy, Strengths During Free Time, Strengths from Faith and Culture, and Strengths from Goals and Dreams were used. As a 3-profile solution was hypothesized, 2-, 3-, and 4-profile models were estimated, starting with the most restrictive (2-profile) model followed by a less restricted model. Results indicated that a 3-profile model was the optimal fit, when considering goodness of fit, parsimony, and theory. With regard to model fit, the 3-profile model had a lower AIC, BIC, and SABIC

values than the 2-profile solution. The addition of a 4th profile did not improve the model fit considerably. Additionally, the VLMRT was significant (p = .02) indicating that the 3-profile model was a better fit than the 2-profile model. The entropy value for the 3-profile model was 0.83, suggesting good separation between classes and high accuracy of classification within classes. Fit indices for 2- through 4-profile models are summarized in Table 4. For the 3-profile model, average posterior probabilities were high (0.95, 0.91, and 0.92), indicating that profile assignment was accurate and lending further support for a 3-profile solution.

The profiles comprising the 3-profile model are presented in Figure 1. Fifty-nine participants (14% of the sample) were classified to profile 1. This profile was characterized by the lowest scores across all SAI scales. This profile was labeled the *Low Strengths* group. Profile 2 included 157 participants (38% of the sample) and was characterized by moderate scores across the SAI scales. Accordingly, this profile was labeled the *Moderate Strengths* group. Finally, profile 3 was comprised of 198 participants (48% of the sample) and was characterized by the highest scores on all SAI scales. This profile was labeled the *High Strengths* group. Significant mean differences between the three profiles were observed for all SAI scales (see Table 5), further validating the distinctiveness of the three profiles.

In addition to examining patterns of response within each profile, it was expected that each profile would be characterized by a different set of personal strengths. To confirm this, separate multiple regression analyses were performed with class probabilities used as dependent variables and each SAI subscale entered simultaneously

as the independent variables. Results indicated not only that individuals in the *Low Strengths* profile demonstrated low scores on all SAI subscales, but also that the probability of belonging to the *Low Strengths* profile was significantly predicted by six personal strengths, explaining 64% of the variance, $F(8, 344) = 75.17$, $p < .001$). Membership in the *Low Strengths* profile were associated with low scores on the following scales: Strengths at Home, Strengths at School, Strengths with Friends; and Strengths from Faith and Culture, and Strengths from Goals and Dreams (see Table 6). The probability of belonging to the *Moderate Strengths* profile was significantly predicted by four personal strengths, explaining 16% of the variance, $F(8, 344) = 8.29$, $p < .001$. Thus, individuals in the *Moderate Strengths* group exhibited moderate scores across all SAI subscales, and membership in the *Moderate* Strengths profile was associated with low scores on Strengths During Free Time, Strengths from Knowing Myself, Strengths from Keeping Clean and Healthy, and higher scores on Strengths from Goals and Dreams (see Table 6). The probability of belonging to the *High Strengths* profile was significantly predicted by six personal strengths, explaining 72% of the variance, $F(8, 344) = 112.12$, $p < .001$. The *High Strengths* group was characterized by elevated scores on all of the SAI subscales, and membership was associated with higher scores on Strengths at Home, Strengths at School, Strengths from Knowing Myself, Strengths During Free Time, Strengths with Friends, and Strengths from Keeping Clean and Healthy (see Table 6).

With respect to characteristics and competencies, all five competency-oriented scales (Strengths at Home, Strengths at School, Strengths with Friends, Strengths from

Knowing Myself, and Strengths from Keeping Clean and Healthy) differentiated between at least two profiles. Strengths at Home and Strengths at School predicted membership in both the *Low Strengths* and *High Strengths* profiles. Strengths from Keeping Clean and Healthy predicted membership in both the *Moderate* and *High Strengths* profiles. Strengths with Friends and Strengths from Knowing Myself predicted membership in all three profiles. Two of the scales that predominately reflected characteristics differentiated between two profiles. Strengths During Free Time predicted membership in the *Moderate* and *High Strengths* groups, whereas Strengths from Goals and Dreams predicted membership in the *Low* and *Moderate Strengths* profiles. Strengths from Faith and Culture predicted membership in only the *Low Strengths* group.

Within the *Moderate Strengths* profile, one strength was protective against membership in the *Low Strengths* group. Strengths from Goals and Dreams were negatively associated with membership in the *Low Strengths* group, but positively associated with membership in the *Moderate Strengths* group. Three personal strengths were positively associated with membership in the *High Strengths* group, but negatively associated with membership in the *Moderate Strengths* group: Strengths During Free Time, Strengths From Knowing Myself, and Strengths from Keeping Clean and Healthy. Thus, being low in these personal strengths was conceptualized as a vulnerability.

Personal Strengths Profiles and Age/Gender

To examine whether personal strengths profiles varied by age, the mean age for each profile was compared. Results indicated that, on average, participants in the *Moderate Strengths* profile were older ($M = 13.06$, $SD = 2.20$) than those in the *Low* ($M =$

12.59. *SD* = 2.24) and *High Strengths* profiles (*M* = 12.19, *SD* = 2.16). The omnibus ANOVA was significant, $F(2, 411) = 6.87$, $p = .001$, but pairwise comparisons revealed significant differences between only the *Moderate* and *High Strengths* profiles, $t(412) = 3.707$, $p = .001$. The mean ages for those in the *Low* and *Moderate Strengths* profiles did not differ ($p = .48$), nor did they for the *Low* and *High Strengths* groups ($p = .67$).

As a complementary analysis, three separate two-way ANOVAs were conducted for each profile comparing probability of group membership across gender and three developmentally meaningful age groups: late childhood (age 8 to 11), early adolescence (age 12 to 14) and middle/late adolescence (age 15 to 18). These analyses revealed that for the *Low Strengths* profile there was a main effect for gender, $t(413) = 4.42$, $p = .04$, with boys reporting higher probabilities of membership (*M* = .19, *SD* = .03) in the *Low Strengths* group than girls (*M* = .12, SD = .02). There was no main effect of age group, meaning group membership did not differ across the three age groups ($p = .68$). The gender by age interaction effect was not significant ($p = .07$). For the *Moderate Strengths* profile the effect of gender was non-significant ($p = .99$). There was a main effect of age group, $F(2, 408) = 5.64$, $p = .004$. Pairwise comparisons revealed that those in the late childhood group were less likely (*M* = .31, *SD* = .03) to belong to the *Moderate Strengths* group than those in the middle/late adolescent group (*M* = .49, *SD* = .04). Those in the early adolescent group (*M* = .41, *SD* = .03) did not differ from the other two age groups. The gender by age interaction effect was not significant ($p = .95$). For the *High Strengths* profile, there was no gender effect ($p = .12$). Group membership did differ across the three age groups, $F(2, 408) = 7.14$, $p = .001$. Probability scores were highest for the late

childhood group (M = .56, SD = .04), second highest for the early adolescence group (M = .42, SD = .04), and lowest for the middle/late adolescence group (M = .35, SD = .05). Pairwise comparisons revealed significant differences between the late childhood group and the early adolescence, $t(410) = 2.60$, $p = .03$, and middle/late adolescence, $t(410) = 3.60$, $p = .001$. The gender by age interaction effect was not significant ($p = .19$).

Personal Strengths Profiles and Developmental Outcomes

To examine the association between personal strengths profiles and developmental outcomes, separate multiple regressions were performed with outcome scores as the dependent variable and group membership probability entered separately as independent variables.

