THESIS

THE SOCIAL AND EMOTIONAL RESOURCES INVENTORY: FURTHER DEVELOPMENT OF A COMPREHENSIVE SELF-REPORT MEASURE OF PROTECTIVE FACTORS

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ABSTRACT

THE SOCIAL AND EMOTIONAL RESOURCES INVENTORY: FURTHER DEVELOPMENT OF A COMPREHENSIVE SELF-REPORT MEASURE OF PROTECTIVE FACTORS

Historically, childhood trauma has been associated with a variety of negative life outcomes including poor emotional adjustment in adulthood, low educational and professional attainment, and all manner of psychopathology. However, more recent research has noted that the majority of individuals with histories of childhood trauma adapt quite successfully to adulthood and live happy and productive lives. Researchers now recognize that the presence of certain protective environmental and personal factors can improve how children cope with obstacles presented by histories of trauma. By identifying these factors, researchers can help clinicians, social justice advocates and others take a pro-active approach, as opposed to a reactive approach, to reducing the negative effects of childhood trauma. There currently exists no highly comprehensive measure of protective factors. This study aimed to finalize the Social Emotional Resources Inventory (SERI) - a comprehensive measure of protective factors - by revising the SERI where necessary and providing previously lacking estimates of convergent and discriminant evidence. The final SERI was considered to be a good fit for the data. The final SERI consists of 55 items, grouped into 14 factors, which may be hierarchically grouped into second and third-order factors if necessary. The results of this SERI administration demonstrated acceptable test-retest reliability and convergent/discriminant evidence across most sub-scales.

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Introduction

Childhood trauma can be defined as trauma experienced as a result of childhood emotional, physical, and/or sexual abuse (Ballard et al., 2015), as well as from disasters, community or domestic violence, war or civil conflict, the death of a loved one, or another such impactful event or series of events (Putnam, 1996). Historically, childhood trauma has been associated with a variety of negative life outcomes including poor emotional adjustment in adulthood, low educational and professional attainment, and all manner of psychopathology (Becker-Lausen, Sanders, & Chinsky 1995, Ballard et al., 2015). Trauma has been related with increased incidence and severity of bipolar disorder (Anand et al., 2015), obsessive-compulsive disorder (Fontanelle et al., 2007), schizophrenia (Álvarez et al., 2015), and substance use disorders (Schäfer et al., 2010). In addition to these psychological and social effects, a large and expanding body of research shows that trauma has been related to diminished physical health and distinct negative effects on the development and neurological make-up of the brain itself (Chalavi et al., 2015, Lochner et al., 2007). In general, psychological research paints a bleak picture for anyone with a history of trauma.

Resiliency Research

In the 1970's, however, an important new vein of research on trauma emerged. Researchers began to realize that, while individuals with a history of trauma are at an increased risk for negative life outcomes and poor adjustment to adulthood, the majority of individuals with histories of childhood trauma adapt quite successfully to adulthood and live happy and productive lives. This ability to succeed in life despite childhood trauma has become known as resiliency, and research on resiliency has become its own sub-field of trauma research (Tlapek, 2017). Of particular influence has been the work of Ann Masten. Masten's work, summarized in

her book *Ordinary magic: Resilience in development* (Masten, 2014), gives insight into existing research on the everyday supports and factors in children's lives that help them to develop resiliency. These factors that promote resiliency have been termed "protective factors," while factors that increase the likelihood of negative life outcomes in adulthood have been termed "risk factors." There are three important types of protective factors that Masten describes: individual, familial, and communal protective factors. Individual protective factors are internal aspects of childhood trauma survivors that make them more likely to successfully adapt to adolescent and adult life, such as optimism, intelligence, athletic ability, and coping skills. Familial protective factors are the types of family factors that increase the likelihood that a child who has experienced trauma will successfully adapt to later life. These are not characteristics of the child who has experienced trauma, but of the family that raised the child. Familial protective factors include parent supportiveness, and strong connections between parents and children. Communal protective factors are also important protective factors, separate from the individual characteristics of the child who has experienced trauma and from the protective factors of the family. These characteristics of a supportive community include good schools and positive adult role models (who are not related to the child). Each of these three types of protective factors has been shown to increase the likelihood that a child who has experienced trauma will be able to adapt successfully to later life (Zimmerman et al., 2013). Furthermore, these effects have been shown to be additive (Deković, 1999). That is to say, the more of any of these three types of protective factors that are present in a child's life, the higher the likelihood that a child will be resilient to trauma. Although various measures of protective factors consider different factors to be important, factors from each of these three domains have consistently been found to relate to better life outcomes, indicating that none of the three categories can be ignored.

A formal definition of resiliency is "the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances" (Masten, Best, & Garmezy, 1990). A resilient individual would be characterized as a person who is emotionally healthy and has been able to successfully cope with obstacles, setbacks and life challenges (Short & Russel-Mayhew, 2009). Research in this field generally focuses on those children who have faced an unusually large number of obstacles to healthy development (i.e., those who have experienced trauma). It further focuses on those individuals who are able to experience success in life and overcome the disadvantages of their upbringing.

Research on resilient individuals, and on the factors that allowed them to succeed where traditional trauma research predicted that they would fail, increased dramatically during the 1970's (Anthony, 1974; Garmezy, 1974). Before this shift, the field of trauma-related intervention research was dominated by the problem-focused model, which focused on identifying risk factors for pathology following early-childhood traumatic experiences and attempting to eliminate them (Leffert et al., 1998). The important shift that came in the 1970's was the recognition that successful adaptation to trauma was associated with more than just the absence of risk factors. Instead, researchers and clinicians began to realize that the presence of certain protective environmental and personal factors could improve how children coped with obstacles presented by histories of trauma (Short & Russel-Mayhew, 2009).

The most prominent model that has been developed to describe these protective factors that promote resiliency is the Developmental Assets Framework. This framework, developed under the direction of Peter Benson at The Search Institute, identifies 40 developmental assets that are shown to contribute to a child developing successfully despite obstacles and disadvantages across a sample of 350,000 youth from over 600 communities (Benson, 1997).

The initial 40 assets, which were divided into 20 internal and 20 external assets, were the first major attempt to identify characteristics associated with resiliency. Internal and external assets were further subdivided into groups of four to six assets each related to a central theme. The themes for internal assets included Commitment to Learning, Positive Values, Social Competencies, and Positive Identity. The themes for external assets were Support, Empowerment, Boundaries and Expectations, and Constructive Use of Time. The external assets relating to Empowerment and Constructive Use of Time involved community-oriented items such as "youth being valued in the community" and "involvement in youth programs". External assets related to Support and Boundaries and Expectations, meanwhile, involved more family-oriented items such as "family support" and "high parental expectations". These groupings laid the groundwork for the current taxonomy of protective factors into the domains of individual, familial, and communal protective factors (Scales et al., 2006). This general framework is still in use today. The idea behind this classification of protective factors into the three domains of individual, familial, and communal forces, and behind other attempts to quantify protective factors, is the need to identify environmental and personal factors associated with the likelihood that a child will succeed in the face of trauma.

By identifying factors that help traumatized individuals to adapt to adulthood, while preventing the development of severe psychopathology, researchers can help clinicians, social justice advocates and others take a pro-active approach, as opposed to a reactive approach, to reducing the negative effects of childhood trauma. Instead of simply trying to reduce symptoms or cure psychopathology resulting from histories of childhood trauma, as the problem-focused model did; identifying protective factors is the first step toward preventing these problems from occurring in the first place. Once identification is accomplished, strategies can be implemented

to increase the presence of these protective factors in the lives of youth (i.e., focusing on building the motivation for achievement, connecting youth with positive adult role models). However, in order to identify protective factors there needs to exist a comprehensive measure of which protective factors youth possess, and sufficient research to help clinicians understand the extent to which these protective factors promote healthy adjustment to adulthood and decrease the likelihood of the development of psychopathology (Hjemdal, 2007).

Measuring Protective Factors

There have been previous attempts to measure protective factors in a variety of populations, but there currently exists no highly comprehensive measure of protective factors for use with a college population (Mohr, 2012). What do exist are some scales for individual protective factors that have produced scores with reasonable validity and internal consistency reliability on samples of their target population. There also exist similarly supported scales for measuring family protective factors, as well as a few scales that have produced near-acceptable internal consistency reliability that measure both family and community protective factors. A few scales have attempted to cover both individual and familial protective factors; however, these tend to be neither generalizable beyond specific populations nor are they very comprehensive. Each of these scales has made important contributions to the research on protective factors, but there are still gaps in the research which need to be filled. The major scales that attempt to measure protective factors associated with resiliency are outlined below. (For the most recent full review of resiliency scales see Pangallo et al., 2015).

