

Conceptualizing Strengths: Positive Development and Mental Health Correlates in Emerging
Adult Undergraduate Students

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Abstract

Research on individual strengths has historically been conducted with samples across the lifespan. However, the conceptualization and operationalization of strengths has varied by study, leaving gaps in the literature. In the present study, the character and psychosocial strengths models were employed simultaneously to extend the psychosocial strengths approach into the emerging adult undergraduate population. $N=280$ undergraduate students from Lakehead University were recruited to complete measures of character strengths, psychosocial strengths, retrospective strength development over time, well-being, anxiety, depression, stress, emotional experience, and conduct problems. A number of hypotheses were tested to clarify the nature of the relationships between these variables of interest and to establish construct validity for the Strengths Assessment Inventory – Post Secondary (SAI-PS). The main findings were generally consistent with the stated hypotheses and are used to frame psychosocial strengths within a developmental model. Most notably, psychosocial strengths were significantly and positively associated with well-being, though the respective negative associations found between psychosocial strengths and depression and anxiety were no longer significant when accounting for the variability due to stress. Emerging adulthood can be reconceptualized in light of the positive associations between emotional character strengths and psychosocial strengths, as the present findings were aligned with previously established theories of strengths in other life stages. Psychometric properties of the SAI-PS were established in terms of convergent validity with well-being and character strength measures, and discriminant validity with depression, anxiety, and conduct problem measures. Implications of the results for future strength-based interventions and research are discussed.

Conceptualizing Strengths: Positive Development and Mental Health Correlates in Emerging
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Research concerning individual strengths is an integral part of the positive psychology literature. A large portion of this literature has been devoted to the examination of strengths as they relate to the well-being and resilience of children and adolescents, as developing personal strengths constitutes a vital part of identity development and the fostering of a sense of purpose that lasts throughout the rest of one's life (Rawana & Brownlee, 2009). Though strength formation begins during childhood and adolescence, it is valid to raise the question of how strengths continue to impact the lives of people as they move out of adolescence and into emerging adulthood. Emerging adulthood, defined as the period of life that follows adolescence and continues into the twenties, is a developmental stage marked by role transition and identity consolidation (Arnett, 2000). In this life stage, individuals use the tools gathered in their adolescence to make decisions that will dictate the course of their adult lives and support them as they take on adult responsibilities. The means by which emerging adults attending university use the strengths that they have cultivated throughout their lives to cope with the stress and role change that can occur with university attendance is of particular interest in the present study.

The theoretical basis for strength operationalization varies within this body of strengths literature. Frequently, a framework of "strengths of character" guides study methodology (Park, Peterson, & Seligman, 2004). Within this character model, strengths are conceptualized rather abstractly as traits of personality which participants endorse as reflecting values that are important to them. Research with other populations has taken a "psychosocial" perspective, addressing strengths in specific areas of experience that are identified as being important to the participants (e.g., Franks, Rawana, & Brownlee, 2013). The psychosocial model addresses

concrete and more readily operationalizable domains of life and their associated activities or actions. Though less research has been carried out using the psychosocial model than the character model, the concrete nature of psychosocial strengths greatly enhances their clinical utility and contributes to their potential for use in psychological interventions.

Either by convenience or by choice, experiences of undergraduate university students have been the subject of a large amount of character strength research with emerging adult populations. Following the tradition of past strengths research and positive psychology in general, the role of strengths in undergraduate student well-being has been addressed by some of this research. Identification and use of a strength in some area of one's life has been associated with greater knowledge of one's emotional experiences (Ros-Morente, Mora, Nadal, Blasco-Belled, & Berenguer, 2018), disposition toward experiencing positive emotions (Güsewell & Ruch, 2012), self-esteem, life satisfaction (Douglass & Duffy, 2015), self-efficacy, health-related quality of life (Proctor, Maltby, & Linley, 2011), and vitality (Huta & Hawley, 2010; Wood, Linley, Maltby, Kashdan, & Hurling, 2011). The other side of this coin is a research focus on how strengths relate to undergraduate student maladjustment, and, more specifically, the ways in which strengths help undergraduates cope with mental health challenges common to university students (such as depression and anxiety). This work is particularly salient in current academic climates given the increase in stress and decrease in mental health that is sometimes experienced by undergraduates undergoing a change in roles as they transition to university (Denovan & Macaskill, 2017).

The literature review within this proposal will elaborate upon the character model of strengths, and the ways in which these strengths are categorized and operationalized for measurement. The psychosocial model of strengths will also be explained by incorporating the

“Five Cs” model of positive development. Researchers can assess the development of strengths in youth as they relate to Competence, Confidence, Connection, Character, and Caring (Bowers et al., 2010) using this framework. As these five aspects of positive development are relevant at points in the lifespan beyond childhood and adolescence, the Five Cs model is extended here with an application to emerging adults.

In addition, and within the context of strengths research, literature regarding a number of commonly studied variables is examined. These include factors related to emotional experiences, symptoms of common mental disorders, and well-being. A rationale is given for conceptualizing mental well-being and maladjustment (such as experiences of stress, depression, and anxiety) as separate, but related continua when assessing strengths and their impact on everyday functioning. As most of this literature utilizes a character model of strengths rather than a psychosocial one, a rationale for the inclusion of this latter model is provided. The merits of utilizing a psychosocial model are discussed here, particularly as they relate to the study of strengths with an undergraduate population in the emerging adulthood stage of the lifespan. This naturally leads into an outline of the study itself, including study methods, analyses, and results.

The proposed study attempts to marry the perspectives introduced here by assessing strengths in undergraduate students from the psychosocial and character perspectives in tandem. This is the first study with an undergraduate student sample to include measurements from both of these perspectives simultaneously. Included in the study is a retrospective look at the development of psychosocial strengths over the lifetime as identified by the participants. Measures of well-being, maladjustment, and mood states are used in order to incorporate these factors in a single study of psychosocial strengths. Finally, given the emphasis on mental health and well-being in this study, a comparison is made on these measures between those who are

seeking mental health services and those who are not. The study is also conducted with the intention of providing validation for a new measure of psychosocial strengths in undergraduate students, the Strengths Assessment Inventory – Post Secondary.

Literature Review and the Present Study

Models of Strengths and Positive Development

In general, a psychological strength can be defined in relation to both challenging life circumstances and increases in well-being. Strengths can be thought of as the capacity for resilience in the face of difficulty or trauma, or the ability to use challenges as a basis for personal growth (McQuaide & Ehrenreich, 1997). In either case, strengths can be sourced from personal resources and/or social supports. Research that draws on this general definition has varied in the way that strengths are conceptualized and operationalized. Two popular models of strengths, character and psychosocial, are good examples of this variability.

The first strength model considered is that of character strength, or “a disposition to act, desire and feel that involves the exercise of judgment and leads to recognizable human excellence or instance of human flourishing (Yearley, 1990, p. 604)” (Park et al., 2004) as measured by the Values in Action Inventory (VIA; Park et al., 2004). The theoretical basis for character strengths is grounded in biology, as it is thought that desirable characteristics that manifest through thoughts, feelings, and behaviours have historically functioned to ensure the survival of the species. These strengths serve to help individuals flourish in their lives, though the utilization of strengths of character is not automatic; rather, the presence of a strength is merely a trait-like disposition toward such actions that will support one’s flourishing. They are also purported to be culturally universal and can be observed in individuals at all stages of life. Due to the universal nature of these strengths, people generally possess all of them to some

degree, though there can be significant variation among people as to the rank order and magnitude of each individual strength (Peterson & Seligman, 2004, as cited in Park et al., 2004).

Thus, the character strengths are generally positively correlated with one another overall.

Within this broad conceptualization of character strengths are several categories that encompass the individual strength domains. Such categories and domains can be viewed in Table 1. Each character strength is operationalized on the VIA-120 using 5 items per strength to obtain a hierarchy of character strengths. Some examples of these items are “I value my ability to think critically” (corresponding to Judgment), “I can find something of interest in any situation” (Curiosity), and “I know that I will succeed with the goals I set for myself” (Hope).

Table 1

Categorical Classification of VIA Character Strengths.

Emotional Strengths	Interpersonal Strengths	Strengths of Restraint	Intellectual Strengths	Theological Strengths
Zest	Leadership	Prudence	Love of learning	Spirituality
Hope	Teamwork	Perseverance	Creativity	Gratitude
Humor	Kindness	Self-regulation	Curiosity	Appreciation of beauty and excellence
Love	Forgiveness	Honesty	Judgment	
Social intelligence	Fairness	Perspective		
Bravery	Humility			

As an alternative to the character model, the psychosocial strength model takes a more concrete view of an individual’s areas of strengths. A psychosocial strength is defined as “a set of developed competencies and characteristics that is valued by both the individual and society and is embedded in culture” (Rawana & Brownlee, 2009, p. 256). A large portion of psychosocial strengths research has focused on the development and fostering of strengths in youth. Rawana and Brownlee (2009) note that although strengths have long been applied to psychotherapeutic settings with children and youth, it has been difficult to operationalize some

models of strengths in a meaningful way. To address this issue, psychosocial strengths are used to refer to concrete aspects of life that can be incorporated into client-centered care and the resulting plan for intervention. They can also be used to instill hope in a client seeking support through mental health interventions, as they can be framed in terms of how the client has used their strengths as resources to assist them to the point of their help-seeking.

One theoretical model of strengths that has been used as a basis for psychosocial strength research is the “Five Cs” as they relate to positive youth development (Bowers et al., 2010). The Five Cs are indicative of the circumstances under which strengths are best developed and nurtured throughout the formative years and onward for the rest of the lifespan. The five aspects of this model are, in practice, the circumstances under which one effectively interacts with their environment and uses their strengths to deal with life challenges, contribute meaningfully to the environments of which they are a part, and lead lives that they find personally meaningful. Without the presence of each of the five aspects, it is less likely that a positive trajectory of development will be observed. It is also more likely that an individual will face challenges of mental disorder, problems with the law, and interpersonal difficulties. Indeed, the development of assets such as strengths are predictive of increased well-being, and decreased depression, anxiety, and conduct problems as an adolescent nears the transition to emerging adulthood (Pashak, Hagen, Allen, & Selley, 2014).

The first of these aspects, competence, relates most closely to psychosocial strengths on a conceptual level (Bowers et al., 2010). Competence reflects the degree of positivity with which one views the activities that they engage in on an everyday basis. Like psychosocial strengths, competence is domain-specific, in that an individual can identify particular areas of their life in which they excel (Brazeau, Teatero, Rawana, Brownlee, & Blanchette, 2012). Use of the

strength provides a feeling of comfort, and perhaps even mastery. Competence can pertain to social, cognitive, academic, and vocational domains of life circumstances. More specific strengths can be identified within these domains, such as conflict resolution (social), decision making (cognitive), school performance (academic) and entrepreneurship (vocational).

The second C, confidence, is a more general application of strengths. While competence refers to the strengths that one possesses in specific life areas, confidence reflects an individual's general opinion of themselves; it is one's degree of belief in themselves and in their worth as a human person. In research, this can be measured in terms of positive identity and self-perception (Bowers et al., 2010). Although psychosocial strengths do not directly address confidence within their domains, theory suggests that strengths themselves contribute to a positive sense of identity and aid in personal growth (Rawana & Brownlee, 2009). By cultivating strengths within their lives, people are able to develop a sense of self-worth and purpose. Use of those strengths, meanwhile, contributes to the overcoming of challenges to foster personal growth. Therefore, confidence is developed and expressed through a mechanism of psychosocial strengths.

The third aspect of positive development, connection, refers more specifically to the interaction between the individual and their environment (Bowers et al., 2010). Positive connections can exist between people and the significant others in their lives, allowing them to rely on these relationships as supports. Larger institutions of which the individual is a part also contribute to connection. An important feature of connection is that it is bidirectional by definition. This accounts for the ways in which individuals are influenced by interactions within their social networks, and the ways that those interactions are contributed to and necessarily influenced by them. Connection relates to strengths not only in domains involving interpersonal relationships, but also through the ways that the environment nurtures psychosocial strengths,

and the ability of the individual to take advantage of resources available to them to develop their strengths (Rawana & Brownlee, 2009).

Like confidence, character is another more abstract, underlying aspect of positive development that influences interpersonal relationships and connection more broadly (Bowers et al., 2010). This aspect refers to the moral code and sense of integrity that one internalizes from socialization agents and the norms of their society. As societies rely upon productive members for continuance and prosperity, strengths must necessarily fall within domains that society considers to be productive and valuable (Rawana & Brownlee, 2009). In this way, strengths are a product of their culture; values serve to create a cultural milieu which encourages and reinforces desirable actions, giving rise to domains of functioning at which a person may excel and contribute to their society in a meaningful way. Therefore, any psychosocial strength within a given culture is a sign of character, as it is cultivated within the cultural context and is sanctioned by the society as a whole.

The final aspect, caring, refers most directly and specifically to relationships with significant others (Bowers et al., 2010). Caring is seen in sympathetic responses to others and effectiveness in interpersonal relationships. Caring is another aspect of positive development that relates directly to domains of psychosocial strengths, specifically those that deal directly with close relationships. Strengths may be cultivated in these areas, indicating that a person highly values their relationships and considers themselves to be an effective, compassionate, and loving contributor to them (Rawana & Brownlee, 2009). Caring can also be demonstrated in the environment the individual is a part of, in that caring relationships can be used as resources from which strengths in other domains may be developed. Much like connection, caring in relationships can also be used as a form of social support during times of stressful circumstances.

Although the Five Cs model was conceptualized with youth development in mind, it stands to reason that this model would continue to apply to someone's life throughout their adulthood. Indeed, research by Owens, Baugh, Barrett-Wallis, Hui, and Mcdaniel (2018) suggests that strengths development continues past adolescence and into the adult years. It is worth investigating trajectories of strength development as one continues through stages of adulthood and begins to take on more adult roles, and how strengths manifest as one grows older and encounters different challenges than those experienced in childhood and adolescence. To this end, strengths as they pertain to emerging adults and adulthood as a broader life stage have recently begun to gain more research popularity and attention. Most of this research has recruited samples of emerging adult students from universities (e.g., Douglass & Duffy, 2015; Gfellner, 2016; Stander, Rothmann, & Botha, 2017). A broad goal of the present study is to address a gap in the body of strengths literature and extend the field's understanding of strengths throughout the lifespan in terms of development, current status and role in everyday life, and relationship to outcomes in terms of well-being and maladjustment. Therefore, the present sample consists of emerging adult undergraduate students to explore the role of strengths in the context of their unique developmental stage.

An investigation of psychosocial strengths is a natural extension of the character strength research in this population. Previously, measures such as the Strengths Assessment Inventory for Youth (SAI-Y; Brazeau, Teatero, Rawana, Brownlee, & Blanchette, 2012) have accomplished this in younger populations by inquiring as to the areas of life and domains of functioning that an adolescent considers to be personal strengths for themselves. Past research supporting a link between strengths in widely varying areas of life, lower levels of maladjustment, and increased subjective well-being seem to support this theory; it does not

appear to matter what an individual considers their strongest, or “signature” strength, as long as it is well-endorsed and utilized for their own benefit (see Abdel-Khalek, 2010; Gfeller, 2016; Peter et al., 2011; Stander et al., 2017).

Using the SAI, a signature strength can be identified by finding the domain with the highest mean score on the measure. Domains of strengths are not universally endorsed by all individuals, so the identification of a signature psychosocial strength is particularly useful for the sake of pinpointing the area of their life in which they are strongest. The present study makes use of the identification of signature psychosocial strengths in order to place the findings in the context of the life domains that are most pertinent to the participants. The endorsement of a signature psychosocial strength is not only used to indicate which life domains are the most important to the individual, but also to indicate how much they are utilized or engaged in relative to the other strength domains measured by the SAI. By contrast, character strengths are considered universal in the sense that all individuals possess them to some degree (Park et al., 2004). Therefore, signature character strengths are not identified, as all areas of character strength should be examined in tandem to gain a more complete picture of the individual.

As mentioned, the character and psychosocial strength models vary in the ways that they relate to McQuaide and Ehrenrich’s (1997) definition of strengths. Being that both of these perspectives are grounded in the same theory, they do have a number of similarities. First, both models are largely focused on positive domains of functioning and/or character. Strengths are conceptualized as being valued by the individual and their culture. Also, neither model directly addresses how strength provides a sense of resilience. Resilience is implied as a related construct, and indeed is often studied in tandem with the chosen strength model (as in Goodman, Disabato, Kashdan, & Machell, 2017; Martínez-Martí & Ruch, 2017; Munoz et al., 2018).

However, both models consider strengths to be entities in and of themselves that can be developed independently of challenging life circumstances. In other words, resilience is not necessary for the development of strengths, but strengths can be helpful in contributing to a sense of resilience within the individual.

Character and psychosocial strengths are also similar in that they address both the personal resources and social support aspects of McQuaide and Ehrenrich's (1997) definition. However, they differ in the extent to which close relationships are considered to be bidirectional and mutually beneficial to those involved. Character strengths, for example, do incorporate interpersonal aspects of the individual's life. However, these aspects are largely focused on the ways in which the individual comes to the relationship with their own personal capacities. For example, the strengths "kindness" and "forgiveness" are both interpersonal strengths within this model. These strengths are measured with the perspective that the individual acts and reacts to those with whom they are in a relationship of some nature, but do not necessarily consider that the relationship itself is a source of strength. On the other hand, psychosocial strengths take into account the nature of these relationships and specifically focus on close ones as a source of strength and social support. Strengths with family and strengths with friends, for example, are aspects of the individual's functioning that are explicitly measured within this model, and these groups of people in an individual's life can be specifically noted as sources of social support.

A related difference between character and psychosocial strengths is the concreteness of the constructs being measured by the respective instruments. Character strengths are quite abstract, in that they are inner, personal qualities that are believed to be reflected in the observable actions of the individual. The psychosocial model, on the other hand, focuses on concrete activities in and domains of day-to-day life. In defining their strengths using a self-

report Strengths Assessment Inventory (SAI; Brazeau et al., 2012) tailored to their age group, a respondent is able to identify the domains of their functioning that they consider to be the most important in their lives, as well as specific skills that they have developed.