Mental health. Results indicated that scores on the Total Difficulties score on the SDQ (social/emotional difficulties) were significantly predicted by two predictors, $F(2, 409) = 82.38$, $p < .001$, $\Delta R^2 = .20$. Higher scores on the Total Difficulties scale of the SDQ were associated with a greater probability of belonging to the *Low Strengths* group, $\beta = .199$, $t(409) = 4.28$, $p < .001$, and a lower probability of belonging to the *High Strengths* group, $\beta = -.417$, $t(409) = -8.99$, $p < .001$. Similarly, mean scores on the SHS (happiness) were significantly predicted by membership in the *Low* and *High Strengths* groups, $F(2, 411) = 49.44$, $p < .001$, $\Delta R^2 = .19$. Subjective happiness was associated with a lower probability of belonging to the *Low Strengths* group, $\beta = -.17$, $t(413) = -3.50$, $p = .001$, and a higher probability of belonging to the *High Strengths* group, $\beta = .34$, $t(413) = 6.78$, $p < .001$.

Academic functioning. Analyses examining the effect of group membership on academic engagement revealed that scores on the SEI were significantly predicted by three predictors, $F(2, 410) = 111.59$, $p < .001$, $\Delta R^2 = .35$. Student engagement was negatively associated with membership in the *Low Strengths* group, $\beta = -.38$, $t(412) = -8.52$, $p < .001$, and the *Moderate Strengths* group, $\beta = -.11$, $t(412) = -2.25$, $p = .03$. Higher scores on the SEI were predicted by a greater probability of belonging to the *High Strengths* group, $\beta = .319$, $t(412) = 7.18$, $p < .001$. A subset of the sample provided parental consent to access their educational records ($n = 138$). For these students, average overall grade for the year was significantly predicted by two predictors, $F(2, 137) = 14.06$, $p < .001$, $\Delta R^2 = .16$. Higher grades were associated with a lower probability of belonging to the *Low Strengths* group, $\beta = -.287$, $t(137) = -3.40$, $p = .001$, and a higher probability of belonging to the *High Strengths* group, $\beta = .212$, $t(137) = 2.51$, $p = .013$.

Discussion

Summary of Findings

Despite the increasing interest in personal strengths among children and adolescents, there has been a dearth of research on the correlates of strengths, (Proctor, Maltby, & Linley, 2011; Brownlee et al., 2013). Additionally, the existing research has been limited to adult populations and a unidimensional conceptualization of personal strengths that does not account for the interplay of multiple strengths. By considering personal strengths as a multidimensional construct, the current study was able to identify three distinct strengths profiles, or response patterns: *Low, Moderate,* and *High Strengths*. Each profile was associated with a unique set of personal strengths. Although participants

in all three profiles reported an overall high level of strengths (i.e., endorsing more than 50% of scale items across all domains) a few key personal strengths emerged as most beneficial for children and adolescents. Thus, it may be more important for young people to exhibit a high level of personal strengths in the key domains identified in this study (i.e., family and peer relationship skills, and self-awareness) than it is to present with many personal strengths overall. Employing Rawana and Brownlee's (2009) definition of personal strengths, that differentiates *characteristic*-oriented strengths, or those existing instinctively within an individual, and *competency*-oriented strengths, or those skills that are purposefully developed over time, it was found that membership in the *High Strengths* profile was associated with high scores on mostly competency-oriented personal strengths. By contrast, membership in the *Low Strengths* profile was associated with low scores on four competency- and two characteristic-oriented personal strengths. Finally, membership in the *Moderate Strengths* profile was associated with two competency- and two characteristic-oriented personal strengths. Profile membership was also found to be associated with age, such that children in the *Moderate Strengths* group tended to be older than those in the *High Strengths* group. Boys had a greater probability for membership in the *Low Strengths* group than girls. The current study also examined broadly defined developmental outcomes and found that social-emotional difficulties and subjective happiness were associated with membership in both the *Low* and *High Strengths* profiles. Low levels of student engagement and low grades were associated with membership in both the *Low* and *Moderate Strengths* profile; whereas high levels of student engagement and high grades were associated with membership in the *High*

Strengths profile.

Personal Strengths Profiles

Consistent with previous studies that have found high levels of personal strengths among children and adolescents (Roehlkerpartain et al., 2003) the current study also found that participants generally reported high levels of personal strengths, endorsing more than 50% of scale items across all domains. Despite an overall high level of personal strengths within the sample, a three-profile model was found to fit the data best, which was consistent with hypotheses. Also, as expected, each profile was characterized by a different set of salient personal strengths.

Low strengths profile. The *Low Strengths* group consisted of the smallest proportion (14%) of participants and was characterized by the lowest strength scores across all domains. Membership in the *Low Strengths* profile was associated with low scores on mostly competency-oriented domains of personal strengths, namely family relationship skills, school functioning, interpersonal skills, and self-awareness. Low scores on two characteristic-oriented domains of personal strengths, spiritual/cultural identity and optimism/future orientation, were associated with membership in the *Low Strengths* profile. Given that membership in this profile was associated with worse mental health and academic outcomes compared to other profiles, the personal strengths associated with this strengths group could reflect key strengths to target for preventing maladaptive outcomes. Previous research provides ample support for the role of family relationships skills, school functioning, and peer relationships skills in the prevention of a variety of social emotional and psychological difficulties (Drugli, Klokner, & Larsson,

2011; Kim & Cicchetti, 2010; Weich Patterson, Shaw, & Stewart-Brown, 2009). Indeed, numerous studies underscore these three domains as the most important influences in a young person's life (Garnefski & Diekstra, 1996; Roehlkerpartain et al., 2003; Theokas & Lerner, 2006). Membership in this profile was also associated with a lower sense of self-awareness. While findings from several studies have noted the negative effect of a low sense of self-awareness or concept among adolescents (e.g., Ferguson, Hafen, & Laursen, 2010), research has neglected this effect among younger children. The fact that low self-awareness had a negative effect on both children and adolescents, suggests that there may be a rationale for fostering an understanding of oneself even from a young age. With regard to the characteristic-oriented personal strengths, low levels of spiritual/cultural identity and optimism predicted membership in the *Low Strengths*. These findings are consistent with previous research that has noted the negative effects of low spirituality (Bullock, Nadeau, & Renaud, 2012), cultural identity (Guerrero, Nishimura, Chang, Ona, Cunanan, & Hishinuma, 2010), and optimism (Wray, Dvorak, Hsia, Arens, & Schweinle, 2013).

It was expected that individuals in the *Low Strengths* profile would exhibit low levels of competency-oriented personal strengths reflecting an underdevelopment of valuable and protective skills. Unlike what was hypothesized, the personal strengths that were associated with membership in the *Low Strengths* profile were a mixture of competency- and characteristic-oriented personal strengths. While children and adolescents in the *Low Strengths* profile do seem to experience an underdevelopment of competencies, it also appears that membership in this profile is accompanied by low

levels of character strengths. This feature might help explain why membership in the *Low Strengths* profile, despite its members endorsing more than 50% of items in all domains on average, was still associated with greater social emotional difficulties, lower levels of happiness, lower grades, and less student engagement. Specifically, it might suggest that what matters for preventing negative outcomes is a balanced development of both competencies and characteristics.

Moderate strengths profile. The *Moderate Strengths* profile comprised 38% of the sample and was characterized by moderate personal strengths scores. The *Moderate Strengths* profile was associated with two competency-oriented personal strengths, self-awareness and daily living skills, and two characteristic-oriented personal strengths, age-appropriate interests and future orientation/optimism. Indeed, the emergence of a *Moderate Strengths* group can be considered unique to this study, as previous research has tended to focus on comparing individuals who report high levels of strengths to those who report low levels of strengths (Roehlkerpartain et al., 2003). Membership in the *Moderate Strengths* profile was associated with only low levels of student engagement, suggesting that individuals classified in the *Moderate Strengths* group represent an at-risk subset, at least for the outcome of student engagement.