Baruth Protective Factors Inventory (BPFI; Baruth & Carroll, 2002). The BPFI is a 16-item self-administered instrument designed to measure four protective factors: adaptable personality, supportive environments, fewer stressors and compensating experiences. Items are

rated on a five point Likert-type scale and the instrument also includes several reverse scored items. Although reliability and validity need further testing, the authors report Cronbach's alpha for the total scale (.83), and each sub-scale: adaptive personality (.76), supportive environments (.98), fewer stressors (.55), and compensating experiences (.83). The scale is brief and measures both internal and environmental factors. However, it has several significant limitations. The first is that it only looks at four protective factors and fails to take into account several other important protective factors that may contribute to resilience. The second is that there are both internal and environmental items within some of the four factors, leading to confusing interpretations. Third, it was only validated on a sample of 98 college students. Finally, there are no applications of this scale in the published literature, suggesting that the instrument's limitations may be a barrier for its use in research.

Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003). The CD-RISC is a 25-item self-administered instrument designed to measure resilience, with the total score on the scale being an indicator of the resilience of an individual. The scale was initially reported to include five atheoretical sub-factors which were added after EFA analyses indicated five factors with eigenvalues greater than 1. However, later studies failed to replicate these factors, and so the authors have advised that they not be considered when scoring the CD-RISC. Items are rated on a five-point Likert-type scale with higher scores reflecting greater resilience. Cronbach's alpha for the full scale is estimated to be .89. Convergent evidence is provided by positive correlations with hardiness measures (e.g., Kobasa hardiness measure) and negative correlations with stress measures (e.g., Perceived Stress Scale). The CD-RISC has been tested in both the general population and clinical settings and is commonly used in the literature.

However, the scale mainly includes questions related to internal attributes such as "ability to adapt to change" and "ability to take control of one's own life" when determining resilience.

Resilience Scale for Adults (RSA; Friborg et al., 2003). The RSA is a 33-item self-administered instrument designed to measure protective factors that contribute to adult resilience. Items are rated on a 5-point scale, and the instrument measures six factors: positive perception of self, positive perception of future, social competence, structured style, family cohesion, and social resources. Cronbach's alpha estimates for the full scale range from .67 to .90 and test-retest reliability estimates (four months) range from .69 to .84. Convergent evidence is provided by positive correlations between sub-scales of the RSA and of the Sense of Coherence Scale ranging from .29 to .75 whereas discriminant evidence is provided by negative correlations between sub-scales of the RSA and of the Hopkins Symptom Check List-25 ranging from -.19 to -.61. Although the scale has produced scores with adequate reliability and validity, it was developed and tested on adults in Norway, therefore limiting its generalizability. The scale has since been validated in Italy (Capanna et al., 2015) and Brazil (Hjemdal et al., 2015) but has yet to be validated in the US. The scale is also not meant for use with child or adolescent populations.

Adolescent Resilience Scale (Oshio et al., 2002). The Adolescent Resilience Scale for college-age youth is a 21-item self-administered instrument designed to measure three protective factors that contribute to resilience in adolescents: novelty seeking, emotional regulation, and positive future orientation. Cronbach's alpha estimates range from .72 to .75 and convergent and discriminant evidence are provided by positive correlations between the Adolescent Resilience Scale and self-esteem measures and negative correlations between the Adolescent Resilience Scale and negative life events. Despite producing scores with adequate reliability and validity,

the scale was designed and developed using Japanese adolescents, limiting the generalizability of the instrument to the American population.

Resilience Scale for Children and Adolescents (RSCA; Prince-Embury, 2008). The RSCA is a 64-item self-administered instrument developed for use in preventive screening for psychological vulnerability. The RSCA consists of three sub-scales: Sense of Mastery, Sense of Relatedness, and Emotional Reactivity. Each sub-scale is rated on a 5-point Likert scale, with higher scores equating to higher Sense of Mastery and Sense of Relatedness, and lower Emotional Reactivity. The scale has been validated across several large samples of children and adolescents and produced scores with good reliability, with a Cronbach's alpha estimate of .95 and a test-retest reliability of .87. However, this scale, despite its considerable length, only measures individual protective factors.

Brief Resilient Coping Scale (BRCS; Sinclair & Wallston, 2004). The BRCS is a 4-item self-administered instrument designed to measure tendencies to cope with stress adaptively. The BRCS uses a 5-point rating scale, and because of its brevity, meets only minimum standards for reliability and validity. The authors report that Cronbach's alpha estimates are acceptable, ranging from .69 to .76. Although this instrument is easily administered, it is limited in its scope and the richness of information it provides.

Resilience Scale (RS; Wagnild & Young, 1993). The RS is a 25-item self-administered instrument designed to measure two protective factors that contribute to resilience: personal competence and acceptance of life and self. Cronbach's alpha for the full scale is estimated to be .91. Convergent evidence for the RS is provided by positive correlations between the RS and life satisfaction and physical health. Discriminant evidence is provided by negative correlations between the RS and measures of depression. However, the initial wording of the items was

compiled from a qualitative investigation of women. Therefore, items may be gender biased, and more research on the item wording needs to be conducted before the scale can be generalized and used with men. Additionally, the scale only measures individual protective factors.

Resilience in Midlife Scale (RIM; Ryan & Caltabiano, 2009). The RIM is a 25-item, self-administered instrument designed to measure five factors: self-efficacy, family/social networks, perseverance, internal locus of control, and coping and adaptation. The original study showed acceptable internal consistency reliability, with a coefficient alpha estimate of .87. It largely measures individual protective factors, with a brief section on family and community protective factors, however it has limitations to generalizability. It was validated on a small sample (n=130) of Australian men and women age 35-60. This makes it the only resilience scale validated for a middle-age population, however it also means that it is only intended for use in a middle-age population. Furthermore, these results are yet to be replicated and it is yet to be shown if the scale can be generalized to a United States population.

Individual Protective Factors Index (IPFI; Springer & Phillips, 1995). The IPFI is a 71-item self-administered instrument designed to measure individual protective factors that contribute to resilience. The instrument consists of 10 sub-scales: Control, Self-Efficacy, Self-Control, Positive Outlook, Self-Concept, Self-Confidence, Presence of Caring, Conflict Resolution, Cooperation, and Family Bonding. The median coefficient alpha estimate for the sub-scales was .58. The coefficient alpha estimate for the total scale was .93. The IPFI is primarily used to evaluate prevention programs. Although the scale is widely used in prevention research, it includes very few items assessing family and community protective factors.

Inventory of Family Protective Factors (IFPF; Gardner et al., 2008). The IFPF is a 16-item self-administered instrument designed to assess what protective factors contribute most to

family resilience (Appendix B). Participants are asked to rate each protective factor on a 5-point Likert-type scale ranging from "Not at all like my family" to "Almost always like my family", with 5 indicating a high degree of the protective factor. The IFPF is composed of four family protective scales: fewer stressors, adaptive appraisal, social support, and compensating experiences. Fewer stressors refers to a family's experience of having more positive experiences than problems in areas such as health and finances. Adaptive appraisal refers to a family's belief system, specifically with regards to optimism and resourcefulness. Social support refers to a family's networks, such as extended family/friends. Finally, compensating experiences refers to a family's experience of control within the context of adversity. A total score for the scale is derived from the mean of all 16 items, after reverse scoring appropriate items. Cronbach's alpha estimates for the full-scale range from .77 to .87 in the literature. This scale was included in the current study to establish convergent evidence for the SERI Family sub-scale. In the present study the Cronbach's alpha for the full-scale IFPF was .91. This scale has been shown to produce scores with good reliability and it was predicted that it would correlate moderately to strongly with the "Family" sub-scale of the SERI. However, it does not measure individual or communal protective factors, and so it was predicted that it would correlate less strongly with the "Individual" and "Community" sub-scales of the SERI.

The Response to Stressful Experiences Scale (RSES; Johnson et al., 2011). The RSES is a 22-item self-administered scale validated with a sample of active duty and reserve military personnel and intended for use with a military population (Appendix C). The RSES focuses on how an individual responds both during and after stressful events and provides a relatively comprehensive measure of individual protective factors. Items are rated on a 5-point Likert-type scale where 0 is "not at all like me" and 4 is "exactly like me." Seven day test-retest reliability is

estimated to be .87 and the authors also provide convergent and discriminant evidence (e.g., by correlations between the RSES the CD-RISC and the RESES and PTSD symptoms). The initial authors found Cronbach's alpha estimates between .91-.93. In the present study, the Cronbach's alpha for the RSES was .92. This scale shows good psychometric properties and a high correlation with the CD-RISC (a measure of individual protective factors meant for use in a broader population). However, the scale fails to address familial and communal protective factors and is not generalizable beyond the military population. This scale was included in the current study to establish convergent evidence for the SERI Individual sub-scale. This scale's individual focus led to the prediction that it would correlate more strongly with the SERI "Individual" sub-scale and less strongly with the "Community" and "Family" sub-scales of the SERI.