To this end, another difference between the two perspectives lies in the degree to which the measured strength domains are considered to be universal aspects of life. As previously mentioned, the VIA considers all the strengths of character to be universally present, and that individual differences exist in the hierarchy of strengths relative to one another. Conversely, the SAI is structured as to be completely individualized to the respondent. This is due to the theory underlying psychosocial strengths, which states that the domain of one's personal strengths are not important in their content as much as the presence of their endorsement by an individual (Rawana & Brownlee, 2009). Any domain may be a strength, so long as it is identified as such by the respondent. A hierarchy of psychosocial strengths can still be created, as with character strengths, but it is possible that not every domain measured by the SAI would be present in an individual's hierarchy.

A final difference between the character and psychosocial strengths models lies not in their conceptualization or operationalization, but in how they have been used in research thus far. There are obvious gaps in the research in terms of the age populations from which participant samples are drawn. As noted above, psychosocial strength research has largely been focused on samples of children and youth (see Franks et al., 2013; Harris, Brazeau, Clarkson, Brownlee, & Rawana, 2012; Harris, Brazeau, Rawana, Brownlee, & Mazmanian, 2016). There is little identified research that explicitly takes this perspective while drawing on populations of adults. The character strength model, on the other hand, has been applied to a variety of developmental

stages in research. Notably, character strength research has been conducted with adults of varying ages. A selection of this literature is reviewed later in this paper.

It is of note that, while some version of strengths have been studied across the lifespan, neither character nor psychosocial strength research has had an explicit focus on the importance of strengths development and use in the lives of emerging adults. Much of the character strength literature has sampled university student populations, though this is generally due to a matter of convenience and not a choice of developmental stage. Psychosocial strength research has not yet tapped into this population by either means. There is, therefore, a considerable gap in strengths literature regarding the intentional use of emerging adult samples. It is our intention for the present study to address this gap by studying both character and psychosocial strengths in the context of the emerging adult undergraduate experience. Using both models in tandem will explicitly apply character strength knowledge that has already been gained about undergraduate students to the developmental stage of emerging adulthood, while also extending the psychosocial strength perspective to a later developmental stage than has previously been done.

In terms of sampling, emerging adulthood is usually operationalized as including individuals aged 18 to 25 years (Arnett, 2000). However, this is not always the case, as researchers have also chosen to include individuals up to the age of 29 in their studies of emerging adults (Arnett, Ramos, & Jensen, 2001). Theoretically, the transition from emerging adulthood to adulthood is not marked by reaching a discrete age, per se, but rather by the making of decisions and taking on of responsibilities that have traditionally been associated with adulthood. Arnett (2007) notes that the rise in postsecondary education enrolment has delayed these decisions and responsibilities, which is part of what necessitated the creation of the life stage in the first place. It can be argued, therefore, that even those between the ages of 25 and 29

who are still completing postsecondary education have not fully committed to roles in a career or field of study in the same way that an adult in the work force might have by the same age. At least in this regard, these individuals can still be considered emerging adults, and therefore their inclusion in research that specifically samples from a university population is warranted. For these reasons, it also makes sense to consider them to be emerging adults in terms of the developmental trajectory of their strengths.

Taking into account the considerable literature on strengths and related interventions with children and adolescents, it is worth investigating the ways in which undergraduate emerging adults perceive their strengths to have developed over time (Owens et al., 2018). Specifically, a retrospective look at strengths can help to identify the trajectory of their development, as well as the internal and external factors that contributed to this trajectory. Owens et al. (2018) utilized a qualitative interview method to inquire as to participants' experiences of the development of their strengths over time. Responses indicated that well-being over the lifespan was associated with the maintenance of a signature strength in a certain life domain, and the feeling that one was still increasing in their competency in that domain even in later stages of life. Theoretically, it also provides support for the Five Cs model of positive development (Bowers et al., 2010). The internal factors found in Owens and colleagues' study were values, desires, positive self-view, internal drive, and individual weaknesses. These factors align with the positive development aspects Caring, Competence, Confidence, and Character. External factors in this study related to significant others and supportive environments in the participants' lives, which reflect the model's Connection aspect. Inquiring as to the sources of strengths and how they were fostered over time, therefore, can give strengths researchers further insight into the nature of strength development from the perspective of the participant themselves. In this study, participants are

given the opportunity to provide this lifespan context from the perspective of their current developmental stage.

Past Strengths Literature with the Population of Interest

As previously mentioned, the positive psychology literature concerning strengths in undergraduates and emerging adults has largely taken on the character strengths perspective and measurement methods. A large portion of this literature has also focused on how character strengths relate to various dimensions of well-being and emotional experience. For example, Conley, Kirsch, Dickson, and Bryant (2014) found that life satisfaction declined along with the decline in use of character strengths that occurred during the transition to university. Güsewell and Ruch (2012) found that the emotional category of character strengths (including the strengths hope, zest, humor, love, and social intelligence) were the most strongly related to positive emotional experiences in undergraduates. Research has also shown that the strengths of hope and zest, as well as strengths use in general, positively relate to global subjective well-being, self-esteem, self-efficacy, and positive emotional experiences in studies that utilize measures of well-being and emotions (Proctor et al., 2011; Wood et al., 2011).

In other research, the relationships between positive emotions and different dimensions of well-being are somewhat more complex. The underlying nature of these relationships is occasionally best explained by mediation and/or moderation models. An example of this is the positive association between strengths use and life satisfaction, which is mediated by self-esteem; in turn, the self-esteem/life satisfaction relationship is moderated by positive emotions, such that the relationship is stronger for those with low to moderate levels of positive emotions (Douglass & Duffy, 2015). Conversely, there is a consistent positive association between negative emotional experiences and mood states, and stress and symptoms of mental disorders

common to undergraduates. Those who experience these negative emotional states more frequently, and positive emotional states less frequently, are less likely experience increases in life satisfaction and self-esteem by using their strengths (Douglass & Duffy, 2015). This is especially evident when a domain of life with potential be a strength for the individual is not being utilized, such as when one's ethnic identity is particularly central to their personal identity, but is perceived negatively by the individual (Schmidt, Piontkowski, Raque-Bogdan, & Ziemer, 2014).

The majority of strengths research has not discriminated as to the domains of life where character strengths are utilized. Other studies, however, have investigated specific domains of strengths and how their use positively contributes to the everyday lives of undergraduates in a manner consistent with the psychosocial strengths approach. For example, Stander, Rothmann, and Botha (2017) found that student athletes who utilized their strengths within and outside of a team setting were more likely to have elevated levels of well-being and feelings of connection to the team to which they belonged. In youth and undergraduate students alike, cultural identity as a strength is associated with well-being in a variety of cultural contexts (Gfellner, 2016; Schmidt et al., 2014). Similarly, strong religious faith in undergraduates is positively correlated with increased physical and mental health (Peter et al., 2011), as well as well-being and overall quality of life (Abdel-Khalek, 2010). It is possible, therefore, that the particular domain of life in which a person feels they are strong is irrelevant, so long as such a strength is present. Any strength might enable one to increase their well-being and better cope with life stressors (Goodman et al., 2017).

To this end, results from some studies of character strengths have demonstrated their contribution to resilience, or positive adaptation to challenges and negative life events that

buffers against diminished well-being (Goodman et al., 2017; Martínez-Martí & Ruch, 2017). Strengths use is strongly associated with resilience, even when other factors such as positive affect, optimism, social support, self-esteem, and satisfaction with life are controlled for. The concept that strengths and resilience are positively related is especially important when considering the undergraduate experience, which is often rife with stressful pressures and transitions (Gfellner & Cordoba, 2017). Undergraduate students have ever-increasing rates of mental health issues and declining well-being, as evidenced by the large body of research investigating the university student experience. In general, stress in a university setting is associated with lower levels of well-being and positive affect, and higher levels of negative affect (Denovan & Macaskill, 2017).

However, the presence and utilization of strengths can help to mitigate the effect of stress in a student's life and help them better cope with challenges (Duan, 2016). Indeed, there is a consistent negative correlation between stress and strengths use in university student samples (e.g., Gfellner & Cordoba, 2017). Stress can also act as an explanatory variable in the relationship between strengths use and mental health problems such as depression and anxiety levels, such that low strength usage is associated with high levels of depression and anxiety in students with a high level of perceived stress (Duan, 2016). It is logical to imagine that interventions specifically employing strengths as a coping mechanism may be helpful in alleviating undergraduate stress and mental disorder symptoms. These interventions could possibly enhance our understanding of strengths as they relate to both well-being and maladjustment to respectively elevate and reduce them in this populations. In the present study, measures of well-being, and maladjustment (including perceived levels of stress) are used to

better understand these relationships. The empirical and theoretical results will contribute to the knowledge upon which future strength-based interventions might be based.

Other Theoretical Considerations for Research

Although some areas of research have focused on strengths as they relate to well-being, and others as they relate to mental health difficulties, there is a theoretical basis for the simultaneous observation of both in the context of strengths. In a study including measurement of character strengths, Huta and Hawley (2010) found that strengths and vulnerabilities showed independent correlations to mental well-being and maladjustment in undergraduate students. Character strengths had a stronger and more consistent relationship to well-being than to mental illness in their study. Certain character strengths (namely appreciation of beauty and excellence, hope, and spirituality) also seemed to predict lowered symptoms of depression over time. This finding demonstrates that the utilization of certain strengths may serve as a buffer against factors related to maladjustment, while other strengths are more useful in their potential to increase well-being.

In a similar way, a study of emerging adults by Peter, Roberts, and Dengate (2011) determined that mental health and mental illness were not merely two ends of a single continuum, but rather were independent constructs that have the potential to co-exist within a single individual at any given time. The association between mental health and mental illness was negative, as was expected, but the magnitude of the correlation was only moderate and not as strong as would be found if the two were merely opposites and not independent factors (Keyes, 2002). Adapting such a theoretical model in the study of strengths is warranted, as it will account for potential mental health difficulties that can be experienced by emerging adults in spite of otherwise generally good mental health and flourishing strengths. Additionally, Peter,

Roberts, and Dengate (2011) report that emerging adult university students are less likely than other demographic groups to seek help for mental health issues, in spite of their increased risk for such issues. Considering such behaviour in tandem with well-being and maladjustment operationalized as separate constructs may help to shed light on the factors that could potentially impact such behaviour. The present study, therefore, makes use of both well-being and maladjustment measures in order to account for any unique variance they may hold in their relationships to strengths.

Additionally, a comprehensive model of well-being should be used in the present study given the connections between different aspects of well-being observed in previous studies of character and psychosocial strengths, respectively. To accomplish this, the present study includes the use of the Well-Being Scale (WeBS; Lui & Fernando, 2018). The WeBS consists of five subscales which relate to different aspects of psychological well-being: financial, physical, social, hedonic (general experiences of happiness), and eudaimonic (the feeling that one's life has meaning and purpose).

The WeBS was chosen above other scales for several reasons. First, it introduces ease of administration in research where well-being is central to the questions of interest. The inclusion of the five well-being domains in a single scale eliminates the need to use several individual scales that could potentially overlap in some areas of questioning and introduce the possibility of confounding of variable effects (Lui & Fernando, 2018). Secondly, the same authors note that the WeBS has been noted to be appropriate for use with a variety of ethnocultural groups. Central to this is the inclusion of different aspects of well-being, such as social well-being, that are not as central to a Western conceptualization of the construct. This consideration is especially important in the present study given the multicultural nature of the university

population and the differences in well-being within potentially racialized or marginalized populations therein (Schmidt et al., 2014). Third, financial instability has been reported to be a great source of the stress that is characteristic of the change in roles that accompanies the transition to university and emerging adulthood (Arnett, 2000). Therefore, measuring this specific aspect of well-being will likely give a more nuanced picture of the ways in this particular aspect of life relates to other well-being domains and the other variables of interest. Lastly, the unique domains of well-being measured by the WeBS have theoretical ties to various domains of psychosocial strengths (Lui & Fernando, 2018). Financial well-being is similar to items within the psychosocial strength “coping while attending college/university”, physical well-being is likewise similar to the strength “healthy lifestyle”, and social well-being items correspond generally to the domains involving interpersonal relationships (family, friends, etc.).

Establishing Psychometric Support for the SAI-PS

As mentioned, closing the identified research gap in the strengths literature involves studying the known variables that are commonly associated with strengths. In order to do this, a new measure of psychosocial strengths must be utilized. The Strengths Assessment Inventory – Post Secondary (SAI-PS) was previously developed to assess domains of life that are commonly central to the undergraduate experience. In contrast to the SAY-Y, the SAI-PS contains strength domains and item content that are more applicable to a maturing individual in their emerging adult or adult years. Although it has been applied clinically, the SAI-PS has not yet been used to research strengths in emerging adult undergraduates. By utilizing it here alongside the already-established VIA and other constructs related to strengths, the SAI-PS can gain construct validation and become established as an empirically-tested research measure.

One of the ways in which the VIA will be used to validate the SAI-PS is through convergent validity between various character strength categories and psychosocial strength domains. Though the strengths captured by the VIA are said to be theoretically distinct from “related individual differences such as talents and abilities” (Park et al., 2004, p. 604), some of the competencies described by the psychosocial strengths in the SAI are similar to the categorical structure of the VIA. An example of this is the psychosocial strength “goals and dreams”. The item “I know how to set goals that are reachable” comes from this domain on the SAI. The item “I know that I will succeed with the goals I set for myself” from the VIA strength “hope” (an emotional strength) is quite similar to this. Examination of the items included in each measure reveal that the SAI items loosely correspond to VIA items. Table 2 denotes the closest matches between the SAI domains and VIA categories based on item content.

Table 2

VIA Categories and Corresponding SAI Strength Domains.

VIA Categories	SAI Strength Domains
Emotional Strengths	Goals and dreams, Self-knowledge, Free time
Interpersonal Strengths	Engaging with others, Being involved, Friends, Family, Relationships, Parenting
Strengths of Restraint	Coping while attending college/university, Time management/planning, Job, Keeping a healthy lifestyle
Intellectual Strengths	School
Theological Strengths	Faith and culture

At face value, there does not seem to be complete correspondence between the two measures. For example, the items “When I am bored with studying, I find a way to continue anyway” and “I arrive on time for class” from the psychosocial strength “school” seem to align with items measuring character strengths of restraint. However, it stands to reason that school might correspond more closely with intellectual strengths given that character strengths such as

“love of learning” and “curiosity” would be reflected in school items such as “I participate constructively in class discussions” and “I use my listening skills in class”. This ambiguity in character and psychosocial strength correspondence is another advantage of including both the SAI and the VIA in a single study, as these connections can be better elucidated.

There is also the potential for this study to establish convergent and discriminant validity for the SAI-PS using other measured constructs. Past research has found that psychosocial strengths in youth are generally negatively correlated with measures of maladjustment, such as depression, anxiety, and conduct problems (see Brazeau et al., 2012). Psychosocial strengths in this population are also generally positively correlated with measures of well-being. By retesting these hypotheses in an emerging adult undergraduate sample using the SAI-PS, further evidence can be found for these types of validity.

The Present Study

The literature reviewed above and their implications for future research methodology have been used to develop the proposed study. Its primary purpose is to investigate the following research questions:

- How might the relationships between domains of character and psychosocial strengths of emerging adult undergraduates be best described?
- How can these relationships be placed in the context of participant well-being, emotional experiences, maladjustment, stress, and help-seeking behaviour?
- How do individuals understand the development of their signature psychosocial strengths over their lifetime?
- Is the SAI-PS a valid tool for conducting psychosocial strength research with emerging adult undergraduates?

Several hypotheses and exploratory research plans were been developed from these general questions.

Replication hypotheses.

The following correlational results are expected based on findings from past literature on character strengths and well-being with emerging adult university students. It was hypothesized that:

1. Character strengths (measured by the VIA) will be positively associated with one another overall.
2. Emotional character strengths will be positively associated with positive emotional experience; to a lesser degree, interpersonal, intellectual, and theological strengths will also be associated with positive emotional experiences (as found by Güsewell & Ruch, 2012).
3. Lower global well-being will be associated with higher levels of maladjustment (defined as higher levels of depression and anxiety symptoms, and conduct problems, as found by Pashak et al., 2014).

Hypotheses related to psychosocial strengths in emerging adult undergraduates.

Hypotheses were also made in order to extend our understanding of psychosocial strengths with this population. It was hypothesized that:

4. Higher levels of endorsement of one's signature strength will be associated with higher levels of global subjective well-being than lower levels of endorsement.
5. Higher levels of endorsement of one's signature strength will be associated with more positive emotions than negative, as opposed to lower levels of endorsement which will be associated with more negative emotions than positive.

6. Higher levels of endorsement of one's signature strength will be associated with lower levels of mental health problems, such as depression, anxiety, and conduct problems, than lower levels of endorsement.
7. In a manner consistent with a mediated relationship, the associations between strengths endorsement and depression and anxiety will be bridged by stress level, such that low strength endorsement will be associated with higher levels of depression and anxiety with increasing levels of stress.
8. The strength domain "Coping while attending college/university" will be associated with higher levels of global subjective well-being, as well as higher levels of financial well-being.

Relating character strengths to well-being and psychosocial strength magnitude.

Three hypotheses were made relating categories of character strengths and magnitude of signature psychosocial strengths with well-being. It was hypothesized that:

9. The character strengths of hope, zest, gratitude, love, and curiosity will be most strongly associated with well-being (as found by Park et al., 2004).
10. In keeping with hypotheses 2 and 6, the emotional character strengths will be higher for those with a stronger endorsement of their signature psychosocial strength.
11. In keeping with hypotheses 3 and 4, the character strengths of hope, zest, gratitude, love, and curiosity will be higher for those with a stronger endorsement of their signature psychosocial strength.

Convergent validity testing for the SAI-PS using the VIA-120.