A comparison of the personal strengths that were associated with membership in the *Moderate Strengths* profile with those associated with the other two groups permitted the examination of key personal strengths that when high, protected individuals from being classified into the *Low Strengths* profile, and when low, prevented individuals from belonging to the *High Strengths* profile. A specific personal strength was considered

protective if it was negatively associated with membership in the low strengths group, but positively associated with membership in the *Moderate Strengths* group, as they increased the likelihood that the individual would belong to a relatively higher strengths group (which in turn was associated with better outcomes). Conversely, a low level of a personal strength was considered a vulnerability if it were positively associated with membership in the high strengths group but negatively associated with membership in the moderate strengths group, as it decreased the likelihood that the individual would belong to the relatively lower strengths group (which in turn was associated with worse outcomes). Being high in optimism/future orientation was protective, whereas being low in daily living skills, self-awareness skills, and age-appropriate interests were vulnerabilities.

These findings provide key insight for the development of universal mental health promotion programs, as well as targeted and selective prevention programs. In particular, increasing daily living skills, self-awareness, and age-appropriate interests would make a logical target for universal promotion programs, given their potential to facilitate movement from a moderate strengths profile to a high strengths profile. For example, the Penn Resiliency Program, a well-known universal program aimed at preventing future depressive symptoms focuses on coping skills framed within a cognitive-behavioural framework (Gillham et al., 2007). While the program's components effectively promote the development of self-awareness, at least of emotions and cognitions, findings from the current study might suggest also fostering daily living skills and age-appropriate interests. On the other hand, selective prevention programs should seek to increase optimism and

future orientation, which are associated with a vulnerability for membership to a low strength group and more negative social emotional and academic outcomes. Existing selective programs, such as the Leadership, Education, Achievement, and Development (LEAD) program, often promote personal strengths that are universally beneficial (e.g., self-awareness, self-control; Shelton, 2009). These programs may wish to also foster optimism and future orientation, perhaps through the development of skills for setting goals that are realistic and align with the young person's individual set of personal strengths.

High strengths profile. The third profile was labeled the *High Strengths* profile and consisted of just under half of the sample (48%). This profile was characterized by the highest scores across all domains. Similarly, high scores on mostly competency-oriented personal strengths were associated with membership in the *High Strengths* group, namely family relationship skills, school functioning, interpersonal skills, self-awareness, and daily living skills. Having age-appropriate interests, a characteristic-oriented domain, also was associated with membership in the *High Strengths* profile.

Consistent with hypotheses, competency-oriented personal strengths differentiated between the two extreme profiles, the *Low* and *High Strengths* groups. This finding is also consistent with how personal strengths have been conceptualized by Rawana and Brownlee (2009), who note that characteristics are intuitively present and tend to be stable, whereas competencies are more purposeful and dynamic, and are often the target of personal strengths-based interventions. The results from the current study would suggest that the differentiating dimension that separates those in the lowest

strength profile and those in the highest strength profile is the opportunity to develop valuable competencies, such as relationship skills and self-awareness. Thus, while a balance of characteristic- and competency-oriented strengths seems to be helpful in preventing maladaptive outcomes, as evidenced by personal strengths that were negatively associated with membership in the *Low Strengths* profile, the development of competencies appears to be integral for positioning children and adolescents to thrive and function most optimally. The findings do not negate the importance of characteristics, but underscore the compelling relationship between specific competencies and outcomes. These findings highlight key competencies that are of particular interest for targeting as part of a strengths-based intervention. Another key personal strength that was identified was self-awareness skills, a competency that predicted membership in all three strengths profiles. Previous research has frequently noted the benefits of self-awareness and a strong self-concept (e.g., Huebner, Hills, & Jiang, 2013). Furthermore, self-awareness may also serve a doubly beneficial role, not only as a personal strength in and of itself, but also as a skill that promotes the understanding of one's strengths in other domains.

Personal Strengths Profiles and Age

Results from the current study did reveal age and gender differences with respect to strengths profiles, however, findings were not entirely consistent with what was hypothesized. While it was expected that older adolescents would be the most likely to belong to the *High Strengths* profile, and that the *High Strengths* profile would also be characterized by the oldest mean age, the results indicated that individuals in the *Moderate Strengths* profile were older than the *High Strengths* group. Furthermore,

individuals in late adolescence were more likely to belong to the *Moderate Strengths* group than younger children. Since previous research has tended to focus on differentiating between those reporting low levels of personal strengths and those reporting high levels of personal strengths, it is not entirely clear why older adolescents were most likely to be classified as exhibiting moderate levels of personal strengths. A plausible explanation may be the increased cognitive maturity and insight that accompanies late adolescence (Im-Bolter, Cohen, & Farnia, 2013). These cognitive developments may facilitate a more balanced self-concept that recognizes not only personal strengths, but also weakness, and is consequently best characterized by a moderate strengths profile.

Additionally, the findings with regard to age also indicated that, contrary to hypotheses, young children were most likely to belong to the profile that reported the highest level of personal strengths across all domains. On the presumption that personal strengths would accumulate with age and that young children would lack the cognitive maturity to identify strengths, it seemed unlikely that young children would endorse high levels of strengths. The fact that the opposite was found suggests either that young children possess a keener awareness of themselves and their personal strengths than anticipated, or that they have greater levels of personal strengths than their early and late adolescent counterparts. While previous research has confirmed that several character strengths, such as kindness, may be present from a very young age (Park, 2004; Park & Peterson, 2006), there is little evidence to suggest that young children would have higher levels of personal strengths than older children. It is perhaps more plausible that young

children are reaping the benefits of the increasing popularity and application of strengths-based approaches by educators, parents, and other care-givers, contributing to a heightened awareness of positive qualities. Moreover, it is also possible that young children have unrealistic perceptions about their positive qualities and/or may be more likely to focus on or exaggerate their personal strengths.

Personal Strengths Profiles and Gender

With regard to gender differences, the results from the current study indicated that there was a significant gender effect. Specifically, boys were more likely to be classified in the *Low Strengths* profile, suggesting that boys may be at risk for underdevelopment of personal strengths. This finding is consistent with previous research that has noted a trend for adolescent girls to report higher levels of personal strengths than boys (Roehlkerpartain et al., 2003). Since these gender differences have not been replicated in younger samples, the inclusion of preadolescent children certainly contributes to our growing understanding of the role of gender in the context of personal strengths. It should be noted that although a gender effect was found for the *Low Strengths* profile, no such gender effect existed within the other two strengths groups. Indeed, had girls been more likely to be classified to the *High Strengths* group, the gender effect would have been more robust. Previous research on gender differences in different personal strengths has either focused on individual strengths (i.e., caring, kindness, industriousness, self-esteem) or on the cumulative number of personal strengths endorsed (Peterson et al., 2006; Puskar et al., 2010; Roehlkepartain et al., 2003; Shimai et al., 2006). In other words, gender differences have only been examined using a unidimensional lens to conceptualize

personal strengths. It is possible that when personal strengths are measured multidimensionally, as groupings or profiles of personal strengths, as was done in the current study, gender differences become less pronounced. It should be noted that while previous research neither suggests that the personal strengths measured by the SAI are biased towards females, nor that they predict outcomes differentially between males and females, the research in this area with the SAI is still preliminary, particularly with regards to developmental outcomes. Thus, findings related to gender differences should be interpreted cautiously in light of the emergent state of the literature.