The Protective Factors Survey (PFS; Counts et al., 2010). The PFS is a 22-item self-administered instrument designed to measure protective factors that contribute to resilience (Appendix D). The PFS has four sub-scales: family functioning, nurturing and attachment, emotional support, and concrete support, with reported coefficient alpha estimates for all of the sub-scales except for concrete support above .80 (.94, .90, and .86 respectively, .63 for CS). The authors also report convergent and discriminant evidence through positive and negative correlations with measures of social support and child abuse respectively. In the current study the Cronbach's alpha value for emotional support was .87. The Cronbach's alpha value for concrete support was .68. The PFS demonstrated marginally acceptable psychometrics as a measure of familial and communal protective factors. However, it does not include measures of individual protective factors. Additionally, it was designed specifically to assist family support and child abuse prevention programs, and thus the protective factors included are those that specifically

guard against abuse and neglect. Although this is useful, it still leaves a need for a comprehensive measure of protective factors that is not specific to this certain population. This scale was included in the current study to establish convergent evidence for the SERI "Community" sub-scale. For the purposes of the current study, only the scales of emotional support and concrete support were used. These sub-scales measure community protective factors and were predicted to correlate moderately to strongly with the "Community" sub-scale of the SERI and less strongly with the "Individual" and "Family" sub-scales of the SERI.

Initial Formulation of the SERI

All of these existing scales serve a useful function in the attempt to measure protective factors associated with resilience. However, there is an important gap left in this literature. None of the existing scales provide a comprehensive measure of individual, familial, and communal protective factors for college students. This is an important gap, because research has shown each of these three types of protective factors to be important to consider when attempting to understand the resiliency or vulnerability of a specific individual. Additionally, college is a time when many individuals have their ideologies, beliefs about themselves, abilities, and coping resources tested in new and difficult ways. Assessing what protective factors exist in these individuals' lives may be an important way to increase retention and ensure that students from trauma backgrounds have the resources to succeed in a college setting. In order to make an assessment of the resiliency of an individual, it is important to take all factors known to relate to resiliency into account. While this can theoretically be done for college students by using some combination of the existing resilience scales, it would be much more useful to practitioners if a single scale could comprehensively measure the variety of known protective factors. The Social Emotional Resources Inventory (SERI) is a tool that was designed to meet this need by assessing

individual, familial, and communal protective factors in a way that could be applicable to a college population. This assessment is designed to be a broad measure that can provide researchers, clinicians, and administrators with information about the entire range of protective factors that might be important to consider when working with and assessing individuals with histories of trauma.

The existing version of the SERI was developed by Danielle Mohr (Mohr, 2012) following the 7-step process of Loevinger (1957). Participants responded to items regarding the presence of a variety of protective factors. Participant responses were measured using 5-point Likert scales ranging from "Very Inaccurate" to "Very Accurate." An Exploratory Factor Analysis (EFA) and a Confirmatory Factor Analysis (CFA) determined the best fit was a 12-factor model consisting of 50 items (Appendix A). The final 12 protective factors included in the initial version of the SERI were: Intelligence, Parenting Practices, Self-Esteem, Money, Faith, Talent, Good Schools, Prosocial Adults, Kin Connections, Prosocial Organizations, Parent Connections, and Resources. All items had strong loadings (above .70) onto their respective factors except for one item in the "Resources" sub-scale (0.62). All sub-scales produced results with strong estimates of internal consistency reliability, with Cronbach's alpha values above .88, except the Resources sub-scale (.84). When discussing the final factor structure of the model, Mohr (2012) noted that, while sub-scales of coping and optimism were dropped from the scale due to poor fit, improved coping and optimism items should be tested for fit with the model as these were still believed to be important protective factors. The author also called for further validity evidence (specifically convergent and discriminant), which was not examined in the original study.

Current Study

The previous study by Mohr (2012) laid an excellent framework for the SERI. However, it did not fully prepare the SERI to be published as a usable scale. The current study aimed to complete the work started by Mohr (2012) and to finalize the SERI by replicating the results of Mohr (2012) on a new sample, revising the SERI where necessary, and providing previously lacking convergent and discriminant evidence.

It was important that a CFA be performed on a new sample for the SERI, as the previous CFA was conducted on the same sample on which the EFA was conducted, which caused some methodological concerns for the interpretability of the results of the CFA (Raykov & Marcoulides, 2011). It is also important for the psychometric properties of any measure to be tested on more than one sample, to reduce the probability of erroneous results being produced by the characteristics of the sample on which the measure was tested.

One issue that had been raised through consultation with Subject Matter Experts (SMEs) was the names of some of the factors identified by Mohr (2012). One revision to the SERI made during this study was to alter the names of factors to ensure they accurately capture what the items within the factor are measuring. Accordingly, the sub-scales of "Intelligence" and "Talent" were re-named "Perceived Intelligence" and "Perceived Talent" as they are subjective measures of a participant's own views on their intelligence and talents, as opposed to objective measures of intelligence and talent themselves. "Parenting Practices" was renamed "Positive Parenting Practices" to facilitate interpretation of this sub-scale; as higher scores on this sub-scale equate to better parenting and imply higher levels of resiliency in this area. Finally, "Money" was renamed "Financial Resources" in order to more fully capture the construct that this scale is attempting to measure.

Another important adjustment to the earlier version of the SERI was revising the "Resources" sub-scale. This scale had the lowest alpha and the poorest model-fit of the previous 12 factors. After consulting with SMEs, it was determined that this scale more accurately assesses "Access to Healthcare." Accordingly, this sub-scale was renamed and the one item that previously fit poorly with this construct was dropped and new items were written to replace it. These items were examined in the output of the CFAs and those that demonstrated good fit are included in the final version of the SERI. These changes were made in order to increase the overall reliability and interpretability of the SERI.

A final revision to the SERI was the addition of new sub-scales of "Coping" and "Optimism". These are two constructs that have been found to be important in multiple resiliency studies (Masten, 2014), and the SERI cannot be considered a comprehensive measure without them. These items were also generated with the consultation of SMEs and were examined in the CFA output. Items that were found to fit the model well were kept in the final version of the SERI. Adding these two sub-scales to the SERI should increase the utility of this measure as an estimation of resiliency for both research and practical purposes.

Once the CFA was run on the final version of the SERI, it was important to establish reliability evidence for the SERI. Reliability refers to the precision of results obtained by a scale. A scale that precisely measures the same construct across both people and time would demonstrate reliability across those administrations. There are several different types of reliability that a scale can demonstrate. Two important ones that the SERI was tested for are internal consistency reliability and test-retest reliability. Internal consistency reliability refers to a scale's consistency with itself. If the items within a scale correlate highly with each other, that scale is considered internally consistent. This means that it is likely that the different questions

within the scale are measuring the same construct. A widely-used measure of internal consistency reliability that was used in this study is Cronbach's coefficient alpha (Santos, 1999). Test-retest reliability refers to how consistently the same participants score on a measure over time. If a measure demonstrates good test-retest reliability for a target sample it suggests that there is some level of consistency of the construct within the target population. In order to test this type of reliability, the same test is administered to the same participants at two different points in time, and the two scores are correlated. For the SERI, two-week test-retest reliability was examined, to ensure that participants' responses regarding their own experiences growing up did not change significantly over time. Low test-retest reliability for a retrospective measure like the SERI may indicate an inability to recall information about childhood.

Finally, convergent and discriminant evidence were important to establish for the SERI within a sample of college students. Both convergent and discriminant evidence are types of evidence based on relations with other variables. Such evidence is part of the overall validity evidence that suggests that a scale measures what it is intending to measure within its target population. A scale cannot be considered to produce valid, useful scores within a specific population unless it is measuring what it intends to measure. Showing that a scale correlates highly with scales that are meant to measure the same construct, and that it does not correlate highly with scales that are meant to measure disparate constructs, is one of the most widely accepted methods for providing evidence of validity (Cronbach & Meehl, 1955). A scale that has good convergent evidence is doing at least approximately as well as other scales in the field at measuring a specific construct; and a scale with good discriminant evidence is not just measuring some general construct that may be applicable to many scales.