Being that another purpose of this study is to provide psychometric support for the SAI-PS, a number of hypotheses have also been developed regarding the relationships between this measure and the VIA:

12. The psychosocial strengths goals and dreams, self-knowledge, and free time will have the strongest correlation with emotional character strengths over other categories.
13. The psychosocial strengths engaging with others, being involved, friends, family, relationship/significant other, and parenting will have the strongest correlation with interpersonal character strengths over other categories.
14. The psychosocial strengths coping while attending college/university, time management/planning, job, and keeping a healthy lifestyle will have the strongest correlation with character strengths of restraint over other categories.
15. The psychosocial strength school will have the strongest correlation with intellectual character strengths over other categories.
16. The psychosocial strength faith and culture will have the strongest correlation with theological character strengths over other categories.

Exploratory and qualitative analyses.

Being that we are also inquiring as to whether participants are currently seeking mental health services, we will also be investigating the possibility that this help-seeking behaviour will help to explain the relationships between strengths and the proposed health variables. It is possible that this explanation might come in the form of a relationship consistent with moderation, such that those who endorse higher levels of strengths identification have higher rates of help-seeking behaviour, and differing levels of well-being and stress, than those with lower levels of strengths identification.

Finally, our investigation into participants' retrospective accounts of their strengths development operates at an exploratory level. As the study from which this methodology is drawn (i.e., Owens et al., 2018) utilized an older adult sample, no specific hypotheses are made here concerning the trajectory of strength development as recalled by emerging adults. It is possible that the lifespan proximity of emerging adults to their childhood and adolescence in the present study, as opposed to the older adults in Owens et al.'s (2018) study, will yield different patterns and trajectories of strength development than those that were observed by Owens and colleagues. Though the initial study was interview-based and produced qualitative data, trajectories of strengths development can be assessed through a quantitative adaptation of the study using multiple choice questions. By asking participants to compare the magnitude of their competency within their signature strength domain presently with how the strength presented in their childhood and adolescence, respectively, seven different strength trajectories can be identified:

- Similar throughout childhood, adolescence, and emerging adulthood
- Increasing in strength throughout the lifespan
- Decreasing in strength throughout the lifespan
- Similar in childhood and adolescence, stronger in emerging adulthood
- Similar in childhood and adolescence, weaker in emerging adulthood
- Stronger in childhood and emerging adulthood than adolescence
- Stronger in adolescence than childhood and emerging adulthood

The method of data collection based on this study is further detailed below and in Appendix D.

Finally, participants were given the opportunity to provide open-ended, qualitative responses to better explain the lifespan development of their strengths using their own words.

No specific predictions were made regarding this data. The method of collection and other methodological considerations are detailed below.

Methods

Participants

Participants were recruited from the undergraduate population at Lakehead University following institutional Research Ethics Board approval. Between September and December 2019, undergraduates registered in eligible Psychology courses were able to sign up for the present study in exchange for course credit through the SONA system. All data were collected online using SurveyMonkey. Using Stata's power analysis program, the largest suggested sample size from the planned analyses was $N=73$ at $\alpha=.05$ and $\beta=1-.8$. In total, $N=280$ students participated in the study. Of these, 20 participants were excluded from analysis because they had failed to complete key measures. An additional 2 participants were excluded because of response set (i.e., all strength domains were endorsed to their maximum possible value), and 4 were excluded because their age fell outside of the emerging adulthood range of 18 to 29 years. Thus, responses from $n=254$ individuals were used for analysis.

A complete summary of participant demographics can be viewed in Tables 1 and 2. The majority of the participants were female (83.1%), Caucasian (83.8%), heterosexual (88.1%), and working part-time (57.7%). 13.1% of the sample indicated that they were receiving mental health services from a psychiatrist, psychologist, or psychotherapist.

Table 1

Summary of Demographic Variables: Gender, Ethnicity, Sexuality, Housing, and Use of Mental Health Services

Demographic information	Frequency	%
Gender		
Female	213	83.9
Male	40	15.7
Non-binary	1	0.4
Ethnicity		
Caucasian/White	212	83.5
Aboriginal (First Nations, Metis, Inuit)	13	5.1
Black (African, African-American, African-Canadian, Caribbean)	9	3.5
South Asian (Indian, Pakistani, Sri Lankan, Bangladeshi)	7	2.8
Other ethnicity	5	2.0
Latin American (Mexican, Indigenous Central/South American)	3	1.2
East Asian (Chinese, Japanese, Korean, Polynesian)	2	0.8
Southeast Asian (Burmese, Cambodian, Filipino, Laotian, Malaysian, Thai, Vietnamese)	2	0.8
West Asian (Arabian, Armenian, Iranian, Israeli, Lebanese, Palestinian, Syrian, Turkish)	1	0.4
Sexuality		
Heterosexual (straight)	225	88.6
Bisexual	18	7.1
Pansexual	6	2.7
Homosexual (gay or lesbian)	18	2.0
Housing arrangement		
Residing in parents' home	126	49.6
Residing in on-campus housing	57	22.4
Residing in own home/apartment	38	15.0
Residing in off-campus housing	33	13.0
Seeking services from a mental health professional		
No	221	87.0
Yes	33	13.0

Table 2

Summary of Education- and Work-Related Variables: Year in University, Employment Status, and Funding Source

Demographic information	Frequency	%
Year in University		
1	101	47.9
2	51	24.2
3	38	18.0
4	18	8.5
5 or above	3	1.4
Employment Status		
Working part-time	147	57.9
Unemployed and not looking for work	58	22.8
Unemployed and looking for work	30	11.8
Working full-time	11	4.6
Other (such as casual employment)	7	2.9
Caring for children/other family members	1	0.4
Source of Funding for University		
Funding self/assistance from family	209	82.3
OSAP	122	48.0
Educational authority	8	3.1
Secondary career/skills development	6	2.4

Procedure

Prospective participants followed a link from the Lakehead SONA site to SurveyMonkey. The advertisement for and description of the study that was displayed in the SONA system can be viewed in Appendix K. They were provided a transparent, cursory overview of the study's contents, which can be viewed in the Letter of Information and Consent Form (Appendix L). Informed consent was indicated by checking a box stating that they read the provided form, after which the survey began. Following the survey, participants were debriefed with slightly more detailed information about the study's objectives and given the researchers' contact information should any questions have arisen. The debriefing form can be viewed in Appendix M. While it was not anticipated that the survey's contents would cause a significant amount of distress,

resources including contact information for Student Health and Wellness were included in the debriefing form.

Measures

Demographics.

As part of completing the Strengths Assessment Inventory – Post-Secondary, participants answered a series of questions as to their age, gender, year and program in university, source of funding for their education, and their living situation. Additionally, participants provided their employment status, ethnicity, sexual orientation. Participants were asked if they were currently seeking mental health services. See Appendix A for complete demographics questionnaire.

Values in Action Inventory.

As detailed in the literature review, the 120-item version of the Values in Action Inventory of Strengths (VIA-120; Peterson & Seligman, 2004; Appendix B) was used to measure character strengths. This scale has previously displayed acceptable amounts of validity for use in research settings. Total scores for each of the 24 character strengths were obtained by summing the relevant items. Categorical scores for each of five character strength areas were then created from the mean level of the relevant character strength scales. Average internal consistency of the five character strength categories was satisfactory at $\alpha=.79$. The VIA-120 was included in the present study with the intention that it will provide a basis of construct validity for the SAI-PS. The literature review indicates that this study will mark the first instance of simultaneous measurement of character and psychosocial strengths for research purposes.

Strengths Assessment Inventory – Post-Secondary.

The Strengths Assessment Inventory – Post-Secondary (SAI-PS; Appendix C) was used to measure domains of psychosocial strengths. 142 items are split into 15 domains such as

“Family”, “Self-knowledge”, and “Your faith and culture”. For each item, the respondent is able to indicate how well the statement describes them on a 3-point scale labelled “Not at all” (coded as 0), “Sometimes” (1), or “Almost always” (2), as well as an option to select that the item does not apply to them (also coded as 0). Additionally, the respondent is given space following the items from each domain to comment on whatever they feel is important within that area.

Individual’s signature strengths are calculated based on the highest mean score across all domains. This allows for each respondent may have more than one strength at their personal maximum level, and therefore more than one signature strength. In the present sample, signature strength magnitude ranged from 1.43 to 2.00, $M=1.94$. Reliability for individual psychosocial strength scales ranged from $\alpha=.70$ to $\alpha=.99$, which is considered acceptable.

The SAI-PS is based on the original SAI-Y, but with changes in the domains of interest that better reflect the different stage of life of the respondent. Domains of “Strengths in coping while attending college or university”, “Time management/planning”, “Engaging with others”, and “Parenting” have been added to the domains included in the original SAI-Y (Brazeau et al., 2012). The original domains “Keeping clean and healthy” and “Dating” (Brazeau et al., 2012) have been retitled “Healthy lifestyle” and “Relationships/significant others”. Although the SAI-Y has been well-validated for research and clinical use, the Post-Secondary version has only recently been developed and has yet to achieve the same level of psychometric support. Thus, in addition to investigating the relationships between the proposed variables of interest, this study will also serve as a test of psychometric validation for a post-secondary application of the SAI.

Psychosocial strengths interview questions.

Following the research methodology of Owens et al. (2018), participants were asked a series of open-ended questions regarding the development of the psychosocial strengths that they

endorsed (see Appendix D). When completing the survey, participants were first presented with the questions measuring a specific domain from the SAI-PS. If the participant scored higher than 0 in that domain, they were then presented with these interview questions and asked to answer them in reference to the strength area that had just been evaluated. After completing the interview questions for that specific strength domain, participants would then be taken to the questions related to the next SAI-PS strength, and the process was repeated for each domain.

These interview questions specifically pertained to the development of the individuals' strength in that particular domain. First, they identified how their strength was acquired (by being taught, observation of others, possessing a natural talent or affinity, etc.). They were then asked to identify changes in the presentation of that strength over their lifespan by considering how it was utilized in their childhood, adolescence, and presently in emerging adulthood. These questions were selected from a larger interview protocol from Owens and colleagues' original 2018 study based on their relevance to the present research question, which is primarily concerned with how strengths have been formed, developed, and changed over the course of life. Participants provided an open-ended response to the question, "When is the first time you can remember using your strength?" (e.g., "When is the first time you can remember using your strengths at school?" for the school domain). To minimize the range of responses and for ease of coding, potential responses to each of the remaining selected questions were organized into a multiple-choice format.

Responses to the questions regarding the points in life at which their strengths were at their strongest were recoded into a "trajectory" variable, the values of which reflect the seven potential trajectories detailed in the literature review above. Trajectories were only calculated for those domains which were endorsed as signature strengths. These trajectories were based on

responses to the questions, “Is this strength during your adolescence similar or different to when you were a child?” and “Is this strength during your adulthood similar or different to when you were an adolescent?”. Depending on whether the respondent indicated that their strengths were similar at both time points, or stronger at one timepoint than another, the trajectory variable highlights the point in time at which the strength is/was at its highest magnitude relative to the other time points.

Well-Being Scale.

The Well-Being Scale (WeBS; Lui & Fernando, 2018; Appendix E) was used to measure subjective well-being. 29 items are split into 5 subscales, each assessing a different domain of well-being: financial, physical, social, eudaimonic, and hedonic. Respondents indicated how well they feel the statement in each item describes them by rating it on a 6-point scale ranging from “Strongly disagree” to “Strongly agree” with no option for a neutral mid-point. Subscale scores were obtained by averaging the relevant scale items. A global well-being score was also calculated by averaging all responses. Given that the scale was initially validated using an undergraduate college sample, it appeared appropriate to utilize in the present study. Descriptive statistics and reliability information for these scales can be found in Table 4 (see Results).

As detailed above, the five domains of well-being assessed by the WeBS are relevant constructs to include in the context of the present study. Though the WeBS is recently-developed scale that has not been used in a significant amount of research, its convergent validity with other measures of well-being and other mental health measures is sufficiently established in the initial development study (Lui & Fernando, 2018). The Satisfaction With Life Scale (Diener et al, 1999, as cited in Lui & Fernando, 2018), which is often utilized in studies of strengths and

well-being, was highly correlated with all five subscales of the WeBS; similarly, global subjective well-being was negatively correlated with measures of depression and anxiety.

Generalized Anxiety Disorder and Personal Health Questionnaire scales.

To assess the presence of specific mental health difficulties, we utilized the 7-item Generalized Anxiety Disorder scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006; Appendix F) and the 9-item Personal Health Questionnaire (PHQ-9; Kroenke & Spitzer, 2002; Appendix G). The GAD-7 asks respondents to consider the frequency of their experiences of GAD symptoms in the previous two weeks by rating them on a 4-point scale with 0 representing “Not at all”, and 3 representing “Nearly every day”. A total score was calculated by summing all items, with a score of 10 or more indicating a higher likelihood for a clinical diagnosis of GAD. The PHQ-9 measure is similarly constructed in terms of item instructions and scaling, and total scores indicating a likely level of depression. Both scales have demonstrated acceptable levels of validity and reliability for research use (Kroenke, Spitzer, & Williams, 2001; Spitzer et al., 2006). In the present study, the thresholds for both GAD and depression were met in 40.9% of individuals.

Positive and Negative Affect Schedule.

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988; Appendix H) were used as measures of mood states. For each scale, a series of positive and negative moods are listed, and respondents are given the opportunity to rate how often they have experienced each within a particular time frame on a 5-point scale from “Very slightly or not at all” to “Extremely”. In this study, participants were asked to consider mood states from the past year to align with the 6-month time frame that is the subject of the SAI-PS questions. Validity testing conducted during the development of the measure revealed that each mood state has high

convergent and discriminant validity when compared to other emotions on the same and the opposite scale, respectively (Watson et al., 1988). This scale property is consistent regardless of the time frame the respondent is asked to consider.

Perceived Stress Scale.

The 14-item scale Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983; Appendix I) inquires as to stressful feelings and events that have occurred in the participant's life over the past month. Responses are given on a 5-point frequency scale from 0 ("never") to 4 ("very often"). Scale scores are obtained by summing all items. As half of the items are worded positively, they are reversed-scored when data is tabulated. The PSS has been utilized with several diverse samples, including college students, and correlates well with other measures of stress and stressful life events (Cohen et al., 1983). During development the measure demonstrated sufficient reliability ($\alpha=.84$ and $\alpha=.85$ in two college samples) and validity for use in research. Though the timeframe of the PSS (one month) differs from that of the SAI-PS (one year), the transient nature of stress legitimizes the consideration of such a timeframe in the current context.

Early College Conduct Problems Index.

Conduct problems were also assessed to provide further validation for the SAI-PS. To assess these externalizing behavioural problems, participants completed the College Early Conduct Problems Index (CECPI; Falls et al., 2011; Appendix J). This scale inquires as to the presence of 16 behaviours associated with the DSM criteria for conduct disorder. Respondents are required to endorse behaviours that they had carried out before a certain determined age (18 or 13 years, depending on the item) and indicate the ages at which they first committed said behaviours. A median age for each behaviour was determined. The total number of behaviours

occurring before the median split was then calculated to represent “early conduct problems.” In its development, the CECPI obtained moderate internal consistency of $\alpha=.77$ and has been determined to be valid for use with college students (Falls et al., 2011).

Quantitative Analysis and Results

Respondents who had completed less than ninety percent of the SAI-PS and/or VIA-120 were removed from the final dataset. This resulted in a final sample of $n=254$. Following this, several Pearson correlation analyses were then carried out to address the basic hypotheses numbered above. From these results, further regression models were utilized to gain a more nuanced understanding of the relationships among the variables of interest. The analysis process and results are expanded upon here. Note that for each analysis, pairwise deletion was used to address any missing data and maximize the number of data points for each variable. All analyses were conducted using SPSS 25.0.

SAI-PS Signature Strengths and Trajectories

In the present study, a scale score for each psychosocial strength was calculated from the mean of the relevant items. The individual’s maximum level of these scale scores were then used to identify the magnitude of the highest-endorsed psychosocial strength (herein referred to as signature strength) for each individual. For many participants, more than one strength area reached this personal maximum level; the number of signature strengths ranged from 1 to 11. As detailed above, the open-ended questions from the Owens et al. (2018) interview protocol were used to calculate trajectories of development for the domains identified as signature strength areas from each individual’s maximum endorsement value. The frequency of signature strengths occurring in each area and their trajectories of development are detailed in Table 3.

Table 3

Signature Psychosocial Strengths: Frequency of Endorsement and Trajectories of Development

Psychosocial strength domain	Frequency of endorsement	Trajectories of development (%)						
		1	2	3	4	5	6	7
Family	48	40.5	21.4	-	-	23.8	4.8	9.5
School	15	33.3	46.7	-	-	6.7	-	-
Free time	1	100	-	-	-	-	-	-
Friends	67	31.3	38.8	1.5	-	4.5	3	9
Self-knowledge	14	42.9	35.7	-	-	7.1	7.1	-
Healthy lifestyle	29	55.2	24.1	-	-	6.9	-	3.4
Being involved	25	36	32	4	-	4	8	4
Faith and culture	7	57.1	28.6	14.3	-	-	-	-
Goals and dreams	139	29.5	40.3	.7	.7	10.8	2.9	5.8
On the job	88	27.6	51.7	-	1.1	6.9	2.3	-
Significant other	80	13.8	50	1.3	-	17.5	1.3	8.8
Coping while attending university	20	26.3	47.4	-	-	5.3	-	15.8
Time management	77	35.1	33.8	-	-	13	5.2	2.6
Engaging with others	42	35.7	33.3	-	-	4.8	7.1	7.1
Parenting	1	-	-	-	-	-	-	100

Note: 1: similar throughout lifespan; 2: increasing throughout lifespan; 3: decreasing throughout lifespan; 4: strongest in childhood and adolescence; 5: strongest in emerging adulthood; 6: strongest in childhood and emerging adulthood; 7: strongest in adolescence

Replication Hypotheses

The results of the correlations between VIA character strengths and other variables of interest can be viewed in Table 4.