Personal Strengths Profiles and Developmental Outcomes

In addition to notable age and gender differences between strengths profiles, differences on important developmental outcomes were also found. As expected, membership in the *Low* and *High Strengths* profiles were associated with social/emotional difficulties and subjective happiness. Lower levels of social/emotional difficulties were associated with a lower likelihood of belonging to the *Low Strengths* profile, and a greater likelihood of belonging to the *High Strengths* profile. Similarly, greater happiness was associated with a lower likelihood of belonging to the *Low Strengths* profile, and a greater likelihood of belonging to the *High Strengths* profile. Also as hypothesized, the *Low* and *High Strengths* profiles were associated with academic outcomes, such that greater student engagement and better grades were associated with a lower likelihood of belonging to the *Low Strengths* profile, and a greater likelihood of belonging to the *High Strengths* profile. Taken together, these findings suggest that being high in personal strengths is protective, while being low in

personal strengths presents vulnerability. This finding is not particularly surprising per se, since the body of research on personal strengths has reiterated the positive effects of strengths (Tedeschi & Kilmer 2005), however, the fact that students in the current study reported overall high levels of personal strengths (i.e., more than 50% of strengths items endorsed in all domains) suggests that the mere presence of strengths may not be adequate to promote positive outcomes, such as happiness and student engagement. Examining the particular personal strengths that were associated with the *High Strengths* profile, namely family and peer relationship skills, school functioning, self-awareness skills, daily living skills, and age-appropriate interests, provides further insight into the profile of personal strengths that are most protective.

Although it was hypothesized that students who were likely to be classified in the *Moderate Strengths* profile would report better outcomes than the *Low Strengths* profile, membership in the *Moderate Strengths* group was associated with lower levels of student engagement. Thus, although moderate strengths were expected to promote well-being and/or student engagement, the *Moderate Strengths* group represented an at-risk profile that was associated with a negative outcome. The emergence of this moderate strengths group is a unique contribution of the current study and is a group worthy of further examination in future studies. In particular, future research should examine this group with respect to other correlates and outcomes to better understand the implications associated with a personal strengths profile that is neither high nor low. Furthermore, the *Moderate Strengths* profile may encompass a threshold for which the protective potential of personal strengths is triggered. Specifically, the *Low Strengths* and *High Strength*

profiles can be considered profiles of vulnerability and protectiveness, respectively given their associated outcomes. The overall outcomes associated with the *Moderate Strengths* profile were better than those associated with the *Low Strengths*, but worse than those associated with the *High Strengths* profile, acting as a buffer between the vulnerability of low levels of personal strengths and the protective effects of high levels of personal strengths. Thus, a closer examination of the *Moderate Strengths* profile, particularly longitudinally or as it relates to various developmental outcomes, may uncover a requisite level or response pattern that leads to optimal functioning. Clinically, this may translate to a cut-off score that could guide strengths-enhancing interventions.

Limitations

Although the current study makes important contributions to the growing understanding of personal strengths among children and adolescents, there are some limitations to the study that should be noted. The cross-sectional nature of the study places some limitation to the interpretability of the findings. First, the association between personal strengths profiles does not reflect a temporal prediction of later outcomes. Future studies would benefit from a longitudinal design that is able to examine the relation between personal strengths profiles and later outcomes. Second, although the sample in the current study included a wide age range that allowed for the exploration of developmental differences, the cross-sectional design limited the study to examinations *between* individuals, rather than *within* individuals over time. Following the same set of students across several years would enable the investigation of trajectories of personal strengths profiles across development.

Additionally, despite the wide age range, in the school-based design much is left to be understood about what happens with respect to personal strengths development prior to the age of eight and beyond the age of 18. While one study has examined personal strengths related to well-being among very young children (Park & Peterson, 2006), and several studies have done so among emerging adults (e.g., Benson & Scales, 2004; Hawkins, Letcher, Sanson, Smart & Toumbourou, 2009; Proctor et al. 2011) none have spanned pre-school to emerging adulthood. Future studies may wish to extend investigation into pre-school-aged children and emerging adulthood to determine if developmental trends are sustained into these extreme age ranges. In particular, it would be of interest to determine if the trend for younger children to report greater personal strengths holds when pre-school-aged children are included. If not, it may be possible to identify an optimal age for which strengths-enhancing strategies are most effective.

In the current study, ethical guidelines required the use of active consent, which has been shown to reduce participation rates (Tigges, 2003). Our response rate was roughly 17%, which is low, even by active-consent standards. The low participation rate raises questions about the generalizability of our findings. As noted, the current sample of students reported high levels of personal strengths, as well as elevated levels of happiness and school engagement. Given the burden of responsibility placed on students and their parents to provide active consent, it is possible that the final sample was comprised of the most engaged and motivated students and parents. Thus, the results from the current study should be interpreted with caution, especially with respect to how findings might apply to more diverse groups of children and youth.

Finally, the data were derived from self-reports, the accuracy of which is dependent on level of insight and social desirability (Furnham, 1986). Related to this, self-report measures inevitably complicate the role of self-awareness as both a personal strength in and of itself, and a prerequisite for identifying one's personal strengths in other domains. Thus, the finding that self-awareness is a salient personal strength across all three identified strengths profiles in the current study should be interpreted in light of the self-report nature of the measures used. Although our measures were validated for children as young as aged nine, the interpretation of questionnaire items may have varied considerably with age. In particular, questions on the SAI that required not only a strong sense of self-awareness, but also the ability to self-reference and compare oneself objectively to others (e.g., "I like board games, cards, and video games that are the right age for me") likely difficult to understand for younger respondents. The use of parent/teacher reports could have attenuated this limitation, but may have also introduced a different but equally troubling set of confounding influences, such as the influence of the parent-child relationship, parental well-being, and the possibility of a "halo effect" (Coolidge, 2011; Creemens, Eiser, & Blades, 2006).

Clinical Implications

Findings from the current study align with the broader research linking personal strengths to positive psychological and academic outcomes (Bromley et al., 2006; Cardemil et al., 2002; Gillham & Reivich, 2004; Gillham et al., 2011; Scheier & Carver, 1993; Selignman et al., 2007; Yu & Seligman, 2002). Unique contributions of the current study include a multidimensional conceptualization of personal strengths, a person-

centered approach, and the application of a developmental framework. These features have implications for clinicians and practitioners working with children and adolescents. By recognizing that domains of personal strengths exist in groupings, or profiles, strengths-based intervention and prevention programs can target the most salient personal strengths for optimal outcomes. In particular, promoting the development of family and peer relationship skills and self-awareness would seem most advantageous for children and adolescents. Furthermore, the fact that boys and older adolescents were particularly likely to belong to the *Low* and *Moderate Strengths* group suggests they may be the best potential recipients of interventions that seek to enhance personal strengths.

The findings from the current study encourage clinicians working with children and adolescents to adopt a broader strengths-based framework, rather than a resiliency model. A key finding from the study was the fact that in spite of the overall high level of personal strengths reported for the sample, the strengths profiles did differ with respect to their associations with outcomes. This suggests that the mere presence of personal strengths may not be adequate for optimal functioning. Thus, while it aligns with a resiliency model to target "at-risk" children and adolescents who appear to be depleted in personal strengths, results from the current study suggest that fostering personal strengths in all children, even among those who already seem to present with a number of personal strengths, is ideal. For example, a child client who would hypothetically be classified in the *Low Strengths* profile may present with several personal strengths across domains. However, a clinician may uncover through a comprehensive strengths assessment that the client has relatively fewer strengths in a key domain, such as interpersonal skills with

family members. Guided by the findings from the current study, clinicians may find it helpful to conceptualize that personal strengths occur in profiles. Thus, the very presence of many personal strengths may not be as beneficial as a high level of personal strengths in the key domains identified in this study: family and peer relationships skills, and self-awareness. Not only do the findings from the current study heighten the need for promoting personal strengths in all clients, but also gives a framework for identifying which personal strengths to foster. For example, a client who demonstrates strong interpersonal skills with friends, but struggles with relationships at home, may benefit from developing the skills needed to get along with family members.

Finally, the emergence of a *Moderate Strengths* profile that was associated with lower levels of student engagement has implications for primary and secondary prevention initiatives. Primary mental health promotion programs tend to be universal, targeting all children regardless of risk status (Gordon, 1983). Thus, for these types of programs it would be ideal to promote competencies that were found to increase the likelihood of membership in the *High Strengths* profile: daily living skills, self-awareness, and age-appropriate interests. Secondary prevention programs target children and adolescents who are deemed to be "at-risk" by virtue of their membership to a vulnerable group (e.g., children of depressed parents; Gordon, 1983). These programs would seek to increase personal strengths that prevented children and adolescents from falling into the *Low Strengths* profile: optimism and future orientation.