Method

Participants

Data were initially collected on 720 participants. The sample consisted of undergraduate college students at a large, public university in the Western, U.S. who electronically accessed the survey via the General Psychology course research pool for extra course credit. The data were "cleaned" by removing participants who had completed <90% of the survey, participants who appeared to be entering in numbers so quickly that it was highly unlikely that they read the question (as evidenced by their response patterns and time taken to complete the survey), participants who had multiple submissions under the same participant ID, and participants who only entered the same response across all questions or who entered the same response for both regularly scored and reverse scored versions of multiple questions. The fastest 56 participants (participants who took less than 10 minutes to complete all included measures) were chosen to have their responses looked at in their entirety, as their response times clearly fell on the extreme of the distribution for the time taken to complete the survey, far outside of the average range of response times. Of these 56 individuals, those who were deemed to be responding so fast as to preclude their ability to actually read and respond with any thought to the questions being asked, as evidenced by any of the unusual response patterns listed above, were omitted from the analysis. After the data were cleaned, 602 participants were included in the majority of data analyses. For data collection at Time 2, 563 responses were initially collected, with 471 responses that corresponded to an individual who had completed the survey at Time 1 being included for the test-retest reliability analysis. Although there was a number of participants who were not included in the final analyses, there are no established cutoffs in psychology for how much missing data is acceptable (Fox-Wasylyshyn & El-Masri, 2005) and the CFA using 602 participants still could be expected to have enough power to draw statistically significant

conclusions from the data (Muthén & Muthén, 2002). Additionally, it has been shown that the pattern of missing data is more important than the amount of missing data (Tabachnick & Fidell, 2001). To explore the pattern of missing data in this dataset, a Missing Values Analysis (MVA) was conducted comparing the original dataset to the final cleaned dataset. The MVA of the original 720 responses using the Expectation-Maximization (EM) method (Little, 1988) revealed that values were not Missing Completely at Random (MCAR; $\chi^2(6337.28) = 5481$, $p = .000$). This suggests that of the original 720 responses, there was some pattern to which questions were skipped. An MVA analysis using the EM method (Little, 1998) on the final dataset of 602 responses indicated that values were Missing Completely at Random (MCAR; $\chi^2(4250.29) = 4113$, $p = .066$). This suggests that there was no systematic bias to the missing values included in the final dataset, and that the cleaning process successfully eliminated systematic biases in the participants' response patterns that had been originally present in the data. Bias may have been removed during the cleaning process by removing participants who did not answer questions in the later part of the survey or in specific assessment measures. In order to ensure that participants were not more likely to leave questions systematically unanswered, and thus be removed from the final dataset, based on any demographic variable; comparative analyses were run on key demographic variables between the group that was included in final analyses and the group that was excluded. An independent samples t-test was conducted to determine if there were significant differences in age between participants included in the final analyses for the SERI and those who were excluded during the cleaning process. The age of included participants (M=18.77, SD=1.82) did not differ significantly from the age of excluded participants (M=18.81, SD=1.57), $t(547)$=-.168, p=.805. Chi-Square tests were conducted to determine if there were any significant differences in gender, year in school, or race/ethnicity between the included and

excluded participants. Chi-Square results indicated no significant differences in gender between the included and excluded participants ($\chi^2(3, N = 83) = 1.38, p = .71$); nor in year in school ($\chi^2(9, N = 83) = 5.87, p = .75$); nor in race ($\chi^2(32, N = 83) = 14.70, p = .99$). Thus, it does not appear that questions were systematically left unanswered due to demographic variables and it does not appear that participants were more likely to be removed from the final dataset due to any key demographic variables.

The mean age of the sample included in data analyses was 18.77 years (*SD*=1.82). The sample consisted of 114 men (18.9%), 484 women (80.4%), one individual who identified as transgender (0.2%), and two individuals who identified as other (0.3%). The sample included 400 first year students (66.7%), 135 second year students (22.5%), 41 third year students (6.8%), and 24 fourth year students (4.0%). Out of the sample, 468 participants (77.7%) identified as White/Caucasian, 64 identified as Latino or Hispanic (10.6%), 26 identified as Asian American (4.3%), 21 identified as African American/Black (3.5%), 1 identified as American Indian/Native American (<0.1%), and 21 identified as Other (3.7%). In this sample, 534 participants identified as heterosexual (89.1%). On the Childhood Maltreatment Questionnaire-Abuse (CMQ-A) and Childhood Maltreatment Questionnaire-Neglect (CMQ-N), 167 participants responded “Often” or “Very Often” to at least one item regarding childhood abuse or neglect (28%), while 100 participants responded “Often” or “Very Often” to multiple items regarding childhood abuse or neglect (17%). Out of the sample, 546 participants endorsed at least one item on the Trauma History Questionnaire (THQ) (91%), which measures a broad range of potentially traumatic experiences. This sample overrepresented females in comparison to the CSU population in general (51% female) as well as the incoming freshman class from which the sample was largely drawn (54% female).

Modification of the SERI

The original SERI (Mohr, 2012) was expanded to include items regarding the factors of "Coping" and "Optimism". Following the process outlined by Loevinger (1957), theoretically-based item pools were written, SMEs were consulted, and the new items were administered to all participants. Additionally, factor loadings for the previous 12-factor model were re-examined and new items were written to replace items with weak loadings following this same 7-step process. CFAs were run to determine model fit and to further verify the original findings of Mohr (2012). Cronbach's coefficient alpha was calculated for each factor and for the total score of the measure to assess internal consistency reliability for the current sample. In order to assess the results for convergent evidence, the Inventory of Family Protective Factors (IFPF), the Response to Stressful Experiences Scale (RSES), and a shortened version of the Protective Factors Survey (PFS) were also administered to participants. Additionally, the College Adjustment Questionnaire (CAQ), The Childhood Maltreatment Questionnaire for Abuse (CMQ-A) and Neglect (CMQ-N), and the Trauma History Questionnaire were administered to participants to provide the opportunity to examine relationships between early life trauma; individual, familial, and communal protective factors; and successful adjustment to college. Information from the CAQ, CMQ-A and CMQ-N will be utilized to provide evidence of the criterion validity (the extent to which a measure is related to an outcome) of the SERI in follow-up studies.

Measures

The College Adjustment Questionnaire

The College Adjustment Questionnaire (CAQ; O'Donnell et al., 2018) is composed of 14 items and is divided into three sub-scales: Educational Functioning, Relational Functioning, and Psychological Functioning (Appendix E). Respondents are asked to rate "how true" items about college experiences are for them "at this time". Response choices are measured using a 5-point Likert scale. The Educational Functioning scale includes questions involving an individual's ability to meet educational demands and their motivation for learning. The Relational Functioning scale focuses on the social aspect of college. This scale includes questions involving interpersonal relationships and relationship satisfaction. The Psychological Functioning scale focuses on the emotional and psychological experiences of the student. This scale includes questions pertaining to how successful participants have been at coping with the unique stresses of undergraduate life. In a sample of college students, Cronbach's coefficient alphas for the sub-scales were 0.89, 0.84, and 0.78, for the Educational Functioning, Relational Functioning, and Psychological Functioning sub-scales respectively (O'Donnell et al., 2018). Cronbach's alpha estimates for the full scale range from .83-0.89. In the current study, the Cronbach's alpha estimate for the educational functioning sub-scale was .92, for the relational functioning sub-scale was .84, and for the psychological functioning sub-scale was .82. Cronbach's alpha for the full scale was.88 in the current study.

The Trauma History Survey

The Trauma History Survey (THS; Mohr & Rosén, 2015) is composed of 10 questions taken from Triplett et al.'s (2011) research on trauma history and meaning in life in college

students. The scale assesses the presence, severity (on a 0-4 scale ranging from "not at all" to "extreme"), frequency, and recency of traumatic experiences (Appendix F). The ten experiences included are "death of a close loved one," "very serious medical problem," "close friend, significant other, or family member experienced a serious medical condition," "accident that led to serious injury to yourself or someone close to you," "place of residence being damaged by fire or other natural causes," "endured a divorce," "physically assaulted," "sexually assaulted," "victim of a crime such as robbery or mugging," and "being stalked." Items are single questions relating to each trauma area and thus internal reliability analyses are not available.

The Childhood Maltreatment Questionnaire-Abuse and Neglect

The Childhood Maltreatment Questionnaires-Abuse (CMQ; Shirley & Rosén, 2010) consists of 19 items across four sub-scales: sexual abuse, physical abuse, emotional abuse, and love (Appendix G). Respondents were presented with specific experiences in childhood and adolescence that were considered to be indicative of maltreatment. Participants then rated the frequency of occurrence of these situations, ranging from 0 (never) to 4 (very often). Shirley & Rosén (2010) also reported internal consistency reliability from a previous sample. Cronbach's alphas from the previous sample of college students were .93, .89, .84, and .80 for the sexual abuse, physical abuse, emotional abuse, and love sub-scales respectively. According to Shirley and Rosén (2010), in a sample of college students the CMQ-Abuse Scale (CMQ-A) demonstrated good convergent and discriminant validity evidence. Cronbach's alpha for the CMQ-A total score in that sample was .95. The CMQ-Neglect scale (CMQ-N) consists of 16 items and four sub-scales: emotional neglect, physical neglect, supervision neglect, and love (Appendix H). Shirley & Rosén (2010) also reported internal consistency reliability from a previous sample. Cronbach's alphas from the previous sample of college students were .91, .81,

.85 and .80 respectively. Cronbach's alpha for the CMQ-N total score in that sample was estimated to be .86. In the present study, Cronbach's alpha estimate for the CMQ-A sub-scale of sexual abuse was .92, for the physical abuse sub-scale was .87, for the emotional abuse sub-scale was .89, and for love was .86. Within the CMQ-N the Cronbach's alpha estimate for the emotional neglect sub-scale was .93, for the physical neglect sub-scale was .80, for the supervision neglect sub-scale was .88, and for the love sub-scale was .86. In the current investigation, the full-scale Cronbach's alpha for the CMQ-A was estimated to be .92, and for the CMQ-N was estimated to be .94.