Table 4

Intercorrelations between Categories of Character Strength, Magnitude of Signature Psychosocial Strength, Strengths with Coping While at University, Well-Being, and Mental Health Variables

	<i>n</i>	<i>α</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Interpersonal strengths	254	.87	18.64	2.530	--							
2. Emotional strengths	254	.85	17.75	2.772	.623**	--						
3. Strengths of restraint	254	.80	17.93	2.588	.724**	.659**	--					
4. Intellectual strengths	254	.77	17.27	2.754	.543**	.692**	.628**	--				
5. Theological strengths	254	.68	16.08	3.414	.459**	.632**	.533**	.511**	--			
6. Psychosocial strength magnitude	254	--	1.94	.124	.338**	.387**	.383**	.304**	.169**	--		
7. Coping while attending university	254	.82	1.24	.489	.168**	.410**	.240**	.265**	.214**	.325**	--	
8. Global WB	253	.94	4.56	.741	.365**	.649**	.426**	.472**	.418**	.323**	.470**	--
9. Financial WB	253	.82	4.42	1.069	.081	.238**	.099	.158*	.136*	.061	.289**	.639**
10. Physical WB	253	.89	4.07	1.097	.238**	.444**	.352**	.277**	.253**	.238**	.351**	.799**
11. Social WB	253	.86	5.20	.902	.288**	.528**	.261**	.230**	.323**	.272**	.361**	.669**

(continued)

	<i>n</i>	<i>α</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
12. Eudaimonic WB	253	.83	4.46	.862	.363**	.622**	.430**	.592**	.503**	.282**	.376**	.835**
13. Hedonic WB	253	.87	4.62	1.050	.344**	.626**	.395**	.458**	.382**	.282**	.435**	.839**
14. Anxiety symptoms	245	.91	8.89	5.746	-.230**	-.321**	-.186**	-.208**	-.163*	-.168**	-.436**	-.423**
15. Depression symptoms	246	.89	9.02	6.366	-.155*	-.351**	-.211**	-.212**	-.130*	-.257**	-.481**	-.492**
16. Positive affect	245	.87	33.22	6.840	.373**	.611**	.493**	.481**	.415**	.353**	.332**	.562**
17. Negative affect	243	.87	26.62	7.616	-.258**	-.326**	-.214**	-.234**	-.064	-.171**	-.396**	-.368**
18. Perceived stress	245	.85	26.40	7.380	-.268**	-.481**	-.342**	-.353**	-.244**	-.258**	-.434**	-.572**
19. Early conduct problems	254	.77	4.16	6.028	-.135*	-.096	-.160*	-.006	-.132*	-.185**	-.126*	-.139*

(continued)

	9	10	11	12	13	14	15	16	17	18	19
1. Interpersonal strengths											
2. Emotional strengths											
3. Strengths of restraint											
4. Intellectual strengths											
5. Theological strengths											
6. Psychosocial strength magnitude											
7. Coping while attending university											
8. Global WB											
9. Financial WB	--										
10. Physical WB	.433**	--									
11. Social WB	.330**	.345**	--								

(continued)

	9	10	11	12	13	14	15	16	17	18	19
12. Eudaimonic WB	.366**	.550**	.460**	--							
13. Hedonic WB	.425**	.577**	.592**	.715**	--						
14. Anxiety symptoms	-.207**	-.414**	-.216**	-.301**	-.484**	--					
15. Depression symptoms	-.231**	-.483**	-.265**	-.362**	-.562**	.782**	--				
16. Positive affect	.262**	.426**	.314**	.511**	.580**	-.244**	-.336**	--			
17. Negative affect	-.198**	-.339**	-.159*	-.284**	-.379**	.584**	.536**	-.124	--		
18. Perceived stress	-.348**	-.458**	-.301**	-.470**	-.598**	.645**	.605**	-.480**	.527**	--	
19. Early conduct problems	-.074	-.129*	-.127*	-.078	-.138*	.186**	.170**	-.081	.179**	.111**	--

Note. α = Cronbach's alpha, WB = well-being

* $p \leq .05$, ** $p \leq .01$

As predicted by hypothesis 1, the categories of VIA strengths were positively associated with one another. The strongest relationship was found between interpersonal strengths and strengths of restraint, while the weakest relationship was found between theological and intellectual strengths. However, all of these relationships were significant, indicating that high scorers in one strength category tend to also score highly in others, or that magnitudes of character strengths tend to increase (or decrease) together.

Hypothesis 2 predicted that positive affect would show the strongest positive correlation with emotional strengths, and weaker positive correlations with intellectual, interpersonal strengths, and theological strengths. This hypothesis was fully supported. There was a significant positive correlation between positive affect and emotional strengths. Positive associations were also found for positive affect with intellectual, theological, and interpersonal strengths, as well as strengths of restraint. Post-hoc William's tests were carried out to compare the correlation coefficient of the positive affect and emotional strengths association with the respective correlation coefficients representing the associations between positive affect and the other strength categories. These tests revealed that positive affect's association with emotional strengths was significantly different from its associations with interpersonal strengths, $t(242) = 5.342, p \leq .001$, strengths of restraint, $t(242) = 2.816, p = .005$, intellectual strengths, $t(242) = 3.250, p = .001$, and theological strengths, $t(242) = 4.456, p \leq .001$. The importance of emotional strengths for this emerging adult sample is further explored below in discussion of psychometric validation analyses (hypotheses 12-16).

Hypothesis 3 predicted that lower global well-being would be associated with higher levels of depression, anxiety, and early conduct problems. This hypothesis was fully supported. Global well-being was significantly associated with depression, anxiety, and early conduct

problems, respectively. These findings are in line with earlier results from research with both adolescent and emerging adult populations.

Hypotheses Related to Psychosocial Strengths in Emerging Adult Undergraduates

The results of the correlations between signature psychosocial strength magnitude and other variables of interest can be viewed in Table 4. The results of the analyses using hierarchical linear regression models can be found in Tables 5 and 6 below. Hierarchical regression was chosen to examine these relationships based on past literature, which has established that stress is positively associated with depression and anxiety, and negatively associated with well-being. Inclusion of stress in the current models, therefore, served to account for any of the variance in the proposed signature strength magnitude-outcome variable relationships that should not be attributed to signature strengths in reality.

As predicted by hypothesis 4, the magnitude of signature strength endorsement was significantly and positively associated with global well-being. To better elucidate the nature of this relationship, a hierarchical linear regression model was analyzed using well-being as an outcome variable (see Table 5). The first step of the model included age and gender as demographic control variables. The second step included perceived stress, and the third step included the magnitude of signature strengths. All three steps were included in this model, indicating that signature strength magnitude was still positively and significantly associated with well-being when accounting for the variance attributed to age, gender, and perceived stress.

Table 5

Summary of Hierarchical Regression Analyses Predicting Well-Being, Depression, and Anxiety

Predictor	Outcome variables					
	Global well-being ₁		Anxiety ₂		Depression ₃	
	β^a	Block ΔR^2	β^a	Block ΔR^2	β^a	Block ΔR^2
Step 1		.027*		.029*		.020
Age in years	-.083		.031		.072	
Gender	-.147*		.171**		.129*	
Step 2		.306***		.389***		.349***
Perceived stress	-.563***		.636***		.603***	
Step 3		.032***		.000		.009
Signature strength magnitude	.188***		.006		-.100	
<i>n</i>		239		238		238

Note. The final model for 1 included 3 steps; $R^2 = .366$, $F(4,240) = 34.565^{***}$. The final models for 2 and 3 included 2 steps; for 2, $R^2 = .418$, $F(3,235) = 56.342^{***}$; for 3, $R^2 = .370$, $F(3,234) = 45.722^{***}$.

^a standardized β

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

As predicted by hypothesis 5, the magnitude of signature strength endorsement was significantly and negatively associated with both depression, and anxiety. To better understand this relationship, two hierarchical linear regression models were analyzed using depression and anxiety as respective outcome variables (see Table 5). The first step of these models included age and gender as demographic control variables. The second step included perceived stress, and the third step included the magnitude of signature strengths. Only two steps were included in these models. Both depression and anxiety showed significant associations with gender and perceived stress, but the model did not improve after step two and there were no significant associations with signature strength magnitude.

These results suggest a difference in the relationships between signature psychosocial strengths and well-being and maladjustment, respectively. It seems that relationship between well-being and signature strength magnitude cannot be entirely accounted for by perceived stress level, and that there is some unique variance in well-being that can be predicted by signature strengths. However, the same cannot be said for depression and anxiety, which are not predicted by signature strength magnitude when accounting for level of perceived stress. This provides further support for the notion that well-being and maladjustment are two separate constructs with unique predictors. Implications of this finding in the context of other results from the present study are discussed below.

Although significant associations were observed between signature strength magnitude and each outcome variable, when controlling for the variables in the first two steps, significant associations only remained for the well-being model. In the case of the anxiety and depression models, the inclusion of perceived stress in the second step accounted for enough of the variance that a significant relationship was no longer observed with signature strength magnitude and the outcome. This suggests that the associations between signature strength magnitude and these outcomes may come about through a mechanism of stress level. Symptoms of anxiety and depression may be lowered more effectively by a decrease in stress than by an increase in the magnitude of signature strengths.

To this end, hypothesis 7 predicted a different model for the respective relationships between signature strength magnitude, and depression and anxiety. This hypothesis predicted that the relationships between signature strength magnitude and anxiety and depression, respectively, would be mediated by perceived stress level. Mediated relationships were analyzed using the PROCESS macro in SPSS.

In the model predicting anxiety from signature strength magnitude with perceived stress as a mediator variable, signature strength magnitude was a significant predictor of anxiety, $b = -7.748$, $t(237) = -2.596$, $p = .01$. Signature strength magnitude was also a significant predictor of perceived stress, $b = -.16.717$, $t(237) = -4.420$, $p < .001$. Perceived stress was a significant predictor of anxiety, $b = .5053$, $t(237) = 12.536$, $p < .001$. In the full model, signature strength magnitude no longer significantly predicted anxiety when accounting for the mediating perceived stress variable, $b = .5998$, $t(237) = .2456$, $p = .81$. This suggests an indirect effect of perceived stress in the relationship between signature strength magnitude and anxiety.

A similar finding resulted from the prediction of depression from signature strength magnitude, with perceived stress as a mediator. Signature strength magnitude was a significant predictor of depression, $b = -13.270$, $t(236) = -4.405$, $p < .001$. Signature strength magnitude was, again, a significant predictor of perceived stress, $b = -16.324$, $t(236) = -4.303$, $p < .001$. Perceived stress was a significant predictor of depression, $b = -.498$, $t(236) = 10.815$, $p < .001$. In the full model, signature strength magnitude no longer significantly predicted depression when accounting for the mediated perceived stress variable, $b = -5.138$, $t(236) = -1.843$, $p = .07$. This suggests an indirect effect of perceived stress in the relationship between signature strength magnitude and depression. Thus, hypothesis 7 was fully supported, as both depression and anxiety were mediated by perceived stress.

The finding that the depression/anxiety-signature strength magnitude relationships are both directly mediated by perceived stress helps us to understand the true nature of these relationships. Just as in the hierarchical regression models with these outcomes, including stress as an intermediary variable reduces their relationship to signature strength magnitude to a level of non-significance. This indicates that the respective correlations between signature strength

magnitude, and depression and anxiety, are only present because all of these variables are also associated with perceived stress. In other words, signature strength magnitude is associated with stress, which then associated with depression and anxiety. Therefore, those who experience lower signature strength magnitude only also experience higher depression and/or anxiety because of an additional experience of stress.

Hypothesis 6 predicted that signature strength endorsement would be positively associated with positive affect, and negatively associated with negative affect. This hypothesis was confirmed, as positive affect, and negative affect, were both significantly associated with signature strength endorsement. Additional regression models were analyzed using positive affect and negative affect as outcome variables, respectively (see Table 6). Like the previous hierarchical regression analyses, these models also included three steps. The first step included age and gender as demographic control variables, the second step included depression, anxiety, and perceived stress, and the third step included the magnitude of signature strengths. As before, these models were chosen based on findings from past literature. Depression, anxiety, and perceived stress were included as predictors before signature strength magnitude to avoid erroneously attributing any variance in emotional experiences to signature strengths.

Table 6

Summary of Hierarchical Regression Analyses Predicting Positive and Negative Affect

Predictors	Outcome variables			
	Positive affect ₁		Negative affect ₂	
	β^a	Block ΔR^2	β^a	Block ΔR^2
Step 1		.006		.032*
Age in years	.032		.047	
Gender	-.067		.176**	
Step 2		.257***		.349***
Depression	-.226*		.113	
Anxiety	.270**		.338***	
Perceived stress	-.522***		.221**	
Step 3		.046***		.001
Signature strength magnitude	.228***		-.031	
<i>n</i>		228		227

Note. The final model for 1 included 3 steps; $R^2 = .309$, $F(6,221) = 16.464^{***}$. The final model for 2 included 2 steps; $R^2 = .391$, $F(5,221) = 27.238^{***}$.

^a standardized β

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$;

In the first model, where positive affect served as an outcome variable, three steps were included. Positive affect was associated with depression, anxiety, perceived stress, and signature strength magnitude. In the second model, where negative affect served as the outcome variable, only two steps were included in the final model. Negative affect was significantly associated with gender, anxiety, and perceived stress. However, there was no significant association between negative affect and signature strength magnitude, and the model did not improve after step 2. Much like the regression models that predicted anxiety and depression, it seems that stress may serve to explain the variance that is present in the associations between signature strengths and these affect outcomes. The implication of these results is aligned with the above

findings, in that an increase in signature strengths is better predictive of increased positive affect and well-being than of decreased negative affect and maladjustment.

Lastly, hypothesis 8 predicted that the strength “Coping while attending university” would be positively associated with both global and financial well-being. This hypothesis was supporting in the domains of both global well-being, and financial well-being. These results suggest that having a stronger endorsement of this strength is indicative of better overall functioning in terms of emotion, mental health, and general well-being. It is possible that individuals with these patterns of functioning are able to effectively cope with the unique demands of the university context.

Relating Character Strengths to Well-Being and Signature Psychosocial Strength

Magnitude

An initial Pearson correlation was conducted to address hypotheses 9 and 10 (see Table 4 above). Given that signature psychosocial strength magnitude and well-being were positively associated with one another, multivariate regression analyses were subsequently conducted with the GLM function using the two predictor variables as covariates. Although well-being was used as an outcome variable in other analyses within the present study, it is included as a predictor variable here to account for any variance that might be attributed to global well-being within the character strength-signature psychosocial strength relationship. The results of these analyses can be viewed in table 7.

Table 7

VIA Character Strengths as Predicted by Global Well-Being and Magnitude of Signature Strength Endorsement

Character strengths	<i>n</i>	α	<i>M</i>	<i>SD</i>	Predictor variables/covariates	
					Global well-being	Signature strength magnitude
1. Creativity	251	.83	16.81	3.534		
<i>r</i>					.375**	.278**
β					1.688***	5.865**
2. Bravery	246	.65	16.28	3.330		
<i>r</i>					.359**	.258**
β					1.457***	4.524**
3. Perseverance	247	.83	17.72	3.776		
<i>r</i>					.366**	.361**
β					1.480***	7.617***
4. Honesty	250	.79	20.81	2.832		
<i>r</i>					.277**	.192**
β					1.037***	2.805
5. Self-regulation	253	.63	15.07	3.420		
<i>r</i>					.384**	.248**
β					1.368***	7.078***
6. Hope	252	.79	17.28	3.833		
<i>r</i>					.601**	.341**
β					3.320***	4.238*
7. Spirituality	251	.90	12.60	5.370		
<i>r</i>					.351**	.094
β					2.944***	-3.022
8. Social intelligence	253	.73	18.09	3.243		
<i>r</i>					.416**	.316**
β					1.457***	6.349***
9. Kindness	248	.80	20.33	3.013		
<i>r</i>					.268**	.245**
β					.711*	4.828**
10. Love	247	.81	18.98	4.123		
<i>r</i>					.567**	.322**
β					2.851***	5.678*

(continued)

Character strengths	<i>n</i>	α	<i>M</i>	<i>SD</i>	Predictor variables/covariates	
					Global well-being	Signature strength magnitude
11. Leadership	251	.76	19.00	3.158		
<i>r</i>					.389**	.310**
β					1.502***	6.734***
12. Forgiveness	250	.73	16.90	3.507		
<i>r</i>					.318**	.353**
β					1.190**	8.500***
13. Curiosity	245	.82	17.05	3.524		
<i>r</i>					.588**	.311**
β					2.947***	3.328
14. Love of learning	248	.77	15.77	4.107		
<i>r</i>					.157*	.088
β					.616	.175
15. Fairness	251	.83	20.24	3.291		
<i>r</i>					.244**	.258**
β					.800*	6.908***
16. Prudence	248	.80	17.99	3.603		
<i>r</i>					.232**	.269**
β					.686	6.893**
17. Appreciation of beauty and excellence	251	.80	17.91	3.772		
<i>r</i>					.172**	.088
β					.447	1.567
18. Gratitude	251	.79	17.85	3.489		
<i>r</i>					.478**	.257**
β					2.149***	1.567
19. Humility	252	.72	16.98	3.360		
<i>r</i>					.129*	.187**
β					-.008	6.284**
20. Humor	250	.79	19.58	3.241		
<i>r</i>					.304**	.170**
β					1.209***	4.345*
21. Judgment	250	.77	19.32	3.076		
<i>r</i>					.367**	.292**
β					1.401***	4.925**

(continued)

Character strengths	<i>n</i>	α	<i>M</i>	<i>SD</i>	Predictor variables/covariates	
					Global well-being	Signature strength magnitude
22. Teamwork	250	.69	18.51	3.187		
<i>r</i>					.330**	.282**
β					.981**	5.917**
23. Zest	250	.82	16.25	3.960		
<i>r</i>					.656**	.357**
β					3.569***	4.759**
24. Perspective	251	.78	18.08	3.539		
<i>r</i>					.316**	.255**
β					1.775***	3.917

Note. α = Cronbach's alpha.