In summary, this study is the first to take a person-centered approach to understand the nature of groupings, or profiles, of personal strengths across development.

The associations between personal strengths profiles and developmental outcomes were examined. The results contribute to the increasing research on personal strengths and positive development, shedding light on the multidimensional nature of personal strengths, as well as gender and age differences. Key personal strengths identified in the current study include competencies, such as interpersonal skills and self-awareness, and characteristics, such as optimism. Findings from the current study have important implications for clinicians and practitioners wishing to employ a strengths-based approach in their work with children and adolescents. Future research studies, particularly those that use a longitudinal design, should build on the findings from the present research in order to further examine how personal strengths emerge, are cultivated, and change across development.

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Table 1.

Characteristics and Competencies Reflected in the Strengths Assessment Inventory[a]

SAI Scale[b]	Example Item	Characteristic	Competency
SAH	I get along with my brothers or sisters		Family Relationship Skills
SAS	I pay attention in class		School Functioning
SWF	I can be the leader with my friends when we are deciding what to do		Interpersonal Skills
SFKM	I know my own strengths		Self-awareness
SKCH	I go to bed and get up at the right time		Daily living skills
SDFT	I like to do things in my community	Age-appropriate interests	
SFC	I believe in something bigger than myself	Spirituality and cultural identity	
SGD	I want very much to achieve my goals and dreams	Future orientation, optimism	

Note. [a]Classifications signify that the scale predominantly (> 50% of scale items) reflect either characteristics or competencies. These classifications were generated by the developer of the SAI (E. Rawana, personal communication, May 4, 2013).
[b]Abbreviations for subscales are as follows: SAH = Strengths at Home, SAS = Strengths at School, SWF = Strengths with Friends, SFKM = Strengths from Knowing Myself, SKCH = Strengths from Keeping Clean and Healthy, SDFT = Strengths During Free Time, SFC = Strengths from Faith and Culture, SGD = Strengths from Goals and Dreams.

Table 2.

Descriptives for the Sample on Variables of Interest (N = 414)

	Mean	SD
Age	12.582	2.219
STRENGTHS (SAI[a])		
Strengths at Home	81.92	13.81
Strengths at School	81.39	13.33
Strengths with Friends	82.78	14.52
Strengths from Knowing Myself	80.73	13.63
Strengths from Keeping Clean and Healthy	78.56	16.53
Strengths During Free Time	66.61	15.02
Strengths from Faith Culture	72.57	19.51
Strengths from Goals and Dreams	85.83	16.04
Student Engagement (SEI[b] Total Score)	111.31	12.95
Social Emotional Difficulties (SDQ[c] Total Difficulties Score)	11.09	5.80
Subjective Happiness (SHS[d] Mean Score)	5.21	1.15

Note. [a]SAI = Strengths Assessment Inventory; [b]SEI = Student Engagement Inventory; [c]SDQ = Strengths and Difficulties Questionnaire; [d]SHS = Subjective Happiness Scale

Table 3.

Summary of Intercorrelations (Pearson Correlation for all SAI Subscales used in Latent Profile Analysis) (N = 414)

Measure	1	2	3	4	5	6	7	8
1. SAH	1	.542**	.561**	.593**	.502**	.467**	.391**	.466**
2. SAS	-	1	.502**	.541**	.560**	.496**	.396**	.480**
3. SWF	-	-	1	.617**	.459**	.464**	.380**	.538**
4. SFKM	-	-	-	1	.525**	.436**	.382**	.590**
5. SKCH	-	-	-	-	1	.432**	.355**	.427**
6. SDFT	-	-	-	-	-	1	.442**	.494**
7. SFC	-	-	-	-	-	-	1	.444**
8. SGD	-	-	-	-	-	-	-	1

Note. SAH = Strengths at Home, SAS = Strengths at School, SWF = Strengths with Friends, SFKM = Strengths from Knowing Myself, SKCH = Strengths from Keeping Clean and Healthy, SDFT = Strengths During Free Time, SFC = Strengths from Faith and Culture, SGD = Strengths from Goals and Dreams.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Table 4.

Fit Statistics for LPA of SAI Content Scales for 2-, 3-, and 4-Profile Models

	AIC	BIC	SABIC	VLMR *p*	Entropy
2-profile model	25465.862	25566.509	25487.178	*p* = .0001	0.887
3-profile model	25200.238	25336.917	25229.027	*p* = .0191	0.827
4-profile model	25126.881	25299.993	25163.544	*p* = .1325	0.810

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; SABIC = Sample-size Adjusted Bayesian Information Criterion; VLMRT = Vuong-Lo-Mendell-Rubin Test.

Table 5.

Mean Scores and Standard Deviations for SAI Content Scales for Each Profile

	Low Strengths (n = 59)		Moderate Strengths (n = 157)		High Strengths (n = 198)		F (*p-value*)
	M (min-max)	*SD*	*M (min-max)*	*SD*	*M (min-max)*	*SD*	
SAH	63.63 (37.5-96.83)	3.34	78.42 (45.83-100.0)	1.40	90.68 (59.09-100)	0.99	179.62 (<. 001)
SAS	63.40 (30.0-100.0)	2.91	78.22 (42.86-100.0)	1.53	89.68 (60.0-100.0)	0.92	183.27 (< .001)
SWF	61.46 (20.0-88.9)	2.90	80.52 (50.0-100.0)	1.85	90.54 (55.0-100.0)	0.89	209.39 (< .001)
SFKM	60.59 (36.11-90.63)	1.98	76.69 (50.0-100.0)	1.85	91.62 (72.22-100.0)	0.99	319.79 (< .001)
SKCH	59.39 (37.5-87.5)	2.56	73.04 (31.25-100.0)	2.28	89.24 (62.5-100.0)	1.11	166.72 (< .001)
SDFT	50.79 (15.9-86.84)	2.38	62.38 (36.11-94.74)	1.65	74.61 (34.21-100.0)	1.29	120.45 (< .001)
SFC	50.75 (5.00-93.75)	3.74	70.30 (25.0-100.0)	2.10	81.36 (25.0-100.0)	1.52	73.68 (< .001)
SGD	61.19 (28.57-100.0)	3.50	84.63 (50.0-100.0)	2.13	94.69 (57.14-100.0)	0.79	196.07 (< .001)

Note. SAH = Strengths at Home, SAS = Strengths at School, SWF = Strengths with Friends, SFKM = Strengths from Knowing Myself, SKCH = Strengths from Keeping Clean and Healthy, SDFT = Strengths During Free Time, SFC = Strengths from Faith and Culture, SGD = Strengths from Goals and Dreams.

Table 6.