Procedure

All participants electronically received an informed consent form detailing the purpose and procedure of the study, the potential risks involved with participation in the study, and an assurance of confidentiality and anonymity. Participants then filled out a demographic questionnaire (Appendix I), followed by the SERI and the accompanying scales in order, online through Qualtrics. Participants were asked to re-take the SERI after an interval of two weeks in order to receive credit for the study. Finally, the participants received an electronic version of the debriefing form and were thanked for their participation.

The proposal for this study was submitted to the Colorado State University IRB for approval for administration to human participants and was determined to be exempt due to minimal risk to participants and the inability of participants to be identified based on their participation in the study.

Data Analysis

Data analyses included multiple CFAs, examination of convergent and discriminant evidence, and calculations of internal consistency and test-retest reliability. The purpose of the CFAs was to verify the factor structure of the SERI found by Mohr (2012). The CFAs were run in MPlus to examine the proposed 14-factor model as well as the possibility of a hierarchical three-level factor model in which a single "Protective" factor over-arches the three sub-factors of "Individual", "Family", and "Community" protective factors, which over-arches the existing 14 factors (Figure 1). In the CFA analyses, the Comparative Fit Index and the Tucker-Lewis Index (CFI & TLI) were examined, (with values above .90 indicating acceptable model fit). The Chi-Square value was compared to a model with zero fit (with values approximately three times the degrees of freedom representing reasonable model fit). The Root Mean Square Error of Approximation (RMSEA) was examined (with values <.06 indicating acceptable fit) along with the Standardized Root Mean Square Residual (SRMR) (with values <.08 indicating acceptable fit). Finally, the individual loadings of each item on each factor were examined (with factor loadings above .5 considered acceptable). For any of these values that were lower than their respective cutoffs, using the above cutoffs determined by Hu and Bentler (1999), the discrepancy matrix of the inter-item correlations was examined. This involved examining any items that were more or less correlated with other items within the same sub-scale and across sub-scales than was expected. This matrix is useful for spotting couplet items, items that did not correlate well within their sub-scales, and items with likely cross-loadings. Any item adjustments were made based on the factor loadings of items, item discriminations, inter-item discrepancies, and theoretical considerations.

After running the final CFA to confirm that the SERI had good model fit, Cronbach's alpha was calculated to estimate internal consistency reliability. An acceptable Cronbach's alpha statistic is considered to be .80 or higher. A strong Cronbach's alpha is considered .90 or higher (Cortina, 1993).

Finally, responses on the "Individual", "Family", and "Community" sub-scales of the SERI were correlated with the Response to Stressful Experiences scale, the Inventory of Family Protective Factors, and the community-related sub-scales of the Protective Factors Survey, respectively. To demonstrate convergent evidence, the items in the "Individual" sub-scale of the SERI were expected to correlate highly with the Response to Stressful Experiences scale, the "Family" sub-scale was expected to correlate highly with the Inventory of Family Protective Factors, and the "Community" sub-scale was expected to correlate highly with the Protective Factors Survey (Table 1). To demonstrate discriminant evidence, each of the sub-factors was expected to correlate less strongly with the other two scales in the matrix (Table 2).

Test-retest reliability was analyzed by averaging the correlation coefficients for how individual participants responded on the SERI at the original test administration and at a follow-up administration which occurred after a period of two weeks.

Results

Item Analyses

Initial item analyses were conducted in SPSS. Descriptive statistics for the SERI were used to assess item difficulty. Item difficulty is an indication of what level of a latent construct an individual must possess in order to endorse an item. Item difficulty is represented by an item's mean, with lower means indicating more difficult items (i.e., less individuals endorsed these items strongly). It is desirable to have a mix of item difficulties, though social desirability can prevent participants from giving low ratings on certain items (DeVellis, 2012). Item difficulties ranged from 2.49 to 4.51 on a 5-point Likert scale (Table 3). Item discriminations, the correlation between the individual item's score and the total sub-scale score, were also calculated (Table 4), with more highly correlated items better predicting participants' scores on the total sub-scale. All item-sub-scale correlations were significant at a $p < .01$, with correlations ranging from .153 to .952. No items were dropped from the scale prior to factor analysis.

Initial Confirmatory Factor Analysis

To replicate the Confirmatory Factor Analysis (CFA) results found by Mohr (2012) and to test the modified "Access to Healthcare" sub-scale and the new sub-scales of "Optimism" and "Coping", an initial CFA was run on all 71 proposed items (Appendix J). A 14-factor CFA was run to support the theory that these protective factors are distinct constructs. The proposed 14 factors were "Perceived Intelligence", "Positive Parenting Practices", "Self-Esteem", "Financial Resources", "Faith", "Perceived Talent", "Good Schools", "Prosocial Adults", "Kin Connections", "Prosocial Organizations", "Parent Connections", "Access to Healthcare", "Coping", and "Optimism". All CFAs were run in MPlus, using the MPlus default of Maximum

Likelihood (ML) estimation to handle missing data. Factor loadings for the initial CFAs can be seen in Table 5.

Model fit. The model fit of the initial 14-factor CFA was marginally acceptable. The Chi Square statistic was approximately three times the degrees of freedom (χ^2 (2323) = 6034.567, p < .001) which is an initial indicator of the possibility of good model fit. The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) indicated marginally acceptable fit (CFI=.903; TLI=.896). The Root Mean Square Error of Approximation (RMSEA) was also marginally acceptable while the Standardized Root Mean Square Residual (SRMR) was acceptable (RMSEA=0.052; SRMR=.057). Together these results supported the original 14-factor model as an acceptable model. These results, for this large of a scale with several new and modified sub-scales, were extremely strong. However, they did also indicate the possibility of improvement.

Scale Revision

Scale revisions were made based on factor loadings, standardized discrepancies, item discrimination, item wording, and theoretical considerations. Scale revisions were made with the goal of producing the most parsimonious scale that retained the best fit to the data and coverage of the underlying constructs. 14 items were dropped after the initial CFA (items 2, 6, 9, 10, 16, 21, 26, 29, 34, 39, 41, 51, 61, and 62). The majority of items were dropped from the new "Coping" and "Optimism" sub-scales as well as the revised "Access to Healthcare" sub-scale, as more test items were written than were needed for these sub-scales, in order to test which items performed best. This number of dropped items was consistent with the expectation inherent in typical measure construction that the majority of the pool of test items for any new scale will be unnecessary and will be removed.

Items 10 (“I did not cope well with challenges”), 26 (“I felt like my problems were out of my control”), 39 (“I had a hard time handling stress”), and 62 (“I would put off dealing with my problems”) were dropped from the “Coping” sub-scale. Each of these items was reverse coded, and did not load well onto the sub-scale (0.678, 0.541, 0.605, and 0.459). Due to their poor performance, as well as the fact that none of the original 12 sub-scales used reverse coded items, it made sense to drop these items from the scale. Item 2 (“I thought about how to deal with my problems instead of ignoring them”) was also dropped from the “Coping” sub-scale as it had a loading below .700 (0.585) and six discrepancies with an absolute value above .1 (Raykov & Marcoulides, 2011) with other items. This item made sense to drop theoretically as it *could* be related only to dwelling on problems, and not necessarily effectively implementing any coping strategies. It also potentially functioned as a “double-barreled” item in which a participant may have agreed with part, but not all, of the item. Such items are considered undesirable in assessments as they may leave a participant unclear on whether to agree or disagree with an item.

Items 6 (“I was pessimistic”), 41 (“Things usually went wrong for me”), and 51 (“I didn’t expect good things to happen to me”) were dropped from the “Optimism” sub-scale. These were the reverse coded items on this sub-scale, and their factor loadings were significantly worse (.448, .565, and .548) than the regularly coded items on the sub-scale, which all had factor loadings above .700.

Items 21 (“My family did not have access to good healthcare”), 29 (“My family and I had access to good health services”) and 34 (“My family had access to adequate healthcare”) were dropped from the “Access to Healthcare” sub-scale, as they were redundant with other items in the sub-scale. Though their factor loadings were largely acceptable (0.666, 0.950, 0.879) they were not deemed to cover any area of the underlying construct not already covered by other

items in the sub-scale. Thus, they were dropped for parsimony. Item 9 ("I went to the dentist for check-ups at least once a year") was also dropped from the "Access to Healthcare" sub-scale as it had a poor factor loading (.634) and 13 discrepancies above .1 with other items. This item was not considered to be a central part of the underlying construct (access to healthcare), and was considered to be especially susceptible to confounds unrelated to the construct (such as the varying cultural importance of dentistry and the inability of the participant to remember the frequency of childhood dentist visits). Item 61 ('I only went to the doctor if there was an emergency") was also dropped from the "Access to Healthcare" sub-scale as it had an extremely poor factor loading (0.137).