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Hypothesis 9, that the character strengths hope, zest, gratitude, love, and curiosity, would be most strongly associated with global well-being of all the character strengths, was fully supported. This hypothesis remained supported when variance due to signature strength magnitude was accounted for. Each of these associations remained significant when signature psychosocial strength magnitude was included as a predictor in the regression model.

Hypothesis 10, that the emotional strengths would be most highly correlated with signature psychosocial strength magnitude of all the character strength categories, was partially supported. As seen in Table 4 above, emotional strengths do have a larger correlation with signature psychosocial strength magnitude, than do the other categories of character strengths. Post-hoc William's tests were carried out to ascertain whether the magnitude of this correlation was significantly different from the correlations between psychosocial strength magnitude and each of the other categories of character strength. These tests revealed that there was no significant difference between this correlation with emotional strengths and the respective correlations with interpersonal strengths, $t(251) = .975, p = .330$, strengths of restraint, $t(251) = .084, p = .933$, or intellectual strengths, $t(251) = 1.816, p = .071$. There was a significant

difference between this correlation with emotional strengths and the correlation with theological strengths, $t(251) = 4.382, p \leq .001$. Although the difference is not statistically significant, the results that suggest a possibility of a strong relationship between signature strength magnitude and emotional strengths warrant further discussion. The relationship between emotional strengths and psychosocial strength domains is further expanded upon below in the discussion of psychometric validation analyses.

Hypothesis 11 was only partially supported. As predicted, hope, love, and zest, were among the five character strengths with the strongest associations with psychosocial strength magnitude, and each of these associations remained significant when global well-being was included as a predictor in the regression model. However, the associations with forgiveness, and perseverance, were also among the strongest, which is contrary to the hypothesis. The character strengths of curiosity and gratitude were also hypothesized to be most strongly associated with signature strength magnitude; however, although curiosity, and gratitude, were significantly associated with signature psychosocial strength magnitude, these associations were no longer significant once well-being was included in the regression model.

These results suggest that well-being plays into the relationship between these character strengths and the magnitude of signature strengths, such that certain character strengths (such as curiosity and gratitude) may only be associated with psychosocial strengths through a pathway of well-being. The positive directionality of the associations indicates that curiosity and gratitude may be higher for those with higher signature strength magnitude, but only for those who also experience a high level of well-being. Further study will be needed to examine these research questions.

Construct Validity Testing for the SAI-PS

The results of the correlations between each psychosocial strength domain and the 5 categories of VIA character strengths can be viewed in table 8. These tests were conducted for the sake of establishing some amount of convergent validity of the SAI-PS with related constructs.

Table 8

Correlations between Psychosocial Strength Domains and Categories of Character Strengths

Psychosocial strengths	α	M	SD	Character strength categories				
				Emotional	Interpersonal	Restraint	Intellectual	Theological
Family	.81	1.613	0.357	.303**	.246**	.260**	.193**	.226**
School	.75	1.558	0.263	.324**	.204**	.293**	.337**	.222**
Free Time	.70	1.048	0.288	.329**	.254**	.214**	.423**	.295**
Friends	.74	1.642	0.339	.421**	.280**	.337**	.232**	.213**
Self-Knowledge	.88	1.450	0.350	.549**	.363**	.426**	.530**	.327**
Healthy Lifestyle	.83	1.497	0.395	.303**	.115	.258**	.131*	.204**
Being Involved	.86	1.037	0.557	.360**	.249**	.253**	.284**	.245**
Faith and Culture	.85	1.034	0.489	.361**	.279**	.310**	.298**	.551**
Job	.89	1.667	0.458	.176**	.099	.125*	.123*	-.010
Goals and Dreams	.91	1.710	0.452	.349**	.248**	.352**	.307**	.190**
Significant Other	.99	0.931	0.956	.167**	.001	.002	-.001	.113
Attending University	.82	1.241	0.490	.410**	.168**	.240**	.265**	.214**
Time Management	.78	1.538	0.475	.280**	.073	.205**	.162**	.083
Engaging with Others	.82	1.202	0.575	.504**	.230**	.309**	.377**	.250**
Parenting	.99	0.028	0.226	-.046	-.130*	-.061	-.031	-.017

Note. α = Cronbach's alpha.* $p \leq .05$, ** $p \leq .01$

Hypothesis 12 was partially supported. As predicted, strengths from self-knowledge was correlated most highly with emotional strengths. However, strengths from goals and dreams was most strongly correlated with strengths of restraint, and strengths from free time was most highly correlated with intellectual strengths, which was unpredicted.

Hypothesis 13, predicting associations with interpersonal strengths, was not supported. Each of the strengths with engaging with others, being involved, friends, family, and significant other were most strongly associated with emotional strengths, not the anticipated interpersonal strengths. As predicted, strengths from parenting was most strongly associated with interpersonal strengths, but the negative direction is unanticipated. Hypothesis 14, predicting associations with strengths of restraint, was similarly unsupported. Each of the strengths with coping while attending university, with time management/planning, on the job, and keeping a healthy lifestyle, were more strongly associated with emotional strengths than the other categories.

Hypothesis 15 was fully supported. Strengths at school were most strongly associated with the category of intellectual strengths. Hypothesis 16 was also fully supported. Strengths from faith and culture were most strongly associated with theological strengths.

Overall, the majority of the psychosocial strengths were more strongly associated with emotional strengths than any other character strength category. When it comes to the anticipated psychometric support for the SAI-PS, these relationships and their magnitudes do not necessarily negate such support. It is worth noting that in each case of these unanticipated magnitudes of association, the hypothesized relationships were present, but the associations between the psychosocial and character strengths in question were simply not as strong as the relationships between those psychosocial strengths and the emotional character strengths (as is seen in Table

6). This may simply suggest a particular primacy of emotional strengths during the emerging adulthood years. That emotional strengths have a stronger relationship than other categories of character strength simply indicates that this population may be unique in that regard.

The notion that emotional character strengths may be the strongest aspects of character during emerging adulthood is supported by the finding that signature strength magnitude is most strongly associated with emotional strengths over other character strength domains. Emotional strengths seem to increase in importance along with the increase in psychosocial strength magnitude, regardless of whether those psychosocial strength areas are considered signature ones. Therefore, the positive associations between the character and psychosocial strengths that were hypothesized do provide some amount of validation for the SAI-PS. The proposed relationships are still present, even if their magnitude and order of importance may have been somewhat unprecedented.

Likewise, the support for hypotheses 15 and 16 certainly provides firm convergent validity for those psychosocial strength subscales. The outcome from strengths from parenting cannot be interpreted with any certainty, however, due to the fact that only one respondent endorsed this strength as being a signature one. Therefore, no conclusion about the validity of the strengths from parenting subscale can be drawn at this time.

Additionally, as previously noted, expected relationships were observed between signature strength magnitude and well-being, and signature strength magnitude and depression, anxiety, and conduct problems (as predicted by hypotheses 4 and 6). These results provide a basis for claims of both convergent and discriminant validity for the SAI-PS and related constructs. They also open the door for additional discussion around the relationships between

the psychosocial strength domains and character strength categories, which may appear differently than was originally proposed.

Exploratory Analyses

One-way ANOVA was conducted to address the possibility that a significant difference in signature strength endorsement might exist between those seeking mental health services and those who are not. The difference between the two groups was found to be significant, $F(1,252)=10.045, p=.002$. The difference in mean levels can be viewed in Figure 1.

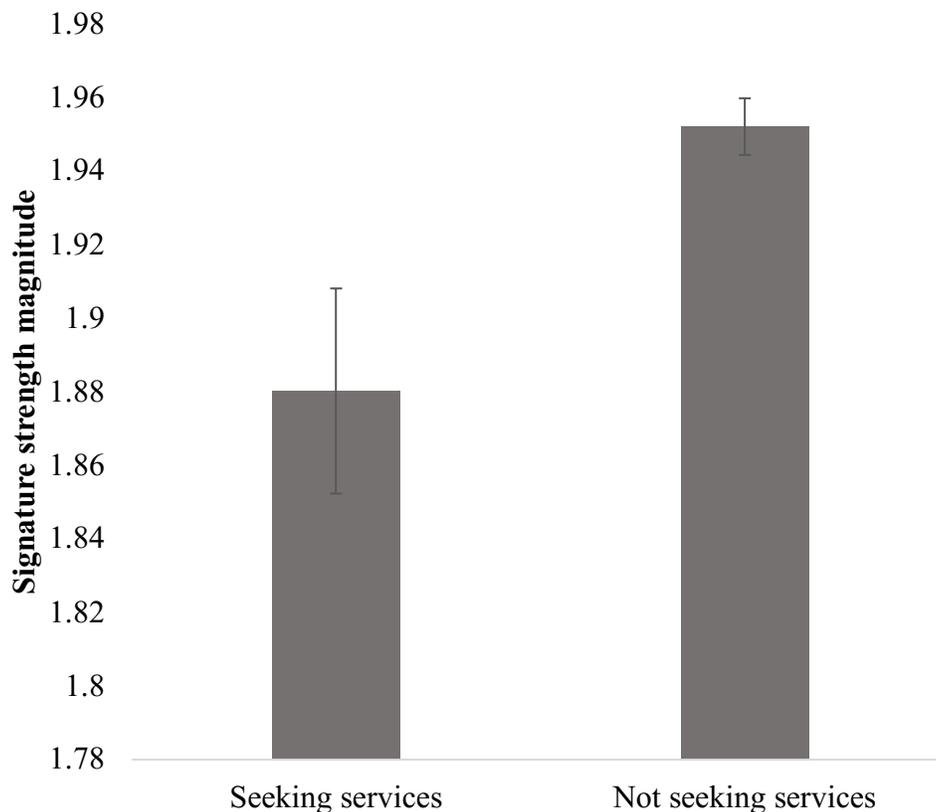


Figure 1. Comparison of mean levels of signature strength magnitude for those seeking and not seeking mental health services. Error bars denote standard errors.

An ANCOVA was also conducted to further explore this relationship. Mental health service-seeking was entered as a predictor variable, with signature strength magnitude serving as the outcome. Global well-being and perceived stress were also entered into the model as

covariates. All output was interpreted using the “ROBUST” subcommand in SPSS, given that the standard ANCOVA violated Levene’s test of homogeneity of variances (an essential assumption for the statistical comparison of means; Olejnik & Algina, 1984). The difference between the two groups was no longer significant when the covariates were included, $F(1,241)=2.957, p=.087$. However, well-being remained a significant predictor of strengths, $F(1,241)=10.386, p=.001$. Perceived stress was not a significant predictor of strengths, $F(1,241)=1.522, p=.218$. This suggests that the difference in mental health service-seeking groups found in the original ANOVA can be accounted for by an individual’s level of well-being. In other words, high well-being remained characteristic of those with a high level of signature strength endorsement, and seeking mental health services did not impact this relationship in a significant way.

Finally, the exploratory collection of the trajectory of signature strength development is considered. The rate at which trajectories were identified by those endorsing each psychosocial strength as a signature one can be viewed in Table 3 above. The most frequently endorsed psychosocial strength was goals and dreams ($n=139$), while the least endorsed strengths were free time and parenting (both $n=1$). The strengths family (40.5%), free time (100%), self-knowledge (42.9%), healthy lifestyle (55.2%), being involved (36%), faith and culture (57.1%), time management (35.1%), and engaging with others (35.7%) were most commonly identified as being maintained at a similar magnitude throughout childhood, adolescence, and emerging adulthood. This trajectory was the most frequently endorsed for the development of signature strengths. By contrast, the strengths school (46.7%), friends (38.8%), goals and dreams (40.3%), job (51.7%), significant other (50%), and coping while attending university (47.4%) were most commonly identified as increasing in magnitude from childhood to adolescence, and again from

adolescence to emerging adulthood. The strength parenting was singularly endorsed as increasing in strength from childhood to adolescence, and decreasing in strength from adolescence to emerging adulthood (100%).

Qualitative Analysis and Results

Participants were able to provide long-form responses in a space marked “Your comments” following the questions measuring each psychosocial strength. They were also able to provide written responses to the question, “When is the first time you can remember using your strength?” for each endorsed strength. The responses to these items were examined using a framework approach to thematic analysis (Smith & Firth, 2011). As this portion of the study was exploratory in nature, a template for qualitative study of the responses did not previously exist. Our current general understanding of psychosocial strengths was, therefore, what guided the analysis of these responses. Our interest in participant responses to the SAI is primarily related to the domain, level of endorsement, and lifespan development of a signature strength. These constructs are captured by the quantitative portions of the SAI, and we approached the qualitative portions as if they were a means to further explicate those quantitative responses.

The written comments of both signature and non-signature strength domains were examined for themes related to these general constructs of interest. Themes within these variable categories were refined throughout the process of analysis in order to gain an accurate and comprehensive picture of psychosocial strengths. The themes emerged as the most frequently identified ideas from the responses to the open-ended questions can be viewed in table 9. Responses that clearly exemplify each theme are included in the exploration of themes below.

Table 9

Emerging Themes Related to Strength Development

Themes	Summary
Modelled and cultivated behaviours	The strength was modelled by significant others in the individual's life and consciously developed over time
Ever-present	The strength has always been an important aspect of the individual's life.
Means of relating to others	The strength was used to develop and maintain relationships.
Coping with challenges	The strength was used to deal with challenging circumstances in the individual's life
Intrinsic motivation	The individual developed and/or maintained the strength (at least in part) because of personal drive or goals.
Emergence of self-knowledge	The point at which the individual was able to identify the life domain as a personal strength.

Strengths as Modelled and Cultivated Behaviours

When considering the broad question of when participants first noticed their strengths emerging, many cited important adults and peers from their childhood who modelled these behaviours for them. This was especially evident for the strengths that directly involve relationships with other people. For example, many participants stated that their strengths with family or friends developed as they observed active, positive members of those groups.

Participant 215: *“Having the strength of trust, I can confide in my mom because she has taught me what trust looks like and I know she will be there to support and listen to me.”*

Participant 89: *“I have been lucky to have surround [sic] myself with really good friends over the years and I am able to lean on them and same for them.”*

When speaking about strengths at school or on the job, participants often spoke to the influence of their teachers, professors, and supervisors in showing them the ways in which they could be effective in those domains of their lives.

Participant 106: *“In kindergarten, I read so voraciously that the teacher ran out of books for me to read in the classroom. She took me to the school library and I discovered a chapter book series that I really enjoyed. It was a large selection of books, and before the school year was over, I had read every single one.”*

Participant 37: *“When I was about 18 at my first job, it was a locally owned business and I developed a sense of hard work pays off.”*

Some other strengths were cited as having been cultivated from experience over time. Strengths with planning and time management were sometimes stated to having been learned over time as school got more difficult and activities became more busy when the participants were children or adolescents. Strengths during free time was conceptualized in much the same way; some participants stated that having played time-intensive sports as children taught them to manage their time effectively and to make the most of what free time could be carved out.

Participant 178: *“When I was in grade 4 I had a teacher who gave me so much work that [...] I didn't know how to handle it. The school recognized my troubles so they gave me a grade 5 teacher who taught me how to use time management skills in order to recognize that there was more to life than school. Ever since grade 5, managing my time to make time for myself has been super important to me. Now I never let myself burn out because I remember how awful it used to feel to be constantly slaving over school.”*

Participant 136: *“When being in plenty of sports as a kid, you learn self management [sic] and skills.”*

Strengths as Ever-Present

Contrary to the last theme, many people noticed that their strengths had seemingly no source, but that they had simply always been present. However, many also suggested that the ever-present strength was a product of their upbringing, or a result of the expectations or culture within their households. This was particularly evident from the responses related to strengths at school and coping while attending university. Many responses indicated that the individuals' parents and/or families had instilled within them a love of learning and an expectation of academic success from a young age.

Participant 38: "I've always been a strong student. The value of education was embedded within me from a young age."

Participant 222: "I have always tried my best and worked hard during school. Working hard is something that I learned from my siblings and parents."

Others spoke more broadly about the culture in which they had grown up, stating that their communities had always been a place of kindness, service, and cultural pride, which are strengths that they have always seen reflected in themselves.

Participant 189: "Being a part of the African community meant everyone pitching in, I was young [when I first used this strength]."

Participant 151: "I was raised in church and I grew up in Northern Ontario [with] both my Native and Caucasian sides of the family around."

Strengths as a Means of Relating to Others

Many people cited their strengths having emerged from a wish to be closer to important people in their life. This theme was another that was particularly evident for the strengths that directly pertain to relationships with others. Strengths with family and friends were often

characterized in this way, as participants cultivated these strengths as a means of mediating conflict within their families and groups of friends.

Participant 24, referring to their strengths with family: *“When I was younger, I would mediate conversation and try and defuse situations.”*

Both strengths with friends and in relationships were cited as being important to the respondents so that they could be supportive of those people, offer advice, and show them kindness.

Participant 55: *“When my best friend was going through a hard time, I supported her by keeping her company.”*

Participant 102: *“During break-ups and hard times, I was always there for my friends.”*

Participant 155: *“I remember always being open to listen to my boyfriend about his problems and willing to provide advice if he wanted it.”*

Additionally, many who endorsed strengths in engaging with others stated the importance of volunteering and service to other people.

Participant 216: *“In grade nine, when I volunteered for the first time at a camp, I had to learn to serve others before myself.”*

Most broadly, other participants endorsed many of these relational strengths as being important for the sake of making others in their lives happy.

Participant 19: *“I was a child (3 or 4 years) and I helped my mother try to feel happier when she was crying.”*

Participant 240: *“I am very supportive towards my friends and often put their needs above my own.”*

Participant 178: *“I have always used my hobbies to make other people feel good. Since I am a great swimmer I invite people to go swimming with me. Since I am a great baker I bake for people. Since I like to crochet I crochet gifts for people.”*

Strengths as a Means of Coping with Challenges

Participants described using their strengths to cope with challenges when speaking about varying domains. More specifically, participants spoke how their relationships with family, friends, classmates, and romantic partners were essential for the support they needed to deal with difficult circumstances.