Results from Regression Analyses for Personal Strengths Predicting Membership Probability for Each Profile

	Profile 1 (n = 59)			Profile 2 (n = 157)			Profile 3 (n = 198)		
	B	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
SAH	-.002	0.081	-.093*	-.003	0.158	-.091	.005	.001	.155***
SAS	-.004	0.001	-.146**	.000	0.002	-.005	.004	.001	.113**
SWF	-.005	0.001	-.202***	.002	0.002	.070	,003	.001	.083*
SFKM	-.004	0.001	-.149**	-.007	0.002	-.226**	.011	.001	.325***
SKCH	-.001	0.001	-.045	-.005	0.002	-.184**	.006	.001	.208***
SDFT	.001	0.001	.027	-.006	0.002	-.203**	.005	.001	.173***
SFC	-.002	0.001	-.126**	.001	0.001	.065	.001	.001	.032
SGD	-.007	0.001	-.308***	.006	0.002	.221**	.001	.001	.019
R^2			.636			.162			.737
F			75.17***			8.29***			112.12***

Note. SAH = Strengths at Home, SAS = Strengths at School, SWF = Strengths with Friends, SFKM = Strengths from Knowing Myself, SKCH = Strengths from Keeping Clean and Healthy, SDFT = Strengths During Free Time, SFC = Strengths from Faith and Culture, SGD = Strengths from Goals and Dreams.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

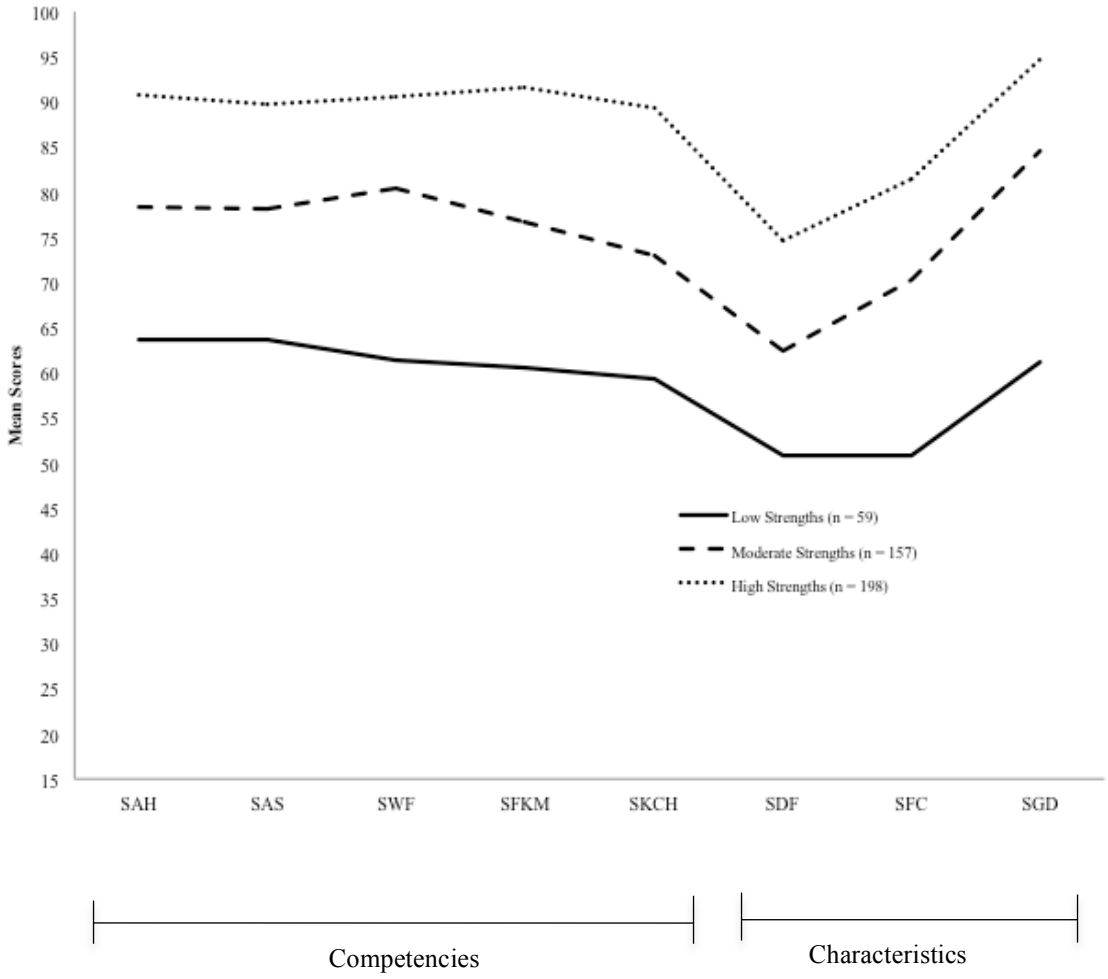

Figure 1. Profiles generated by latent profile analysis of SAI Content Scales. Each line represents a distinct profile and respective mean scores on each SAI scale.

Appendix A

Consent and Assent Forms

Parent/ Legal Guardian Information and Consent Form

Strengths In Motion Project

Dr. Margaret Lumley
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Dr. Jennine Rawana
Department of Psychology
voice: (416) 736-2100 ext. 20771
e-mail:rawana@yorku.ca

Introduction: As a part of its shift to a strengths-based approach to education, the Wellington Catholic District School Board in conjunction with the University of Guelph and York University is supporting a research project to look at youth-identified strengths and school engagement and how these relate to youth emotional wellbeing, academic performance, and learning skills. Results will be used to inform our understanding of factors that lead to positive functioning at school.

Procedure: We are asking that parents give permission for their child to complete a confidential survey, which will be completed on-line, taking about 45 minutes of class time. The survey inquires about strengths, beliefs, feelings and school engagement. To see how this survey relates to school performance, we are also asking your permission to access your child's report cards (grades and learning skills only) issued in this academic year. **We are interested in group patterns only and will not be analyzing or reporting on a particular student's results.** To gain a parent perspective, we also request that you as the parent/legal guardian complete a brief questionnaire about your child. Within the next year or so, we may also request your consent to contact you to invite your child to participate in an optional follow-up.

There are no known physical or social risks of participating in this research. Questions about feelings might upset some children; however, we believe the chance of this is minimal given the support from school administration and the measures that we have used. In our experience, young people have enjoyed participating in similar projects; however, participating in this study may not *directly* benefit your child. We are collecting information about mood but will not have appropriate information to address any clinical or diagnostic concerns about a particular child and will not be following up with parents about individual results. We will be giving all youth the phone number for KIDS

HELPLINE in the case they would like to talk to someone about upset feelings. Youth will be offered an opportunity to enter a draw to win an IPOD or 1 of 5 $20 gift certificates to Cineplex Theatres to thank them for their participation. Parents who return the questionnaire will be entered into a draw to win one of five $30.00 gift certificates to Stone Road Mall.

Your child will be told that he or she has a choice whether or not to participate and will also be told that he or she may withdraw from the study or choose not to answer a particular question at any time, without penalty. Withdrawal or refusal to answer questions will not influence any privileges or resources that your child receives from the school. If students withdraw, their data will be destroyed.

Confidentiality: We will be collecting identifying information on the youth, but such information will not be attached to the other measures completed. All measures completed by youth and parents are identified by ID number only. There is a master file that links participants' identities to the ID number which will be electronically stored for 7 years and then destroyed. Data files without identifying information will be kept indefinitely at the University of Guelph and York University. All information provided is strictly confidential and will be used for research purposes. Schools will not have access to any information we collect. We will be providing school personnel and interested parents with the major results of the study at an information night. Like you, we are interested in the wellbeing of youth and helping them to succeed personally, socially, and academically.

This project has been reviewed and received ethics clearance by the Research Ethics Board of the University of Guelph, the Human Participants Review Sub-Committee, York University's Ethics Review Board and the Wellington Catholic District School Board (WCDSB). If you have any questions or concerns regarding your family's rights or treatment as participant(s) in the project, you may contact Sandy Auld in the Research Ethics Board at the University of Guelph at 519-824-4120 ext. 56606 (reb@uoguelph.ca), or the Office of Research Ethics at York University (telephone 416-736-5914 or e-mail ore@yorku.ca). Moreover you can also contact Dr. Jennine Rawana or Dr. Margaret Lumley, whose contact information is listed above.

CONSENT FORM: **STRENGTHS IN MOTION PROJECT**

Please return to Classroom teacher

- ☐ I (the parent/guardian) consent to my child's participating in the **Strengths In Motion Project**
- ☐ I (the parent/guardian) consent to the researchers accessing my child's report cards issued from September 2011 to June 2012.
- ☐ I (the parent/guardian) agree to complete a brief 1-page questionnaire.
- ☐ I (the parent/guardian) consent to University researchers contacting us to invite participation in the optional follow-up component of the study.