Only one other item was dropped after the initial CFA: Item 16 ("I had an adult mentor other than my parents"), from the "Prosocial Adults" factor. This was the only item from the 11 unmodified factors retained from Mohr (2012) that had a factor loading of less than .700 (0.654). It was also one of only two items from the original 11 factors with an item discrimination below .700 (.638). Additionally, this item does not exclude extended family, and so could lead to confusion for participants about whether or not to include kin.

Confirmatory Factor Analysis on Revised SERI

The revised SERI consisted of 57 items. Items 1, 14, 25, and 54 were retained on the "Perceived Intelligence" sub-scale, items 3, 15, 43, and 57 were retained on the "Positive Parenting Practices" sub-scale, items 7, 19, 32, 45, and 63 were retained on the "Self-Esteem" sub-scale, items 24, 40, and 68 were retained on the "Financial Resources" sub-scale, items 12, 23, 27, 37, 50, and 66 were retained on the "Faith" sub-scale, items 8, 22, 35, 47, and 64 were retained on the "Perceived Talent" sub-scale, items 4, 18, 31, and 60 were retained on the "Good Schools" sub-scale, items 30, 44, and 59 were retained on the "Prosocial Adults" sub-scale, items

11, 36, 49, and 65 were retained on the "Kin Connections" sub-scale, items 42, 53, and 69 were retained on the "Prosocial Organizations" sub-scale, items 13, 28, 38, and 52 were retained on the "Parent Connections" sub-scale, items 17, 46, 48, and 56 were retained on the "Access to Healthcare" sub-scale, items 5, 55, and 71 were retained on the "Coping" sub-scale, and items 20, 33, 58, and 67 were retained on the "Optimism" sub-scale.

Model Fit. The model fit of the SERI after the proposed item drops was good. The Chi-Square value was much lower than in the original model, and was less than three times the degrees of freedom (χ^2 (1448) = 3754.126, $p < .001$). This was an initial indicator of improved model fit. The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) indicated a good fit for the revised SERI (CFI=.929; TLI=.922), both well-above the proposed cut-off value. The Root Mean Square Error of Approximation (RMSEA) showed only slight improvement while the Standardized Root Mean Square Residual (SRMR) improved more dramatically (RMSEA=0.051; SRMR=.050). Together these results supported the revisions made to the SERI, but along with examination of the new factor loadings and discrepancies, suggested further improvements to the SERI could be made.

Final Revisions

Re-examination of factor loadings, item discrepancies, item discrimination, and theoretical necessity led to two further revisions to the SERI. First, Item 17 ("When I was sick I was able to go to the doctor") was dropped from the "Access to Healthcare" sub-scale due to the remainder of an extremely high number of discrepancies (27) with an absolute value greater than .1 with other items in the scale. Additionally it was not considered to add value above and beyond what was already covered by other items such as item 48 ("I had a family doctor my family took me to"). Second, item 63 ("I viewed myself as a capable individual") was dropped

from the “Self-Esteem” sub-scale. This was the second item dropped from the original 11 scales. This was also the only remaining item from the original 11 scales with an item discrimination value below .7 (.613). This item was dropped due to its lack of discrimination, an extremely high number of discrepancies (22) with an absolute value above .1 with other items in the scale, and its relatively low factor loading (0.689).

Confirmatory Factor Analysis on the Final SERI

The final SERI was considered to be the most parsimonious model available, which best fit the data, without losing significant coverage of the underlying constructs. The final SERI consists of 55 items (Appendix L). Items 1, 14, 25, and 54 were retained on the “Perceived Intelligence” sub-scale, items 3, 15, 43, and 57 were retained on the “Positive Parenting Practices” sub-scale, items 7, 19, 32, and 45 were retained on the “Self-Esteem” sub-scale, items 24, 40, and 68 were retained on the “Financial Resources” sub-scale, items 12, 23, 27, 37, 50, and 66 were retained on the “Faith” sub-scale, items 8, 22, 35, 47, and 64 were retained on the “Perceived Talent” sub-scale, items 4, 18, 31, and 60 were retained on the “Good Schools” sub-scale, items 30, 44, and 59 were retained on the “Prosocial Adults” sub-scale, items 11, 36, 49, and 65 were retained on the “Kin Connections” sub-scale, items 42, 53, and 69 were retained on the “Prosocial Organizations” sub-scale, items 13, 28, 38, and 52 were retained on the “Parent Connections” sub-scale, items 46, 48, and 56 were retained on the “Access to Healthcare” sub-scale, items 5, 55, and 71 were retained on the “Coping” sub-scale, and items 20, 33, 58, and 67 were retained on the “Optimism” sub-scale (Appendix K). Factor loadings for the final 14-factor CFA can be seen in Table 8.

A hierarchical CFA was also run on the final SERI to test the hypothesis that the 14-factors may be hierarchically organized into three higher-order factors of “Individual”, “Family”,

and “Community” protective factors. This hypothesis was included because many papers in the field of protective factors research (Connor & Davidson, 2003; Gardner et al., 2008) treat these three types of protective factors as categorically different. In turn, the three factors of “Individual”, “Family”, and “Community” were loaded onto a single factor in order to assess whether a single, over-arching “Protective” factor may exist, which would give meaning to a total score for the SERI. The proposed three-factor and single-factor models were also run independently to examine the possibility that the 14-factor model was unnecessarily complex, and could be adequately captured by a more parsimonious model. Final factor loadings for the hierarchical model can be seen in Table 9.

Model Fit. The model fit of the final SERI was the best of any of the tested versions of the SERI. The Chi-Square value was lower than either of the previous models, and was well under the goal of being three times the degrees of freedom (χ^2 (1339) = 3272.118, $p < .001$). The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) were also an improvement over either of the previous models of the SERI (CFI=.938; TLI=.931). Once again, both were well-above the proposed cut-off value. For the final SERI, the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) both showed improvement, with both values dropping below .5 (RMSEA=0.049; SRMR=.045). Together these results supported the revisions made to the SERI, and suggested that the proposed 14-factor model is a good fit for the data.

The model fit of the hierarchical model was marginally acceptable. The Chi-Square value was higher than in the 14-factor model alone, but was still roughly three times the degrees of freedom (χ^2 (1413) = 4293.324, $p < .001$). The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) were similarly lower than in the 14-factor model (CFI=.908; TLI=.903). However,

both were still above the cutoff of .90 identified by Hu and Bentler (1999). The Root Mean Square Error of Approximation (RMSEA) was higher than in the 14-factor model, but was just under the cutoff of .06 (RMSEA=.058). The Standardized Root Mean Square Residual (SRMR), however, did not make the cutoff of .08 in the hierarchical model (SRMR=.085). Together, these results suggest that the hierarchical model does fit the data acceptably, however, the model does not fit as well as the 14-factor model alone. Implications of this level of fit for the hierarchical model are addressed in the discussion.

When run independently, the model fit for both the three-factor and single-factor models were far from acceptable. The Chi-Square value for the three-factor model was extremely high in comparison to the degrees of freedom, which is an indicator of poor model fit (χ^2 (1427) = 16588.267, $p < .001$). The CFI and TLI were both well below the cutoffs for acceptability (CFI=0.514; TLI=0.494). Likewise, the RMSEA and SRMR were both well above the cutoffs for acceptability (RMSEA=0.133; SRMR=0.120). The Chi-Square value for the single-factor model was even higher, indicating worse model fit (χ^2 (1430) = 19992.905, $p < .001$). The CFI, TLI, RMSEA, and SRMR values were also worse than in the three-factor model (CFI=0.405; TLI=0.382; RMSEA=0.147; SRMR=0.129). The results for both the three-factor and single-factor models indicated that these models did not fit the data, further supporting the more complex 14-factor model as the best fitting, most parsimonious model.

Reliability. Cronbach's coefficient alpha was used to determine internal consistency reliability for the results of the current SERI administration. Each factor in the 14-factor model had acceptable internal consistency statistics ($\alpha > .8$), with most having Cronbach's alpha values in the good range (>.9): Perceived Intelligence ($\alpha = .89$), Positive Parenting Practices ($\alpha = .92$), Self-Esteem ($\alpha = .91$), Financial Resources ($\alpha = .92$), Faith ($\alpha = .96$), Perceived Talent ($\alpha = .93$),

Good Schools (α = .90), Prosocial Adults (α = .86), Kin Connections (α = .91), Prosocial Organizations (α = .94), Parent Connections (α = .93), Access to Healthcare (α = .89), Coping (α = .81), Optimism (α = .91). Two of the three second-order factors and the one third-order factor within the hierarchical model also showed good internal consistency reliability: Individual (α = .94), Family (α = .95), Full-Scale (α = .97), while the Community factor showed acceptable internal consistency reliability (α = .87).

The test-retest reliability of the over-all scale (r=.81) was good when compared to the short-interval test-retest reliability of stable traits such as personality (acceptable r>70; good r>.80) (del Rosario & White, 2005; Jacobs, Latham, & Brown, 1988). Test-retest reliability of the sub-scales ranged from .640 for the Perceived Intelligence sub-scale to .894 for the Faith sub-scale (Table 6) for a two-week interval, providing initial support for stability of responses across time.