Participant 49: *“When I went into foster care, and I was brought back to my family, strength was in all of us.”*

Participant 178: *“When I was 7 years old I moved across the province. I had to use my friendship strengths to make new friends in a new place.”*

Participant 57: *“I used to have a hard time opening up with my boyfriend due to the fear of them leaving and then knowing my secrets. This has changed over time as our relationship has developed.”*

In responses related to strengths during free time and keeping a healthy lifestyle, some cited the need for leisure and taking care of oneself in order to effectively cope in the face of difficulty.

Participant 34: *“I needed something to distract me from my mental health issues back in highschool [sic].”*

Participant 38: *“I experienced trauma 3 years ago and was severely depressed. “Strengths during my free time” were very therapeutic and now a large part of my life.”*

Participant 216: *“At the beginning of high school, [...] I had to find ways to cope with the change in environment after coming out of elementary school.”*

Often, participants spoke of some of the domains as being the source of the challenges in their lives. The most often cited strengths as being a source of challenge were with school, family, and friends. In most cases, participants spoke of instances in the past where these areas of their life caused them some sort of interpersonal, emotional, or mental difficulty. Since these challenges occurred, however, most participants spoke of the ways that they found themselves overcoming them and learned to further develop their strength in that domain.

***Participant 34:** “Late in high school, [...] my grades were fails and I actually had to apply myself to my work in the hopes of improving.”*

***Participant 119:** “After failing a class in grade 9, I redid it getting constant A's and B's.”*

***Participant 57:** “My family went through a significant trauma in 2014 and going through that together really proved to me how close we were and how much I could trust them and rely on them when it was needed.”*

Strengths as Intrinsically Motivated

Some individuals described their strengths as being motivated by their own internal standards. For example, some participants stated that their strengths with school, coping while attending university, or on the job were motivated by their own desire to succeed in their academic and professional fields. Though some acknowledge that these values were instilled in them as young people, many felt that they were continuing to value these domains of their life of their own volition now that they are emerging adults.

***Participant 62:** “[I am] learning to study independently as apposed [sic] to high school where I didn't really study much.”*

Participant 12: *“I never applied myself in school as a child and dropped out of high school at 16. I got my GED at 22 and attended Georgian College. After graduating from Georgian I applied to Lakehead.”*

Participant 205: *“For my first job 2 years ago I remember needing to achieve certain certifications in order to qualify for the job I wanted.”*

Another example of this transition to independent engagement in a strength domain is in the area of faith and culture. Participants who strongly endorsed this domain were often described having grown up within a faith or cultural community, but some of these individuals said that they were now members of these groups by their own choosing.

Participant 178: *“I have always been a religious person. Ever since I moved I have had to practice my religion on my own (without the motivation of my relatives) but I have proudly stuck with it!”*

Still others stated that they had not grown up in any particular faith or cultural community, but had sought one out on their own as they grew older. In all of these cases, the motivation for continued involvement in this life domain was based on a value for faith or culture that the individual themselves was continuing to acknowledge and act on as an independent emerging adult.

Participant 57: *“I have become more aware of the culture I am a part of and have become a jingle dress dancer and have a stronger understanding of where my family and I came from.”*

Others described their strengths as motivated by a desire to invest in their own self-care. This was particularly evident in the strengths with keeping a healthy lifestyle. Many people who endorsed this strength were motivated to keep their health a priority, acknowledging that they

feel better and are able to perform better in other areas of their lives when their health and hygiene are taken care of. Keeping healthy was also cited as a form of “productive procrastination,” whereby individuals with a high level of stress from a busy schedule are able to relieve some of their stress by simply taking care of their basic needs first.

***Participant 63:** “Having good personal hygiene helps me feel better, as well as maintaining and keeping a clean space for a clear mind.”*

Strengths with family and friends were also shown to be related to self-care. Some individuals identified that they developed one or both of these strengths in instances where they realized that a certain family member or friend was a “toxic” influence in their lives. Ending that relationship, or giving it less priority in their lives, both relieved them of some amount of stress and allowed them to see what they look for in those relationships, and to see their own self-worth in a different light.

***Participant 57:** “Growing up during high school I had a very toxic friend that I let push me around and use me to make her feel better about herself. It took 2 years of a toxic friendship before I realized it was unhealthy and walked away from her.”*

Emergence of Self-Knowledge in Regard to Strengths

The ways in which people came to recognize that different domains of their lives were, in fact, strength areas varied widely. As stated above, many people noted that some of their strengths have always been a part of their lives due to family influence or personal aptitude. However, some of these individuals did not really consider these domains of their lives to be strengths.

***Participant 115, referring to their strengths with family:** “I can't pin this down, something I've been doing for as long as I can remember.”*

Participant 212, referring to their goals and dreams: “[They] have always been “background” information. Don’t really think [sic] or use them much.”

Although those domains were important to them, this importance was not always made explicit from the moment that a strength in that area began to develop. Others did recognize these areas as strengths, even though they seemingly did not have a distinct start point.

In some cases, participants noted that it took a challenge or a major life event that related to a certain domain for a strength area to present itself or be recognized. For example, participants were able to identify academic challenges they experienced in the past as having been overcome because of their strengths in school or coping while attending university. They were also able to recognize that their strengths in these areas increase as a result of having overcome these challenges.

Participant 205: “I started studying effectively in grade 11 when course material became more challenging.”

Participant 216: “Before university, I began to study harder to get into university and obtain scholarships.”

Still others noted that they required external acknowledgement to recognize their strength areas. In some instances, strengths at school in certain subjects were only realized after an individual won a school award or was given a higher mark than their peers.

Participant 34: “I remember being really little and having people tell me I was hella smart.”

Participant 176: “I got an award for always paying attention.”

Participant 253: “In grade 5, I made it to the spelling bee and was the second best in my class.”

Strengths during free time, as they relate to competitive activities, were sometimes only realized when an individual won a sports championship or a contest of some skill, for example.

Participant 4: “I think it was when I achieved my first platinum playstation [sic] trophy.”

Some participants even noted that participation in this study was the first time they had ever conceived of certain domains of their lives as being areas of strength. Before they were asked to think about their lives in this manner, they stated that it had not occurred to them to think about strengths in such a way.

Participant 216, referring to strengths from self-knowledge: I do not know when I first used these strengths, as I have never really thought about my personal self-knowledge in this way before.

Discussion

The results of the study aim to both clarify and expand on the complexity of individual strengths in terms of theory, operationalization, and relationships to other relevant variables. Analytic findings from our study are discussed below and related to both theoretical and practical implications.

As expected, several hypotheses adapted from previous studies were confirmed. Firstly, the categories of character strength were significantly and positively associated with one another. For example, the strongest of these relationships exists between interpersonal strengths and strengths of restraint, while the weakest relationship existed between interpersonal and theological strengths. This is in keeping with the theory of the character model of strengths, which suggests that each individual is in possession of each strength to some degree; individual differences can be observed in the hierarchies of these strengths within each person (Park et al.,

2004). Second, positive affect was more strongly associated with emotional strengths over the other categories of character strength. Third, well-being was negatively associated with the measures of maladjustment (depression, anxiety, and conduct problems). These consistent findings are important for further interpretation of the more complex results, as they lend credence to the novel findings related to psychosocial strengths.

Theoretical Conceptualizations of Psychosocial Strengths

In research thus far, the theory underlying psychosocial strengths has focused mostly on the development of strengths during the child and adolescent stages of the lifespan. In particular, Bowers and colleagues' (2010) Five Cs of positive development was formulated from an understanding of the formation of strengths in early life. The results discussed here have larger implications for this theoretical model. In particular, the qualitative responses relate to the Five Cs quite clearly. Participants indicated on several occasions that the given psychosocial strength domains were important to them because they either represented or encapsulated the development of meaningful relationships (i.e., connection and caring), a sense of mastery over a particularly challenging task (i.e., competence), personal growth (i.e., confidence), and a connection to the values of the household and culture in which they were raised (i.e., character). Although this is a theory that came out of research with youth populations, the Five Cs clearly continue to apply to individuals as they make use of their strengths in their emerging adult years.

This finding also helps create a bridge to the validity of the Five Cs that was found in older adulthood by Owens and colleagues (2018). It appears that these concepts remain central to the development and fostering of psychosocial strengths in many stages of the lifespan. In the Owens study, participants often cited social supports as a source of strength; significant others in their lives had either helped them develop specific competencies that they considered to be

strength areas, or the relationships were cited as strengths in and of themselves. The same general pattern was observed in the present study, as participants were able to speak to the ways that these relationships had acted as sources of support in their lives. In addition, much like the Owens study, participants were able to cite intrinsic motivations for developing their areas of strengths.

Using this understanding, one can evaluate the findings of trajectories of strength development as identified by participants. As indicated in Table 3 above, participants tended to indicate either that their strengths had been about the same over the course of their lifespan, or else had been increasing since their childhood until their present emerging adult years. The former perspective is aligned with the qualitative responses that indicated individuals' psychosocial strengths had always been present. This trajectory was identified as the most common for several strength areas (i.e., family, free time, self-knowledge, healthy lifestyle, being involved, faith and culture, time management, and engaging with others). Indeed, when Owens et al. (2018) interviewed older adults as to the development of their strengths, they found that many of them did state that certain domains of their lives had always been very important to them.

Another of Owens and colleagues (2018) important findings, however, was the increase in the magnitude of strengths over the course of the lifespan. Our data likewise reflects this, as consistent increase in strength magnitude was common, and the most highly endorsed trajectory in the case of some strength areas (i.e., school, friends, goals and dreams, on the job, significant other, and coping while attending university). Some of these are expected (such as coping while attending university, significant others, and on the job), as they are life domains that are not typically engaged in in a meaningful way prior to mid- to late adolescence. The observed

trajectory for goals and dreams also makes sense, given that emerging adulthood is typically the life stage in which individuals begin to set clear goals for their futures (Arnett, 2007). Again, a portion of the qualitative responses reflect this, as participants indicated that certain competencies needed to be cultivated over time as those life domains became more central to their everyday lives.

Overall, the present study replicated the findings of past research using the 5 Cs framework (i.e., Owens et al. 2018). It is important to note that the present findings also serve as an extension of past research, as the understanding of the development of psychosocial strengths has been shown to apply to emerging adulthood in the undergraduate student context. Moreover, these findings align with our understanding of strengths as an overarching construct that encompasses factors both internal and external to the individual. The centrality of both personal resources and social support in the conceptualization of psychosocial strengths in the present study are reflective of this framework's validity in the larger, overarching theories of positive psychology (McQuaide & Ehrenreich, 1997). Operationalizing strengths in this manner for undergraduate emerging adults is further discussed below.

Operationalization of Psychosocial Strengths

In relevant past research, the psychosocial strengths have been operationalized through the use of an SAI specifically formulated for the participants' developmental stage. Studies with adolescents, for example, showed that the SAI-Y was valid and reliable for use in research (Brazeau et al., 2012). One of the aims of the present study was to similarly demonstrate validity for the SAI-PS through comparison of participant responses on this measure and the VIA-120.

The ways in which psychosocial strengths relate to character strengths were demonstrative of some intriguing results. Interestingly, the emotional character strengths may

relate more strongly to various domains of psychosocial strengths than other categories of character strength. Although significant differences in the associations between psychosocial strengths and character strength categories were only observed between the emotional and theological strength associations, it is worth considering that these emotional strengths are rather characteristic of the developmental stage itself. The most obvious example of these emotional strengths, love, relates to the an individual's investment in the deepening of close relationships (Park et al., 2004). An increase in intimacy in romantic relationships in particular is one of the most prevalent developmental tasks in emerging adulthood (Mayseless & Keren, 2014), which can help to account for this result.

Another empirical example comes in the form of hope as an emotional strength. Marques and Gallagher (2017) found that hope generally increased throughout the lifespan, including from adolescence to emerging adulthood. In six aforementioned psychosocial strength domains that were identified as a signature strength, participants were most likely to indicate that their strength had increased throughout their lifespan. If a sense of hope had also increased throughout their lifespan, it makes sense that hope would likewise be important for this population. Although an increase in hope between adolescence and emerging adulthood was not measured in this study, this result is still theoretically congruent with these past findings.

In this way, these results might slightly shift our current understanding of emerging adulthood. Arnett (2000) postulates that its key developmental tasks are in the realms of work and love, as well as the consolidation of one's identity in these areas. In light of this study, perhaps these developmental tasks can be understood in terms of strengths. For example, the centrality of the character strength "love" might be understood as an intrinsic factor that contributes to the further fostering of the psychosocial strengths related to romantic and social

relationships. In a similar way, the character strength “hope” might be understood as an intrinsic factor that motivates individuals to develop their psychosocial strengths in order to make their way in the world according to their specific goals. Indeed, hope has been shown to positively correlate with many desirable outcomes, including academic and job performance in adults (Marques & Gallagher, 2017). Use of psychosocial strengths could be a means by which hope is both expressed and fostered in this population, such that individuals use their signature strengths as a concrete means of achieving these hopes. Emerging adulthood can therefore be reconceptualized as a period of life in which psychosocial strengths are mobilized to achieve goals in relationships and career, and take on roles that are characteristic of the adult stage of development.

As stated previously, the anticipated relationships between character and psychosocial strengths were not totally supported. Although the hypotheses relating the results from the SAI-PS and those from the VIA were not entirely confirmed, the use of the SAI-PS to measure psychosocial strengths in this population cannot be discounted. It is possible that the relatively high magnitude of the relationship between psychosocial and emotional character strengths may simply be a unique feature of this population, as supported by the aforementioned conceptualization of emerging adulthood as characterized by love, hope, and other emotional strengths. It is also worth reiterating that, with the exception of strengths from parenting, all of the relationships between psychosocial strength domains and character strength categories were significant and in the anticipated direction. Therefore, the hypothesized congruence between item contents may be less indicative of construct validity for the SAI-PS than was originally thought. Although emotional strengths seem to be of central importance for this population, the

importance of all character strength categories should be considered in this psychometric validation.

Other findings that lend support to the validity of the SAI-PS are the relationships between signature strength magnitude and the measures of well-being and maladjustment. As expected, signature psychosocial strengths were associated in a positive and significant way with the various domains of well-being. Strengths are, in theory, considered to be used primarily to increase one's well-being. Therefore, this finding demonstrates that the SAI-PS is measuring psychosocial strengths in an expected way. This finding also aligns with studies of character strengths which show positive relationships to well-being in undergraduates (e.g., Douglass & Duffy, 2015). Conversely, the SAI-PS was negatively associated with depression and anxiety. Again, this finding is aligned with past research using measures of psychosocial strengths and depression in youth (e.g., Harris, Brazeau, Rawana, Brownlee, & Mazmanian, 2016), as well as studies of character strengths and depression and anxiety in undergraduates (e.g., Duan, 2016; Huta & Hawley, 2010). Therefore, it is valid to say that construct validity has been established for the SAI-PS through both convergent and discriminant means. Taken altogether, the results indicate that the SAI-PS can be considered a valid research tool for the investigation of psychosocial strengths in undergraduate emerging adults.

Relationships Between Psychosocial Strengths and Other Variables of Interest

The pathways by which strengths relate to well-being and maladjustment constitute some of the novel findings from the present study. The fact that the respective pathways between signature strength magnitude and well-being and maladjustment were unique speaks to the validity of the decision to measure both of these aspects of functioning individually, as opposed to opposite ends of a single continuum. This aligns with earlier conceptualizations of these

variables both within (i.e., Huta & Hawley, 2010) and outside of (i.e., Peter et al., 2011) the strengths literature. The present findings refute the oft-held assumptions that positive predictors of well-being can be assumed to be negative predictors of maladjustment, and that positive predictors of maladjustment can be assumed to be negative predictors of well-being. These results introduce the possibility that improving mental health through the use of signature strengths may increase well-being, but would not decrease negative mental health symptoms.

The finding of unique pathways in these analyses serves as a replication of sorts for the results obtained by Huta and Hawley (2010). However, it is also an expansion of their findings, as their research was conducted using measures of character strengths. The present study, meanwhile, utilized the magnitude of signature psychosocial strengths to demonstrate these relationships. From this, it is reasonable to suggest that the way in which these positive qualities operate in relation to well-being and maladjustment may be the same across strength conceptualizations for undergraduate students. This is but one point to add to the earlier discussion of similarities between these two strength models. It is also further support that they are conceptually similar, as their similar relationships to the variables in question demonstrates that they both belong under the same general umbrella of “strengths”.

Another novel finding relates to the complexity that is added to these relationships with the inclusion of stress as an intermediate variable. Past research regarding the undergraduate experience highlights the unique stressors that characterize university student life, such as pressure for high academic performance (Baker, 2004), financial strain (Northern, O’Brien, & Goetz, 2010), and expectations for work force entry (Arnett, 2007). However, the nature of the relationships between stress, related mental health variables, and the use of a strength area in the individual’s life have not been clearly articulated in the past. As previously mentioned, the

present study found that the respective negative associations between depression and anxiety, and signature psychosocial strengths are no longer significant when accounting for the role of stress. This suggests that psychosocial strength domains may be less of a means of directly coping with mental health challenges, and more used to both increase well-being and decrease stress levels.

These relationships may exist, in part, due to the concrete nature of psychosocial strengths and the way in which they are measured (Brazeau et al., 2012). Personal resources and social supports can be directly utilized in one's life to lower levels of stress, which are easily observable, especially in a population for whom stress is ubiquitous. Stress is also identified as a pathway to mental disorders such as depression and anxiety (Duan, 2016). Referring, as Duan (2016) does, to the transactional model of stress and coping, it is logical that individuals with a larger magnitude of their signature strength would perceive less stress in their environment. It is likely that these individuals have the ability to mobilize their personal and social resources to cope with stress and ultimately suffer fewer anxiety and/or depression symptoms.

The qualitative responses given by participants further supports the notion that psychosocial strengths show significant relationships to both well-being and stress. The undergraduates who responded to the open-ended questions largely spoke to times in which their strengths helped them to feel a sense of fulfillment in their lives either interpersonally or within themselves. The descriptions of support given and received in family, friend, and romantic relationships all align with the potential for increased well-being. It is notable that these descriptions of intrinsic fulfillment and external support appeared within the contexts of both stressful life events and normal, day-to-day functioning. These findings are in congruence with those of Owens and colleagues (2018). Responses to their qualitative study indicated that the

respondents observed their strengths arise over time in positive contexts. Stressful life events or personal weaknesses were cited less often as having prompted them to improve upon their areas of strength, though this was still a frequently observed theme in the responses.