Youth Information and Assent Form
Strengths In Motion Project

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Dr. Jennine Rawana
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Your school board along with York University and the University of Guelph is running a research project studying young people's strengths and difficulties and how these relate to emotions, feelings about school, grades and learning skills. Results will be used to help us understand more about the strengths and challenges young people face at school and what might help them achieve more positive school experiences.

Participating in this study will take about 45 minutes. In order to participate, if you are 18 years old or younger, your parents will have to give permission for you to partake in the study, but it is now your choice whether or not you would like to. During the study if there is a question you don't want to answer you don't have to. You may also say you want to stop doing the study without telling us why.

You will be asked about your problems and strengths, including questions about your self (e.g., "I look on the bright side of things"), feelings (e.g., "How happy do you feel?"), and feelings about school ("e.g., learning is fun because I get better at things").To see how these strengths, beliefs, and feelings relate to your academics, we are also asking your permission to get information about your grades and learning skills ratings from all your report cards this school year.

Your answers are used for our research and are private. We are interested in studying groups overall and do not look carefully at one student's answers. We won't tell your teacher or your school about your answers. We are asking questions about your feelings, but we won't be looking for individual results or following up with you. Your parent/guardian will also be filling out a brief survey, which will give us a different perspective about you.

It is possible that questions about your feelings could upset you. We are giving all students the information about KIDS HELPLINE in case they need to talk to somebody or need some help with how they are feeling. We can also take you to guidance if you'd

like to talk to someone now. We are interested in research that helps us know how to help young people succeed personally and academically. We find most young people enjoy participating in similar studies. You will be entered into a draw to win an IPOD or 1 of 5 $20 Cineplex gift certificates to thank you for participating.
This project has been reviewed and received ethics clearance by the University of Guelph, York University, and the Wellington Catholic District School Board (WCDSB). If you have any questions or concerns you can contact Sandy Auld from the Research Ethics Board at the University of Guelph by phone 519-824-4120 ext. 56606 or email reb@uoguelph.ca, or contact the manager of the Office of Research Ethics of York University, 309 York Lanes, 416-736-5914, e-mail ore@yorku.ca. You may also contact Dr. Jennine Rawana or Dr. Margaret Lumley, whose contact information is listed above.

CONSENT FORM: **STRENGTHS IN MOTION PROJECT**

Please return to Classroom teacher

- ☐ I (the youth) consent to my participating in the **Strengths In Motion Project**
- ☐ I (the youth) consent to the researchers accessing my report cards issued from September 2011 to June 2012.
- ☐ I (the youth) agree to my parent / guardian completing a brief 2-page questionnaire.
- ☐ I (the youth) consent to University researchers contacting us to invite participation in the optional follow-up component of the study.

Appendix B

Data Collection Procedure

Building from existing collaboration between the research team, the Wellington Catholic District School Board, and Lakehead Public Schools, schools were invited to participate in the study. Once school participation was obtained a research assistant from the research team visited the school to present the study and distribute consent forms. Of the ten schools surveyed, five schools were drawn from the Wellington Catholic District School Board, including two High Schools (n = 159) and three Elementary Schools (n = 119). The remaining five schools were drawn from Lakehead Public Schools and were all Elementary Schools (n = 136).

Students who provided parental consent and assent to participate in the study were pulled out of class to complete the survey online. When possible, surveys were loaded onto computers in the school computer lab. Additional netbooks were also provided by the research team. During questionnaire completion, members of the research team were available on-site to assist with navigating the online survey and to answer questions about content. Once surveys were completed, the de-identified data was securely downloaded by a member of the research team responsible for data management.

My main role during data collection was to provide support to the primary research assistant in finalizing the questionnaire, assisting with on-site data collection, and managing the data.

Appendix C

Strengths Assessment Inventory (Rawana & Brownlee, 2010)

You can do this checklist on your own. If you have trouble understanding a question, you should ask for help. You should answer all questions based on the last 6 months (for example, if you had a job 4 months ago, but do not now, you should still answer the questions in the 'Job' section based on the job you had 4 months ago. Answer each question for yourself. Be as honest as you can and try to answer all questions.

	Not at All	Some-times	Almost Always	N/A
Strengths at Home	0	1	2	3
1. I show that I care about other people in my family.	0	1	2	3
2. I like to do things with my family.	0	1	2	3
3. I can talk to someone in my family when I have something important to say, I trust them.	0	1	2	3
4. I get along with my sisters and brothers.	0	1	2	3
5. I get along with other people in my family.	0	1	2	3
6. I feel badly if I do things that upset people in my family.	0	1	2	3
7. I follow the rules at home.	0	1	2	3
8. I take responsibility for my behaviour at home.	0	1	2	3
9. I treat my family members with respect.	0	1	2	3
10. I do the chores I am asked to do.	0	1	2	3
11. I am open and honest with my parents or guardian.	0	1	2	3
12. I take care of my pet.	0	1	2	3
Strengths at School	0	1	2	3
13. I arrive on time for school.	0	1	2	3
14. I study for tests.	0	1	2	3
15. I take notes in school (such as, I copy from the board, or I write down what the teacher is saying).	0	1	2	3
16. I use my listening skills in school.	0	1	2	3
17. I pay attention in class.	0	1	2	3
18. I can work on my own when the teacher asks me to.	0	1	2	3
19. I do my homework.	0	1	2	3
20. I can read at my grade level of higher.	0	1	2	3
21. When the teacher asks me to complete work in class, I finish on time.	0	1	2	3
22. I get along well with school staff.	0	1	2	3
23. I am involved in school sports (such as, I try out for teams, or support the teams).	0	1	2	3
24. I am involved in other things at school (such as clubs or events).	0	1	2	3

25. I enjoy school.	0	1	2	3
26. I attend my classes.	0	1	2	3
27. I arrive on time for class.	0	1	2	3
Strengths During Your Free Time	0	1	2	3
28. I like to watch non-violent sports on TV (for instance, football, baseball, hockey & tennis).	0	1	2	3
29. I have a favourite team.	0	1	2	3
30. I watch TV shows that help kids and teens to learn.	0	1	2	3
31. I play a sport outside of school.	0	1	2	3
32. I like to listen to music.	0	1	2	3
33. I play an instrument.	0	1	2	3
34. I like to read.	0	1	2	3
35. I like to write (such as, I write poems, stories, or in my journal).	0	1	2	3
36. On the computer, I play games and go to web pages that are the right age for me.	0	1	2	3
37. I like to do art (such as, taking pictures, drawing, crafts).	0	1	2	3
38. I do things in my community (for instance volunteering, going to events).	0	1	2	3
39. I babysit or care for younger children.	0	1	2	3
40. When I get bored, I think of something fun to do that won't get me in trouble.	0	1	2	3
41. I stay active (for instance, I go for walks, bike rides, or rollerblade).	0	1	2	3
42. I like to bake or cook.	0	1	2	3
43. I like games such as board games, cards, and video games that are the right age for me.	0	1	2	3
44. I like to try doing new things.	0	1	2	3
45. I like doing things outdoors like hunting, fishing, or camping.	0	1	2	3
46. I have other hobbies (You can talk about your hobbies below).	0	1	2	3
Strengths with Friends	0	1	2	3
47. I choose friends who like to have fun but stay safe and out of trouble.	0	1	2	3
48. If one of my friends has a problem, I show that I care.	0	1	2	3
49. I am honest with my friends.	0	1	2	3
50. I can be the leader with my friends when we are deciding what to do.	0	1	2	3
51. My friends like me.	0	1	2	3
52. I get along well with my friends.	0	1	2	3
53. If my friends are thinking about doing something that is not safe, I can decide not to go along with it.	0	1	2	3