Convergent and Discriminant Validity Evidence

Evidence for convergent/discriminant validity was gathered by comparing the SERI sub-scales with other existing measures of protective factors. Those sub-scales relating to individual protective factors were expected to correlate most strongly with existing measures of individual protective factors, sub-scales relating to familial protective factors were expected to correlate most strongly with existing measures of familial protective factors, and sub-scales relating to communal protective factors were expected to correlate most strongly with existing sub-scales related to communal protective factors. Table 7 compares the correlations between the SERI and other measures of protective factors. Most correlations conformed with expectations, with those sub-scales thought to be most closely theoretically related correlated the most strongly. The SERI "Individual" sub-scale correlated most strongly with the Response to Stressful Experiences

Scale (RSES), a measure of individual protective factors (r=.538, p<.01), and least strongly with the community-related sub-scales of the Protective Factors Survey (PFS) (r=.105, p<.01). The SERI "Family" sub-scale correlated most strongly with the Inventory of Family Protective Factors (IFPF) (r=.602, p<.01), and less strongly with the RSES (r=.221, p<.01) and the PFS (r=.131, p<.01) One exception to this was the SERI "Community" sub-scale and the PFS, which was included as a measure of communal protective factors. Though the correlation between the "Community" sub-scale and the PFS was expected to be higher than the correlations between the "Community" sub-scale and the RSES (r=.293, p<.01) or the IFPF (r=.361, p<.01), the "Community" sub-scale and the PFS correlated extremely poorly (r=.098, p<.01). To probe the relationship further, items from the IFPF that were determined to be more community-oriented were correlated with the SERI Community sub-scale, with better results (r=.39, p<.01). Implications for convergent validity evidence are addressed in the discussion.

Discussion

The primary objective of this study was to provide further validity and reliability evidence for the use of the Social Emotional Resources Inventory (SERI) with a college population and to establish the SERI as useful and comprehensive self-report measure of protective factors associated with resiliency. The development of the SERI measure was based on a framework of resiliency laid out by Ann Masten (Masten, 2001; Masten, Best, & Garmezy, 1990). Masten's theory, based on several decades of resiliency research, states that resiliency is not simply an innate ability to "bounce back" from trauma that individuals either are or are not born with. Instead, based on her research, Masten believes that resiliency can be fostered in individuals. Masten asserted that there were certain "protective" factors that could counteract risk factors for experiencing negative life outcomes and severe pathology in the wake of trauma. Much work has been done in the area of protective factors that supports this theory, and many protective factors have been identified, starting with those identified in the Developmental Assets Framework developed by Peter Benson at The Search Institute (Benson, 1997). Importantly, it has also been shown that protective factors have an additive effect, meaning that the more protective factors that are present in an individual's life, the more likely it is that the individual will be resilient to trauma (Deković, 1999). This finding, especially, makes clear the advantages in identifying the numerous factors which exist that are associated with resiliency to trauma. In order to most effectively foster resiliency in a range of individuals with different resources available to them, it is essential that clinicians have knowledge of the large range of protective factors that may foster resiliency, and a way to measure which factors are, and are not, present in their clients' lives. The SERI was developed to meet this need for a comprehensive measure of protective factors applicable to a college population.

Earlier studies in the development the SERI (Shirley & Rosén, 2010; Mohr, 2012) compiled a list of protective factors based on previous literature and consultation with Subject Matter Experts (SMEs) and conducted Exploratory Factor Analyses (EFAs) and Confirmatory Factor Analyses (CFAs) to establish the factor structure of the SERI. Thus, the current study conducted a CFA to verify the 12-factor structure found by Mohr (2012) and to test two new factors of "Coping" and "Optimism" which Mohr (2012) had recommended as important, but for which poor model fit had been found. The proposed 14-factor structure for the current study included factors for: 1) Perceived Intelligence, 2) Positive Parenting Practices, 3) Self-Esteem, 4) Financial Resources, 5) Faith, 6) Perceived Talent, 7) Good Schools, 8) Prosocial Adults, 9) Kin Connections, 10) Prosocial Organizations, 11) Parent Connections, 12) Access to Healthcare, 13) Coping, and 14) Optimism. Additionally, the current study examined the potential hierarchical fit of these 14 factors into a 3-factor structure of 1) Individual, 2) Familial, and 3) Communal protective factors, and whether these 3 factors then loaded onto a single "Protective" factor. The three second-order factors (Individual, Familial, and Communal) were chosen because these are the most common groupings of protective factors in the literature (Gardner et al., 2008, Springer & Philips, 1995). The third-order "Protective" factor was chosen due to literature support that all protective factors increase the likelihood of resilience, which provides theoretical support for an interpretation of a "total" score for protective factors inventories (Deković, 1999).

The final 55-item SERI produced scores with good internal consistency reliability and initial support for test-retest reliability, though this was not consistent across sub-scales. "Access to Healthcare", "Good Schools", and "Perceived Intelligence" all had test-retest correlation coefficients below .7 for a two-week interval. The relatively poor test-retest coefficient for

"Perceived Intelligence" (r=.640) fits with literature suggesting that individuals' perceived intelligence may shift dramatically during college in response to mood, experiences, and changes in factors such as attitude toward college (Johanson & Vopava, 1985). The relatively low test-retest correlation for "Good Schools" (r=.649) and "Access to Healthcare" (r=.682) may be influenced by the fact that these sub-scales rely on the accurate recollection of psychosocial variables from the past, such as family circumstances. Research has shown that the recollection of these types of variables for young adults is rather poor (Henry et al., 1994). This limitation, which is common to self-report measures that rely on accurate recollection, highlights the clinical importance of gathering as much corroborating objective data as possible about individuals' psychosocial history. However, gathering objective data such as health and school records is beyond the scope of this self-report instrument, and may not be as important as current perceptions of past experiences in terms of impact on present functioning (Wekerle et al., 2001).

The results of the 14-factor CFA on the final SERI indicated good model fit overall. The results of this CFA, in combination with previously conducted CFAs on the factor structure of the SERI, support the current 55-item SERI as a psychometrically sound instrument that appears to measure 14 distinct protective factors. Future research on concurrent and predictive evidence (and thus, evidence based on test-criterion relationships) for the scores produced by the SERI will be necessary to further establish the contribution of these factors to our understanding of resiliency. The results of the hierarchical CFA on the final SERI indicated acceptable model fit, supporting the distinction often made in the literature between individual, familial, and communal protective factors. Furthermore, the acceptable model fit of this hierarchical model provides some support for the interpretation of a total, additive score for the SERI. However, the decrease in the model fit that occurred between the 14-factor and hierarchical models suggests

that the 14 factors are best interpreted individually. Thus, the results of this study suggest that the hierarchical interpretation of SERI scores may be used when it is clinically essential to derive a total score for the SERI or summed "Individual" "Familial" or "Communal" scores, however scores are best interpreted as individual sub-scale scores whenever possible.

The hierarchical model was also used for examining the convergent and discriminant evidence for the SERI (Figure 1). Convergent and discriminant evidence were provided based on the second-order factors of "Individual" "Familial" and "Communal" factors. No scales in existence in the current literature measure all of the 14 protective factors measured in the SERI scale. This makes it difficult to find a good comparison scale to use in the analysis of convergent evidence for the SERI as a whole. Most scales in existence solely focus on either individual, familial, or communal protective factors, or, if they do assess more than one of these domains, differentiate these different types of protective factors into their own sub-scales (Connor & Davidson, 2003; Gardener et al., 2008). Thus current protective factors measures focused on either individual, familial, or communal factors were used to examine convergent and discriminant validity evidence for the SERI (Table 7).

The subsequent validity analysis indicated that the predicted model was partially supported. The Response to Stressful Experiences Scale (RSES), a measure of individual protective factors for use with military personnel, was significantly correlated with the "Individual" second-order sub-scale of the SERI (r=.538) and was less strongly correlated with the "Family" and "Community" second-order sub-scales of the SERI. This moderately strong correlation with the "Individual" second-order sub-scale was expected given that both scales measure individual protective factors, and that the scales have significant differences in target population and types of protective factors considered. In addition, the Inventory of Family

Protective Factors (IFPF) was significantly correlated with the "Family" second-order sub-scale of the SERI (r=.602) and was less strongly correlated with the "Individual" and "Community" second-order sub-scales of the SERI. This moderately strong correlation was also expected since the IFPF focuses heavily on the family yet does still measure community resources available to the family as a whole.

However, the correlation of the combined "Emotional Support" and "Concrete Support" sub-scales of the Protective Factors Survey (PFS) with the "Community" second-order sub-scale of the SERI was much lower than expected (r=.098). Indeed, the PFS did not correlate as expected with any of the three second-order SERI sub-scales. There are several possible explanations for this odd pattern of correlations. Primarily, these two sub-scales of the PFS do not actually claim to measure communal protective factors, they simply tend to ask questions related to communal support. Thus, they may have been a poor choice for a measure of communal protective factors. Additionally, the alphas of the "Concrete Support" sub-scale (.68) in the present study and in the initial validation study for the PFS (.63) were well below the acceptability cutoff of .80, further suggesting that these scales from the PFS may not have been measuring a unified "Communal" factor.