Additionally, school and coping while at university were frequently cited as stress-inducing by the current participants. However, it seemed that participants largely were able to focus on the ways in which they could cope with the stress caused by these challenges through either mastery of a difficult task or engagement in leisure activities. Very few participants spoke to specific mental health difficulties in relation to their strengths, in spite of the fact that a relatively large number of individuals met thresholds indicating potential mental health difficulties on the measures of anxiety and depression. These rates of anxiety and depression are generally aligned with past research of emerging adults, regardless of status as a student (Blanco et al., 2008).

The analyses that used positive and negative affect as outcome variables also lend support to these other findings. Positive affective experiences are generally considered to contribute to well-being (Fredrickson & Joiner, 2002), while negative affective experiences can be symptomatic of mental health problems like depression and anxiety (Dunkley, Zuroff, & Blankstein, 2003). The current findings follow this general pattern, and align with the well-being and maladjustment results explored above. Even when controlling for well-being and maladjustment, signature strengths relate to positive affect, but not to negative affect. This suggests that emerging adult undergraduates might find use of signature strengths to be helpful for increased well-being, but not necessarily to mitigate negative affective states. These new findings could have implications for interventions aimed at supporting undergraduate mental health, as detailed below.

In a related way, the comparisons of those who are seeking mental health services also speak to the relationship between well-being and psychosocial strengths. As past research had not suggested any clear direction for the well-being and signature strength relationship, no hypotheses were made to this effect. Though initial analyses in the present study suggested that the individuals seeking mental health services appeared to be significantly lower in psychosocial strengths magnitude than those who were not, this relationship was entirely accounted for by the addition of well-being to the model. This logically aligns with the above results. As seeking mental health services necessitates that the individual has some mental health concern they wish to address, it makes sense that strengths, which do not directly relate to the measured mental health concerns, also appear to have no direct bearing on their treatment. While taking a strength-based approach in treatment of mental disorder symptoms is not necessarily contraindicated, it may be more appropriate for preventative care interventions or programming to be strengths-focused in this population.

Finally, the results that showed that financial well-being was not significantly related to psychosocial strengths are of special interest. This was, of course, contrary to the expectation that signature strengths magnitude and financial well-being would be significantly and positively related. This expectation was based on past findings that indicate financial stress is prevalent in the emerging adult experience, especially for those who are engaged in post-secondary education (e.g., Northern, O'Brien, & Goetz, 2010).

The present demographic information indicates that the vast majority of the sample (82.3%) relied on income from themselves and/or their families, though this does not necessarily indicate financial comfort. Additionally, 51.1% of the sample have received funding through OSAP or an educational authority, which can certainly contribute to a sense of financial well-

being. Only 11.8% of the sample indicated that they were not currently working but wanted to find employment, while 65.4% were employed in some capacity. It is possible that this particular sample has a generally good sense of financial well-being, but that finances cause them some instances of stress. It is also possible that this relationship might emerge later in adulthood, but that it is not a relevant factor for emerging adults in the context of strengths. A somewhat contradictory relationship of this nature might skew the results such that responses are not as extremely positive or negative as they might be otherwise, resulting in no observed relationship between financial well-being and psychosocial strength magnitude. Given that this result is so contrary to past research, it is recommended that future research continue to take into account financial aspects of well-being when measuring this construct so as not to erroneously exclude an important factor.

Practical Implications, Future Directions

It is clear from the responses to the open-ended questions that the majority of participants can retrospectively observe their strengths operating in their lives from a young age. That being said, some participants also indicated that because those elements of their lives had always been present, they were not really even aware that they could be conceived of as areas of strength. Given that past research has established the protective nature of psychosocial strengths in building resilience and well-being in children and adolescence, perhaps early intervention from a strengths-based approach would be the most effective in mitigating the potentially damaging effects of stress. This could, in turn, lead to less mental health difficulties for those individuals both when they are young, and in their later emerging adult years. Longitudinal research with strength-based interventions such as those carried out by Harris and colleagues (2016) to address

adolescent substance use could determine whether these interventions produce positive outcomes in the long-term.

In lieu of such early intervention, the knowledge gained in this study also has practical implications for possible future interventions targeted toward undergraduate students. One of the most surprising findings was the relatively low rates of mental health service seeking, given that a large proportion of the sample indicated that they experience a clinical level of anxiety and/or depression symptoms. However, this is not necessarily contrary to past research, which has often revealed low rates of help-seeking in emerging adults as a whole (Hunt & Eisenberg, 2010). This calls into question a number of factors, such as the nature of the services that are currently being offered, as well as availability and accessibility of these services. Evaluation of said services, especially those located on the Lakehead University campus, could shed light on the barriers that students may be encountering in this regard.

It is now known that there is a robust relationship between psychosocial strengths, well-being, and stress level. Future interventions could therefore be tailored to address these variables. Such interventions may be most effective at the preventative level in an attempt to mitigate any future symptoms of depression and anxiety. Programs could be tailored to bring awareness to and mobilize individual's psychosocial strengths in such a way that they are able to cope with stressors related to school and their relationships. Interventions that have been conducted to mobilize character strengths may serve as a framework for these psychosocial strength interventions. For example, a study by Gander, Proyer, Ruch, and Wyss (2013) demonstrated that an intervention which focused specifically on a daily practice of utilizing the emotional strength gratitude produced more experiences of happiness and less depressive symptoms than a placebo intervention. The same study also demonstrated that participants given

an intervention that specifically focused on their top five strengths as measured by the VIA produced similar outcomes. However, a review by Quinlan, Swain, and Vella-Brodrick (2012) implies that the context in which these interventions are utilized in an individual's life may impact their effectiveness. Therefore, incorporating evaluation of psychosocial strengths may be beneficial for intervention recipients to identify those contexts in which their character strengths might be most easily recognized and consciously engaged with in order to increase well-being. Though this study has aided in our understanding of the relationships between these variables, further research will be required to properly structure and implement programming in an evidence-based manner.

Limitations

Perhaps the greatest limitation of this study lies in our use of the interview protocol that was utilized to gather responses about the development of psychosocial strengths. While the protocol itself was well-developed by Owens and colleagues (2018) and relevant to the present research questions, the decision to utilize a multiple choice format for the majority of the questions limited the amount of information that could be gathered in our study. In this case, the decision was made to recruit a large sample to complete several self-report measures in favour of a smaller sample who might have been interviewed more in depth. A richer picture of how exactly strengths had manifested in these individuals' lives would have been gained had we opted to use the latter methodology.

The use of online, anonymous responses can also be considered a limitation of the study. Although it appears that the participants completed the measures in an appropriate amount of time (i.e., around forty minutes), their level of concentration and focus on the task could not be

measured. Again, having participants complete measures face-to-face or in an interview format might have given a clearer idea of participants' level of engagement in the study material.

Another methodological limitation lays in the cross-sectional nature of the data. Although suggestions for program evaluation and implementation are given above, these may not be worth pursuing until the temporal relationships between these variables are better understood. Future studies may address this by utilizing a longitudinal study to examine the temporal order of strengths, well-being, stress, and mental health variables. For example, levels of signature strength magnitude should be demonstrated to be antecedents of stress level, at least in part. Strengths-focused interventions could then be justified as a form stress reduction, and ultimately reduction in levels of anxiety and depression. A longitudinal design using these variables would allow researchers to track antecedents and outcomes in a meaningful way, as to better develop programming that produces optimal results.

Conclusion

The present study sought to measure both character and psychosocial strengths in an emerging adult undergraduate student sample in order to clarify their theoretical relationship to overarching theories of strengths, validate the use of the psychosocial strength model in undergraduate students, and demonstrate how the relationships between strengths, well-being, and maladjustment might inform future interventions. In sum, psychosocial strengths in undergraduates remain reflective of strengths theory overall, as they indicate both personal resources and social supports that are used to enhance well-being and cope with challenges. The psychosocial strength model relates most closely to emotional character strengths, which is understandable given the developmental context of emerging adulthood and the expected tasks within this stage of life. Emerging adulthood can therefore be understood as a developmental

period in which psychosocial strengths are used to accomplish tasks characteristic of the stage, such as those related to love and work. Psychosocial strengths also are more closely related to well-being and stress than to anxiety or depression, indicating that interventions aimed at increasing well-being and decreasing stress may benefit from a strengths-based approach. Furthermore, the SAI-PS has demonstrated construct validity when considering the observed relationships between psychosocial strength domains and categories of character strengths as measured by the VIA-120, as well as well-being and maladjustment variables. Further research to develop and evaluate strength-based interventions for undergraduates might utilize the psychosocial model to foster competency in specific domains of life in which individuals can utilize concrete strategies to increase well-being and decrease stress.

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Appendix A

Participant Demographics

Please provide the following information:

1. Age:
2. Program/year in university:
3. Gender:
 - Male
 - Female
 - Other: _____
4. Do you consider yourself to be transgender?
 - Yes
 - No
5. Do you consider yourself to be:
 - Heterosexual (straight)
 - Homosexual (gay or lesbian)
 - Bisexual
 - Other: _____
6. Ethnicity:
 - Aboriginal (e.g., First Nations, Métis, Inuit)
 - Black (e.g., African, African American, African Canadian, Caribbean)
 - East Asian (e.g., Chinese, Japanese, Korean, Polynesian)
 - South Asian (e.g., Indian, Pakistani, Sri Lankan, Bangladeshi)
 - Southeast Asian (e.g., Burmese, Cambodian, Filipino, Laotian, Malaysian, Thai, Vietnamese)
 - West Asian (e.g., Arabian, Armenian, Iranian, Israeli, Lebanese, Palestinian, Syrian, Turkish)
 - Latin American (e.g., Mexican, Indigenous Central and South American)
 - White/Caucasian
 - Mixed origin: _____
 - Other: _____
7. Employment status, in addition to being a student:
 - Working for pay
 - Full time
 - Part time
 - Caring for children or other family members
 - Full time
 - Part time
 - Unemployed
 - Looking for work
 - Not looking for work
 - Other: _____
8. How are you paying for school?
 - Funding self/family assistance
 - OSAP

- Educational authority
 - Second career/skills development
 - Other: _____
9. While attending university, where do you reside?
- Parents' home
 - Own home/apartment
 - Off-campus housing
 - On campus (residence)
10. Are you currently seeking mental health services from a psychiatrist, psychologist, or psychotherapist?
- Yes
 - No

Appendix B

Values in Action Inventory of Strengths

Please choose one option in response to each statement. All of the questions reflect statements that many people would find desirable, but we want you to only answer in terms of whether the statement describes what you are like. Please be honest and accurate!

		Very Much Unlike Me	Unlike Me	Neutral	Like Me	Very Much Like Me
1	Being able to come up with new and different ideas is one of my strong points.					
2	I have taken frequent stands in the face of opposition.					
3	I never quit a task before it is done.					
4	I always keep my promises.					
5	I have no trouble eating healthy foods.					
6	I always look on the bright side.					
7	I am a spiritual person.					
8	I know how to handle myself in different social situations.					
9	I always finish what I start.					
10	I really enjoy doing small favours for friends.					
11	There are people in my life who care as much about my feelings and well-being as they do about their own.					
12	As a leader, I treat everyone equally well regardless of his or her experience.					
13	Even when candy or cookies are under my nose, I never overeat.					
14	I practice my religion.					
15	I rarely hold a grudge.					
16	I am always busy with something interesting.					
17	I am thrilled when I learn something new.					
18	I like to think of new ways to do things.					
19	No matter what the situation. I am able to fit it.					
20	I never hesitate to publicly express an unpopular opinion.					
21	I believe honesty is the basis for trust.					
22	I go out of my way to cheer up people who appear down.					

23	I treat all people equally regardless of who they are.					
24	One of my strengths is helping a group of people who work well together even when they have their differences.					
25	I am a highly disciplined person.					
26	I always think before I speak.					
27	I experience deep emotions when I see beautiful things.					
28	At least once a day, I stop and count my blessings.					
29	Despite challenges, I always remain hopeful about the future.					
30	My faith never deserts me during hard times.					
31	I do not act as if I am a special person.					
32	I welcome the opportunity to brighten someone else's day with laughter.					
33	I never seek vengeance.					
34	I value my ability to think critically.					
35	I have the ability to make other people feel interesting.					
36	I must stand up for what I believe in even if there are negative results.					
37	I finish things despite obstacles in the way.					
38	I love to make other people happy.					
39	I am the most important person in someone else's life.					
40	I work my very best when I am a group member.					
41	Everyone's rights are equally important to me.					
42	I see beauty that other people pass by without noticing.					
43	I have a clear picture in my mind about what I want to happen in the future.					
44	I never brag about my accomplishments.					
45	I try to have fun in all kinds of situations.					
46	I love what I do.					
47	I am excited by many different activities.					
48	I am a true life-long learner.					
49	I am always coming up with new ways to do things.					

50	People describe me as “wise beyond my years”.					
51	My promises can be trusted.					
52	I give everyone a chance.					
53	To be an effective leader, I treat everyone the same.					
54	I never want things that are bad for me in the long run, even if they make me feel good in the short run.					
55	I have often been left speechless by the beauty depicted in a movie.					
56	I am an extremely grateful person.					
57	I try to add some humor to whatever I do.					
58	I look forward to each new day.					
59	I believe it is best to forgive and forget.					
60	I have many interests.					
61	When the topic calls for it, I can be a highly rational thinker.					
62	My friends say that I have lots of new and different ideas.					
63	I am always able to look at things and see the big picture.					
64	I always stand up for my beliefs.					
65	I do not give up.					
66	I am true to my own values.					
67	I always feel the presence of love in my life.					
68	I can always stay on a diet.					
69	I think through the consequences every time before I act.					
70	I am always aware of the natural beauty in the environment.					
71	My faith makes me who I am.					
72	I have lots of energy.					
73	I can find something of interest in any situation.					
74	I read all of the time.					
75	Thinking things through is part of who I am.					
76	I am an original thinker.					
77	I am good at sensing what other people are feeling.					
78	I have a mature view on life.					
79	I am as excited about the good fortune of others as I am about my own.					

80	I can express love to someone else.					
81	Without exception, I support my teammates or fellow group members.					
82	My friends always tell me that I am a strong but fair leader.					
83	I always keep straight right from wrong.					
84	I feel thankful for what I have received in life.					
85	I know that I will succeed with the goals I set for myself.					
86	I rarely call attention to myself.					
87	I have a great sense of humor.					
88	I rarely try to get even.					
89	I always weigh the pros and cons.					
90	I stick with whatever I decide to do.					
91	I enjoy being kind to others.					
92	I can accept love from others.					
93	Even if I disagree with them, I always respect the leaders of my group.					
94	Even if I do not like someone, I treat him or her fairly.					
95	As a leader, I try to make all group members happy.					
96	I am a very careful person.					
97	I am in awe of simple things in life that others might take for granted.					
98	When I look at my life, I find many things to be grateful for.					
99	I have been told that modesty is one of my most notable characteristics.					
100	I am usually willing to give someone another chance.					
101	I think my life is extremely interesting.					
102	I read a huge variety of books.					
103	I try to have good reasons for my important decisions.					
104	I always know what to say to make people feel good.					
105	I may not say it to others, but I consider myself to be a wise person.					
106	It is important to me to respect decisions made by my group.					
107	I always make careful choices.					
108	I feel a profound sense of appreciation every day.					

109	If I feel down, I always think about what is good in my life.					
110	My beliefs make my life important.					
111	I awaken with a sense of excitement about the day's possibilities.					
112	I love to read nonfiction books for fun.					
113	Others consider me to be a wise person.					
114	I am a brave person.					
115	Others trust me to keep their secrets.					
116	I gladly sacrifice my self-interest for the benefit of the group I'm in.					
117	I believe that it is worth listening to everyone's opinions.					
118	People are drawn to me because I am humble.					
119	I am known for my good sense of humor.					
120	People describe me as full of zest.					

Appendix C

Strengths Assessment Inventory – Post Secondary

This checklist is not a test, however, it is designed to help you think about different strengths that you have in your life. There are no right or wrong answers.

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 that you had 4 months ago).

Answer each question for yourself. Be as honest as you can and try to answer all questions. Mark your answer in the column that describes you best.

Answer all the questions that apply to you. If the question does not apply to you, then mark the “Does not apply” option. For instance, if the question says “I take care of my pet,” and you do not have a pet, mark the “Does not apply” option.

If you want to say more about a question, write at the bottom of the page where it says, “Comments”.

	Strengths with Family	Not at all	Some-times	Almost always	Does not apply
1	I show that I care about other people in my family.				
2	I actively participate in activities with my family.				
3	I can talk to someone in my family when I need to talk to someone. I trust them.				
4	I get along with my siblings.				
5	I get along with others in my family.				
6	I feel badly if I do things that upset people in my family.				
7	I follow the rules where I live.				
8	I take responsibility for my behaviours.				
9	I treat my family members with respect.				
10	I assist with household maintenance.				
11	I am open and honest with my parents or guardian.				

The one person I trust the most in my family is:

Your comments:

	Strengths at School	Not at all	Some-times	Almost always	Does not apply
12	I arrive on time for class.				

13	I study for tests.				
14	I take notes in class.				
15	I use my listening skills in class.				
16	I participate constructively in class discussions.				
17	I pay attention in class.				
18	I work independently.				
19	I do my homework.				
20	I finish my assignments on time.				
21	I get along well with school staff.				
22	I am involved in college/university clubs or varsity sports.				
23	I am involved in other activities at school (associations, activities).				
24	I attend my classes.				
25	When I am bored with studying, I find a way to continue anyway.				