54. When my friends want to fight, I know how to help solve the problem or at least keep myself safe.	0	1	2	3
55. If my friends are fighting, I know when to get help from an adult.	0	1	2	3
56. I have at least one "best" friend with whom I am really close.	0	1	2	3
Strengths from Knowing Yourself	0	1	2	3
57. I have a good sense of humour.	0	1	2	3
58. I am happy about life.	0	1	2	3
59. I am open to finding out about new things.	0	1	2	3
60. I feel hopeful about my life.	0	1	2	3
61. I can control my anger.	0	1	2	3
62. I know my own strengths.	0	1	2	3
63. I feel confident.	0	1	2	3
64. When something does not turn out the way I hope, I can accept it.	0	1	2	3
65. I can listen and accept feedback, whether it is good or bad.	0	1	2	3
66. If there is something I am not good at, I try to get better or find something else I can do better.				
67. I can tell right from wrong.	0	1	2	3
68. I can ask for help when I need it.	0	1	2	3
69. I have skills that help me to solve problems.	0	1	2	3
70. I can be create or artistic.	0	1	2	3
71. I can judge whether my own behaviour is good or bad.	0	1	2	3
72. I am happy with the way I look.	0	1	2	3
73. I can cope when something happens that makes me very sad.	0	1	2	3
74. I can control my feelings when they start getting too strong.	0	1	2	3
Strengths from Keeping Clean & Healthy	0	1	2	3
75. I do things that help me to keep fit and active.	0	1	2	3
76. I keep my body clean.	0	1	2	3
77. I eat healthy food.	0	1	2	3
78. I go to bed and get up at the right time.	0	1	2	3
79. I keep my room clean by wiping off dust and cleaning the floor.	0	1	2	3
80. I put my clothes away and make my bed.	0	1	2	3
81. I keep my clothes looking nice.	0	1	2	3
82. I take my medicine and follow the instructions with care.	0	1	2	3
Strengths from Being Involved	0	1	2	3
83. I belong to a club, team or program that promotes a healthy lifestyle.	0	1	2	3

84. I respect other people and community leaders, such as coaches and teachers.	0	1	2	3
85. I respect community property.	0	1	2	3
86. I go to events in my community.	0	1	2	3
87. I volunteer for groups or at events in my community.	0	1	2	3
88. I feel like I am a part of the community.	0	1	2	3
Strengths from Your Faith & Culture	0	1	2	3
89. I pray or go to worship with or without others.	0	1	2	3
90. I feel that my spirit is close to nature.	0	1	2	3
91. I believe in something bigger than myself.	0	1	2	3
92. I feel I am part of a culture that is special (such as, special prayers, songs, holidays, food, and dances.	0	1	2	3
93. I think it is important to honour my culture.	0	1	2	3
94. I enjoy learning more about my culture and other people's cultures.	0	1	2	3
95. I am proud of who I am and where my people or family came from.	0	1	2	3
96. I respect others for who they are and where their people or family came from.	0	1	2	3
97. I think that there is purpose and meaning in life.	0	1	2	3
98. I can speak more than one language.	0	1	2	3
Strengths from Your Goal & Dreams	0	1	2	3
99. I want very much to achieve my goals and dreams.	0	1	2	3
100. I work to be at a certain grade level in school.	0	1	2	3
101. I have a dream for when I am an adult (such as, having a career, raising a happy healthy family, becoming really good at something).	0	1	2	3
102. I know that my life will change as I get older and I think about how I can plan for that.	0	1	2	3
103. When I set goals, I try hard to reach them.	0	1	2	3
104. I am willing to work hard to reach a goal that I have for the future.	0	1	2	3
105. I know how to make a plan to reach my goals.	0	1	2	3

Appendix D

Subjective Happiness Scale (Lyubomirksy & Lepper, 1999)

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
Not a very happy person						A very happy person

2. Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
Less happy						More happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
Not at all						A great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
Not at all						A great deal

Appendix E

Strengths and Difficulties Questionnaire (Goodman & Goodman, 2009)

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

	Not True	Somewhat True	Certainly True
1. I try to be nice to other people. I care about their feelings.	0	1	2
2. I am restless, I cannot stay still for long.	0	1	2
3. I get a lot of headaches, stomach-aches or sickness.	0	1	2
4. I usually share with others (food, games, pens etc.).	0	1	2
5. I get very angry and often lose my temper	0	1	2
6. I am usually on my own. I generally play alone or keep to myself.	0	1	2
7. I usually do as I am told.	0	1	2
8. I worry a lot.	0	1	2
9. I am helpful if someone is hurt, upset or feeling ill.	0	1	2
10. I am constantly fidgeting or squirming.	0	1	2
11. I have one good friend or more.	0	1	2
12. I fight a lot. I can make other people do what I want.	0	1	2
13. I am often unhappy, down-hearted or tearful.	0	1	2
14. Other people my age generally like me.	0	1	2
15. I am easily distracted, I find it difficult to concentrate.	0	1	2
16. I am nervous in new situations. I easily lose confidence.	0	1	2
17. I am kind to younger children.	0	1	2
18. I am often accused of lying or cheating.	0	1	2
19. Other children or young people pick on me or bully me.	0	1	2
20. I often volunteer to help others (parents, teachers, children).	0	1	2
21. I think before I do things.	0	1	2
22. I take things that are not mine from home, school or elsewhere.	0	1	2
23. I get on better with adults than with people my own age.	0	1	2
24. I have many fears, I am easily scared.	0	1	2
25. I finish the work I'm doing. My attention is good.	0	1	2

Appendix F

Student Engagement Instrument (Appleton, Christenson, Kim & Reschly, 2006)

	Strongly Disagree			Strongly Agree
1. Overall, adults at my school treat students fairly.	1	2	3	4
2. Adults at my school listen to the students.	1	2	3	4
3. At my school, teachers care about students.	1	2	3	4
4. My teachers are there for me when I need them.	1	2	3	4
5. The school rules are fair	1	2	3	4
6. Overall, my teachers are open and honest with me.	1	2	3	4
7. I enjoy talking to the teachers here.	1	2	3	4
8. I feel safe at school.	1	2	3	4
9. Most teachers at my school are interested in me as a person, not just as a student.	1	2	3	4
10. The tests in my classes do a good job of measuring what I'm able to do.	1	2	3	4
11. Most of what is important to know you learn in school.	1	2	3	4
12. The grades in my classes do a good job of measuring what I'm able to do.	1	2	3	4
13. What I'm learning in my classes will be important in my future.	1	2	3	4
14. After finishing my schoolwork I check it over to see if it's correct.	1	2	3	4
15. When I do schoolwork I check to see whether I understand what I'm doing.	1	2	3	4
16. Learning is fun because I get better at something.	1	2	3	4
17. When I do well in school it's because I work hard.	1	2	3	4
18. I feel like I have a say about what happens to me at school.	1	2	3	4
19. Other students at school care about me.	1	2	3	4
20. Students at my school are there for me when I need them.	1	2	3	4
21. Other students here like me the way I am.	1	2	3	4
22. I enjoy talking to the students here.	1	2	3	4
23. Students here respect what I have to say.	1	2	3	4
24. I have some friends at school.	1	2	3	4
25. I plan to continue my education following high school.	1	2	3	4
26. Going to school after high school is important.	1	2	3	4
27. School is important for achieving my future goals.	1	2	3	4
28. My education will create many future opportunities for me.	1	2	3	4
29. I am hopeful about my future.	1	2	3	4
30. My family/guardian(s) are there for me when I need them.	1	2	3	4
31. When I have problems at school my family/guardian(s are willing to help me.	1	2	3	4
32. When something good happens at school, my family/guardian(s) want to know about it.	1	2	3	4
33. My family/guardian(s want me to keep trying when things are tough at school.	1	2	3	4