Your comments:

	Strengths During Your Free Time	Not at all	Some-times	Almost always	Does not apply
26	I like to watch sports on TV or live.				
27	I have a favourite team.				
28	I watch educational programs.				
29	I am physically active.				
30	I enjoy listening to music.				
31	I play an instrument.				
32	I enjoy reading.				
33	I enjoy journaling.				
34	I enjoy playing computer games.				
35	I am artistic.				
36	When I am bored, I can think of positive activities.				
37	I enjoy baking/cooking.				
38	I enjoy board games or cards.				
39	I enjoy trying new things.				
40	I enjoy outdoor activities				
41	I spend time on hobbies.				
42	I enjoy crafts such as jewellery making, scrapbooking, woodworking, etc.				

Your comments:

Strengths with Friends	Not at all	Some-times	Almost always	Does not apply
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43	I have healthy positive friends.				
44	If one of my friends is struggling, I support them.				
45	I am honest with my friends.				
46	I can be the leader with my friends when deciding what to do.				
47	I make positive choices when with my friends.				
48	I am a problem solver for my friends.				
49	I have a best friend.				

Your comments:

	Strengths from Self-Knowledge	Not at all	Some-times	Almost always	Does not apply
50	I have a sense of humor.				
51	I enjoy learning new things.				
52	I feel hopeful about life.				
53	I can control my anger.				
54	I know my strengths.				
55	I feel confident.				
56	When something does not turn out the way I hoped, I can accept it.				
57	I express my opinion even if it is different from what others think.				
58	I can accept positive and negative feedback.				
59	I try challenging activities.				
60	I know what is acceptable and not acceptable.				
61	I will ask for assistance when needed.				
62	I have problem solving skills				
63	I am creative.				
64	I have good judgment.				
65	I have positive coping strategies.				
66	I have control over my feelings.				

Your comments:

	Strengths of a Healthy Lifestyle	Not at all	Some-times	Almost always	Does not apply
67	I participate in healthy activities.				
68	I care about my personal hygiene.				
69	I take care of my appearance.				
70	I eat healthy.				
71	I get the appropriate amount of sleep.				
72	I keep my living space clean.				
73	My home is organized.				
74	My clothing is neat and clean.				

75 | I take my medications appropriately | | | | |
 Your comments:

	Strengths from Being Involved	Not at all	Some-times	Almost always	Does not apply
76	I participate in the activities of a club or association.				
77	I participate in community activities.				
78	I respect community property.				
79	I volunteer.				
80	I make an effort to be a part of a community.				
81	I like to share my ideas with other people in the community.				

Your comments:

	Strengths from Your Faith and Culture	Not at all	Some-times	Almost always	Does not apply
82	I pray or go to worship with or without others.				
83	I respect teachers, or community leaders/elders.				
84	I feel that my spirit is close to nature.				
85	I believe in something bigger than myself.				
86	I feel I am part of a culture that is special.				
87	I try to honour my culture.				
88	I attend cultural events in my community.				
89	I take an interest in learning more about my culture and other people's cultures.				
90	I am proud of who I am and where my family or people came from.				
91	I respect others for who they are and where their people or family came from.				

Your comments:

	Strengths Your Goals and Dreams	Not at all	Some-times	Almost always	Does not apply
94	I want very much to achieve my goals and dreams.				
95	I work hard in school to have a certain grade level.				
96	I have aspirations (for career, family).				
97	I know my life will change as I get older.				
98	I know how to set goals that are reachable.				
99	I work hard to achieve my goals.				

Your comments:

	Strengths on the Job	Not at all	Some-times	Almost always	Does not apply
100	I use my money wisely.				
101	I do things that will help prepare me for employment (resumes, first aid); I contact people who may hire me and apply for jobs				
102	When I am working I arrive on time.				
103	When I am working I show up for my shift.				
104	I work hard on the job.				
105	I work well with others at work.				

Your comments:

106. Do you currently have a partner? YES NO
 If you answered yes, please answer the following:

	Strengths with Relationships/Significant Others	Not at all	Some-times	Almost always	Does not apply
107	How often do you and your partner do positive things together?				
108	I am open and honest with my partner.				
109	I work at having healthy relationships.				
110	I make the right choices about sexual behaviour.				
111	I go to my partner for assistance when I need it.				
112	I trust my partner with important information.				
113	I work on correcting issues in the relationship when needed.				
114	We plan fun/positive activities together.				
115	I treat my partner as my equal.				
116	I assist my partner to develop their strengths.				

Your comments:

	Strengths in Coping While Attending College/University	Not at all	Some-times	Almost always	Does not apply
117	When I become nervous/anxious at school I know how to relax.				
118	When I am overwhelmed with school or work, I am still able to manage.				
119	When I am discouraged in class, I know who to talk to or what to do.				
120	If I feel lonely I know who to turn to.				
121	If I become financially strained, I know where to go for assistance.				

122	If I have a problem that is troubling me, I know where to seek assistance				
123	If I drink alcohol, I drink responsibly.				
124	If friends pressure me to participate in excessive substance use, I am able to resist.				

Your comments:

	Strengths in Time Management/Planning	Not at all	Some-times	Almost always	Does not apply
125	When pressured with all my assignments due, I get them completed on time.				
126	I make time for studying and completing assignments.				
127	I can fit work and school into my days.				
128	I make plans for my family life (or home life) and school work to be manageable.				
129	My relationship(s) are not affected by my studying.				

Your comments:

	Strengths in Engaging with Others	Not at all	Some-times	Almost always	Does not apply
130	If I need to ask the teacher something about class I will.				
131	I contribute actively in group assignments to class.				
132	If I need assistance with issues outside the classroom.				
133	I attend college/university activities, even if I am by myself.				
134	I speak with others, with no hesitation.				

Your comments:

135. Are you a parent? YES NO
 If you answered YES, please answer the following:

	Strengths from Parenting	Not at all	Some-times	Almost always	Does not apply
136	I create a balance between school and parenting.				
137	When I am with my child/children, I make the effort to supervise them well.				
138	I try to make sure that my child's/children's needs are met.				

139	I work with my partner in parenting my/our child/children.				
140	Despite my academic workload, I continue to attend my child's/children's activities.				
141	I can financially support my child's/children's extracurricular activities.				
142	Even though I have a busy lifestyle, I make an effort to spend time with my children.				

Your comments:

Appendix D

The Development of Strengths Interview Protocol (Owens et al., 2018): Selected Questions

1. When is the first time you can remember using _____ (signature strength)?
2. How did you acquire _____ (signature strength)?
 - Did someone teach it to you?
 - Yes
 - No
 - Did you observe it?
 - Yes
 - No
 - Was it always present?
 - Yes
 - No
3. How did _____ (signature strength) develop over your life?
 - Was that strength during your adolescence similar or different to when you were a child?
 - Similar
 - Different; it was stronger in my adolescence than in my childhood.
 - Different; it was weaker in my adolescence than in my childhood.
 - Is that strength during your adulthood similar or different to when you were an adolescent?
 - Similar
 - Different; it was stronger in my adulthood than in my adolescence.
 - Different; it was weaker in my adulthood than in my adolescence.
4. Have your strengths changed over time?
 - Yes
 - No
5. Would you say your strengths have gotten stronger, weaker, or stayed the same over time?
 - Stronger
 - Weaker
 - Stayed the same

Appendix E

Well-Being Scale (Lui & Fernando, 2018)

Below are 29 statements about your **current status**. Please rate each of them from 1 (*strongly disagree*) to 6 (*strongly agree*).

Strongly disagree	Moderately disagree	Mildly disagree	Mildly agree	Moderately agree	Strongly agree
1	2	3	4	5	6

1. I am physically healthy.
2. I have enough financial resources to meet my needs.
3. I have enough financial resources to have fun.
4. I am satisfied with my housing.
5. I feel in control of my finances.
6. I feel in control over my physical health.
7. I am satisfied with my weight.
8. I have enough energy to do the things I need to do
9. I take good care of my physical health.
10. I plan for the future.
11. I have someone who knows me well to talk to when I have problems.
12. I know I can count on my friends and/or family in a time of crisis
13. There is at least one person I know who loves me and/or needs me.
14. I feel confident that I am able to solve most problems I face.
15. I like my life at home.
16. I am satisfied with my physical appearance.
17. I get along with people in general.
18. I enjoy spending time with friends and/or relatives.
19. I find time to do things that are fun and interesting.
20. I believe I have the potential to reach my goals.
21. I believe that I can make a difference in the lives of others.
22. Life has meaning for me.
23. I am satisfied with my spirituality.
24. I think I am as smart as, or smarter than, others.
25. I often do things that bring out my creative side.
26. I like engaging in stimulating conversations.
27. I try to do things that make me happy.
28. I feel happy often.
29. I enjoy life.

Appendix F**Generalized Anxiety Disorder Questionnaire – 7-item Version** (Spitzer et al., 2006)

Over the last **two weeks**, how often have you been bothered by the following problems?

Not at all	Several days	More than half the days	Nearly every day
0	1	2	3

1. Feeling nervous, anxious or on edge.
2. Not being able to stop or control worrying.
3. Worrying too much about different things.
4. Trouble relaxing.
5. Being so restless that it is hard to sit still.
6. Becoming easily annoyed or irritable.
7. Feeling afraid as if something awful might happen.

Appendix G

Personal Health Questionnaire – 9 Item Version (Kroenke et al., 2001)

Over the last **two weeks**, how often have you been bothered by the following problems?

Not at all 0	Several days 1	More than half the days 2	Nearly every day 3
-----------------	-------------------	------------------------------	-----------------------

1. Little interest or pleasure in doing things.
2. Feeling down, depressed, or hopeless.
3. Trouble falling asleep or staying asleep.
4. Feeling tired or having little energy.
5. Poor appetite or overeating.
6. Feeling bad about yourself, or that you are a failure or have let yourself or your family down.
7. Trouble concentrating on things, such as reading the newspaper or watching television.
8. Moving or speaking so slowly that other people could have noticed; or, the opposite – being so fidgety or restless that you have been moving around a lot more than usual.
9. Thoughts that you would be better off dead or of hurting yourself in some way.

Appendix H

Positive and Negative Affective Schedule (Watson et al., 1988)

This scale consists of a number of word that describe different feelings and emotions. Read each items and mark the appropriate answer next to that word. Indicate to what extent you have felt this way **during the past year**.

Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1	2	3	4	5

- | | |
|--------------------|------------------|
| Interested _____ | Irritable _____ |
| Distressed _____ | Alert _____ |
| Excited _____ | Ashamed _____ |
| Upset _____ | Inspired _____ |
| Strong _____ | Nervous _____ |
| Guilty _____ | Determined _____ |
| Scared _____ | Attentive _____ |
| Hostile _____ | Jittery _____ |
| Enthusiastic _____ | Active _____ |
| Proud _____ | Afraid _____ |

Appendix I

Perceived Stress Scale (Cohen et al., 1983)

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

In the past month , how often have you...	Never	Almost never	Some-times	Fairly often	Very often
1. been upset because of something that happened unexpectedly?					
2. felt that you were unable to control the important things in your life?					
3. felt nervous and "stressed"?					
4. dealt successfully with life's hassles?					
5. felt that you were effectively coping with important changes that were occurring in your life?					
6. felt confident about your ability to handle your personal problems?					
7. felt that things were going your way?					
8. found that you could not cope with all the things you had to do?					
9. been able to control irritations in your life?					
10. felt that you were on top of things?					
11. been angered because of things that happened that were outside of your control?					
12. found yourself thinking about things that you have to accomplish?					
13. been able to control the way you spend your time?					
14. felt difficulties were piling up so high that you could not overcome them?					

Appendix J

College Early Conduct Problems Inventory (Falls et al., 2011)

The questions below deal with some things you may have done or experienced in your lifetime. In the case of each item, please indicate how many times each action or event occurred **when you were a child or an adolescent**. If the action or event occurred at least one time, please indicate how old you were **the first time it occurred**.

Never	Once	Twice	Three times	More than three times
0	1	2	3	4

How many times, **before you turned 18 years old**, did you...

1. Break the rules?
2. Lie to get something or avoid responsibility?
3. Take property belonging to others?
4. Hurt others physically?
5. Bully, threaten, or try to intimidate another person?
6. Shoplift?
7. Damage property on purpose?
8. Steal something from someone?
9. Start fights with other people?
10. Set fires on purpose?
11. Cause physical harm to an animal?
12. Break into someone else's house, building, or car?
13. Run away from home overnight, at least twice while living at home OR once without returning for a lengthy period?
14. Use a weapon in a fight?

How many times, **before you turned 13 years old**, did you...

15. Often stay out at night without parental permission?
16. Skip school?

Appendix K**SONA Study Description/Advertisement**

Study Title: Personal Strengths and Well-Being

You are invited to participate in a study about your personal strengths and well-being as a university student. This study will take no more than 40 minutes of your time. Anyone over the age of 18 may participate in this study, though only data obtained from undergraduate students between the ages of 18 and 29 will be utilized in analysis.

Appendix L

Letter of Information and Consent Form



Faculty of Health and Behavioural Sciences
Department of Psychology

Personal Strengths and Well-Being

Student Researcher: Jane Harder, B. A. Hons. – jharder@lakeheadu.ca

Supervisor/Principal Investigator: Dr. Edward Rawana, PhD, C.Psych – erawana@lakeheadu.ca

Letter of Information & Consent for Potential Participants

Dear Potential Participant:

You are invited to take part in a research study entitled “Personal Strengths and Well-Being”. Taking part in this study is voluntary. Before you decide whether or not you would like to take part in this study, please read this letter carefully to understand what is involved. After you have read the letter, please direct any questions you may have to Jane Harder (principal investigator, Master’s student at Lakehead University) at jharder@lakeheadu.ca.

PURPOSE

The purpose of this research is to identify relationships between factors relating to personal areas of strength in one’s life, well-being, mental health, and stress.

ELIGIBILITY

Anyone over the age of 18 may complete this survey. However, only those responses from undergraduate student participants between the ages of 18 and 29 will be used in analysis.

PROCEDURES

Your participation will require you to complete the online survey following this letter. It is anticipated that the survey will take no more than **40 minutes** to complete. Following the completion of the survey, you will be directed to a final debriefing page which will provide you with some more information about the study.

Please remember that as a potential participant, you:

- are under no obligation to participate in the study. At any time before completing the study, you are free to discontinue the survey for any reason. However, due to the anonymous nature of the study, any data you have provided prior to discontinuation cannot be identified, and therefore cannot be withdrawn.
- for students participating through the SONA system, course credit will still be granted to those participants who choose to discontinue the study for any reason.
- are under no obligation to answer any questions with which you are uncomfortable.
- may contact the Principal Investigator at any time with any questions you may have regarding the study.

CONFIDENTIALITY

Your participation in this study will be completely **anonymous**. Though you will be asked to provide some demographic information, this will not include your name or any explicitly identifying information.

Following your participation in the study, all data gathered from participants will be stored in encrypted files on a secure hard drive in the possession of the Principal Investigator at Lakehead University. Data will remain completely confidential between the Principal Investigator and her Supervisor. In compliance with ethical guidelines, data will be stored for a minimum of 5 years following the completion of the study.

Please note that the online survey tool used in the study, SurveyMonkey, is hosted by a server located in the USA. The US Patriot Act permits U.S. law enforcement officials, for the purpose of anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without the person's knowledge. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study, you acknowledge this.

RISKS AND BENEFITS

We do not anticipate any risks associated with participation in this study. If you experience any distress or discomfort following your participation in this study, mental health services can be accessed on campus at the Student Health and Wellness Centre (Tel: 807-343-8361) or through the Good2Talk Student Hotline (Tel: 1-866-925-5454).

Participants completing this study through the SONA system will receive a benefit in the form of credit toward an eligible undergraduate psychology course. There are no other known benefits to participation.

WHAT WILL MY DATA BE USED FOR:

This research study is being undertaken as part of the Principal Investigator's Master's thesis project. Results will also be used for publication in scientific journals and presentation at academic conferences. Should you wish to inquire as to the results of the study, you may contact the Principal Investigator.

RESEARCH ETHICS BOARD REVIEW AND APPROVAL:

This research study has been reviewed and approved by the Lakehead University Research Ethics Board. If you have any questions related to the ethics of the research and would like to speak to someone outside of the research team, please contact Sue Wright at the Research Ethics Board at [807-343-8283](tel:807-343-8283) or research@lakeheadu.ca.

MY CONSENT:

I agree to the following:

- ✓ I have read and understand the information contained in the Information Letter
- ✓ I agree to participate
- ✓ I understand the risks and benefits to the study
- ✓ That I am a volunteer and can discontinue the study at any time, and may choose not to answer any question
- ✓ I acknowledge that I cannot withdraw my data due to the anonymous nature of the study
- ✓ That the data will be securely stored at Lakehead University for a minimum period of 5 years following completion of the research project
- ✓ I understand that the research findings will be made available to me upon request
- ✓ I will remain anonymous
- ✓ All of my questions have been answered

By consenting to participate, I have not waived any rights to legal recourse in the event of research-related harm.

*I have read and agree to the above information and consent to proceed to the online survey
[INSERT LINK]*

Appendix M**Debriefing Page**

Faculty of Health and Behavioural Sciences
Department of Psychology

Thank you for participating in the study, “Personal Strengths and Well-Being”! The purpose of this study is to identify relationships between factors relating to personal areas of strength in one’s life, well-being, mental health, and stress. Research in youth under the age of 18 has shown that psychosocial strengths are often associated with increased mental health and positive emotional experiences, and lower levels of mental illness, stress, and negative emotional experiences. With this study, we aim to extend this strengths framework into the developmental stage of emerging adulthood and provide a research basis for discussing psychosocial strengths in the context of undergraduate student life.

Should you have any questions regarding the study or its final results, please feel free to contact the research team.

Principal Investigator: Jane Harder, B. A. Hons. (Master’s student, Lakehead University)

Supervisor: Dr. Edward Rawana, PhD, C.Psych

If you experience any distress or discomfort following your participation in this study, mental health services can be accessed on campus at the Student Health and Wellness Centre (Tel: 807-343-8361) or through the Good2Talk Student Hotline (Tel: 1-866-925-5454)