Another potential explanation for this lack of convergent validity evidence is that the "Community" second-order sub-scale of the SERI does not accurately measure what it is supposed to measure. There is the possibility that the communal second-order sub-scale of the SERI may not hold together as tightly as a factor as the individual and familial sub-scales. Some evidence for this conclusion is the lower alpha value for the SERI "Community" second-order sub-scale (α = .87). However, this alpha is still well within the acceptable range for internal consistency reliability. Additionally, the "Prosocial Organizations" sub-scale loading onto the

"Community" second-order sub-factor was not acceptable (.48), but was close to the cutoff (.5), indicating that the "Prosocial Organizations" (first-order) sub-factor may be better understood as aa separate second-order construct than as a communal second-order sub-factor. However, the "Community" second-order sub-factor loaded extremely strongly onto the third-order "Protective" factor in the model (.97) which suggests utility for the "Community" second-order sub-scale in predicting the total score. Furthermore, the "Community" second-order sub-scale correlated moderately strongly with the community-oriented items from IFPF, providing some convergent validity evidence. Together, these data provide validity evidence for the "Community" second-order sub-scale and the need for further research into how the "Community" second-order sub-scale relates to other measures of community support.

Limitations

There were several important limitations to this study. The first limitation is that this study used a sample of undergraduate students that overrepresented young-adult white women. Though a college population is ideal for testing the SERI scale, and is useful for examining proxy measures for resiliency such as college adjustment and success and associating these outcomes with SERI findings, there is a need to test this scale on samples that differ in age, gender, ethnicity, SES, and education level in order to establish the SERI as a generalizable scale to a more diverse college population. This study also used no other-report measures and relied solely on self-report for various aspects of individuals' histories, some of which have been shown to be influenced by incorrect recall (Henry et al., 1994). Such other-report measures were beyond the scope of this study, which was aimed at establishing the factor structure and reliability and validity evidence for the results of this SERI administration, but could provide valuable information in future studies. Finally, this study did not use the ideal scale for

examining the convergent validity evidence of the "Community" sub-scale of the SERI. Though this is largely due to the lack of well-supported measures of communal protective factors in the literature, this made it difficult to establish the convergent validity evidence for the "Community" sub-scale of the SERI. However, the moderately high correlation found with the community-oriented items on the IFPF did provide some convergent validity evidence for this administration.

Directions for Future Research

The clear next step in the establishment of the SERI as a useful measure of protective factors is to establish its concurrent and predictive validity evidence by measuring to what extent the SERI can predict current and future levels of resiliency. This information is key to understanding the potential utility of the SERI in university and clinical settings. The SERI has been tested extensively on university students and so this would be the ideal population with which to examine the utility of the SERI. First, the SERI should be compared with measures of trauma and measures of college success to examine how protective factors moderate this relationship. With the SERI, it will be possible to determine whether individual, familial, or communal protective factors have the largest effects. It will also be important to look at how individual sub-scales moderate this relationship. A later step for the SERI include testing the model fit on different target populations and adapting the measure to best fit different populations and clinical needs. A multi-group equivalence study comparing men and women would also provide useful information about how the relationship between trauma, protective factors, and resiliency differs between men and women. It may also be useful to compare self-report sub-scales of the SERI with other-report measures of the same construct (e.g., comparing "Perceived Intelligence" with measured IQ). These comparisons would be useful in examining

the accuracy of self-report across the constructs measured by the SERI. Additionally, such comparisons would be instrumental in establishing whether individuals' current perceptions of their protective factors or the actual current and past presence of protective factors in their lives are more predictive of resiliency to trauma.

Clinical Implications

The SERI currently has the potential to be a highly useful scale in university settings. Understanding which sub-scales or combination of sub-scales correlate the most highly with measures of resiliency in individuals will give clinicians and administrators valuable information about how to foster resiliency in their students with histories of trauma- helping clinicians and administrators understand which protective factors have the largest impacts on resiliency and prioritize these factors when designing interventions. The SERI may also be of particular value in locations such as University Health Clinics and University Counseling Centers for helping understand the resources individuals bring into the challenging college environment that may foster success during the college years (Maples et al., 2014). Understanding individuals' trauma backgrounds and what factors can foster resiliency has been shown to be important not only in fostering success in college students (Rich, Gingerich & Rosén, 1997) but also in understanding and addressing important risks such as the likelihood of college students attempting suicide (Sheline & Rosen, 2017).

Additionally, the SERI may be useful in clinical settings for understanding high-risk individuals' (individuals with histories or ongoing experiences of severe trauma) current likelihood of being resilient by understanding what protective factors are present in their lives. After further testing and adaptation, the SERI may be useful in community mental health settings, where measures of protective factors have historically been used (Counts et al., 2010).

Individuals in high risk situations with low scores across the domains measured by the SERI could be targeted for more intensive interventions in community settings than higher-scoring individuals, who may already have the resources necessary to be resilient to trauma and may only require traditional advocacy services. Furthermore, the SERI could provide a starting point for the development of effective interventions for helping those low in internal or environmental resources cope with trauma.

Fostering protective factors in individuals who have experienced trauma has been shown to be effective in building resiliency (Masten, 2001) and using the SERI may help clinicians in a variety of settings individualize protective-factors focused treatments to the needs of individual clients who may be high in certain protective factors but low in others.

Conclusion

The aim of this study was to confirm the factor structure of the SERI originally identified by Mohr (2012) and to test the new factors of "Coping" and "Optimism", as well as to test a hierarchical model of the SERI and to establish internal consistency and test-retest reliability and construct validity evidence for the results of this SERI administration. The Final SERI consists of 55 items and 14 factors and demonstrates good model fit. The hierarchical model of the SERI demonstrates adequate model fit indicating second-order "Individual", "Family", and "Community" factors and a third-order "Protective" factor. The SERI scores from the target sample demonstrate acceptable internal consistency and test-retest reliability and convergent/discriminant validity across most sub-scales, highlighting important domains for future research.

Table 1

Conceptually Related Items between Convergent Validity Scales

SERI Family Sub-Scale	Inventory of Family Protective Factors
Parenting Practices	Most people think our family is friendly and others like to be around us
I received warm parenting	Our family is creative, resourceful, and self-reliant
My parents were loving	There have been more positive experiences than problems with our family's finances in the past 3 months
I had a parent/guardian I could rely on	Our family was able to solve problems by ourselves
My parents were emotionally available	Our family has had more positive experiences than problems with work/school in the past 3 months
My parents cared about me	Our family is optimistic and concentrates on the positives in most situations
Parent Connections	Our family had control over many of the events in our lives
I felt connected to a parent/guardian	There have been more positive experiences than problems with the health status of our family in the past 3 months
I was emotionally close to my parents	There have been more problems than positive experiences with our family's friends in the past 3 months
I was connected to my family	Our family has a good relationship with at least one supportive person

Money	Our family has at least one caring/interested person in our lives
My family was financially comfortable	
My parents made enough money at their job for my family to live comfortably	
My family was able to afford things we needed	
Resources	
My family had access to adequate healthcare	
My family did not have to worry excessively about money	
My family and I had access to good health services	
Kin Connections	
My extended family was there for me when my parents couldn't be	
I felt that my extended family was there for me	
I could depend on family members other than my parents and siblings	
I had positive connections to my extended family	

SERI Individual Sub-Scale	Response to Stressful Experiences Scale
Intelligence	I tend to calm and comfort myself
I was intelligent	I tend to find strength in the meaning, purpose, or mission of my life
I was smart	I tend to look for creative solutions to the problem
I was bright	I tend to look at the problem in a number of ways
I did well academically	I tend to find opportunity for growth
Self-Esteem	I tend to find meaning from the experience
I had strong self-confidence	I tend to take action to fix things
I felt positively about myself	I tend to not give up trying to solve problems I think I can solve
I had high self-esteem	I tend to expect that I can handle it
I believed in myself	I tend to find a way to do what's necessary to carry on
I viewed myself as a capable individual	I tend to face my fears
Talent	I tend to pray or meditate
I had a talent	I tend to lean on my faith in God or a higher power
I was skilled in at least one activity	I tend to try to recharge myself before I have to face the next challenge
Others noticed my special ability in an activity	I tend to see it as a challenge that will make me better
I had a skill that I was proud of	I tend to put things in perspective and realize I will have my times of joy and my times of sadness
I felt there was something special I could do	
I was seen as a "talented" kid	
Faith	

I had a strong sense of faith and spirituality

My faith or spirituality was important to me

Religion/spirituality was a central part of my life

I attended religious services

I believed in a higher power of spiritual energy

I took comfort in my faith or spirituality

SERI Community Sub-Scale	Protective Factors Survey
Good Schools	When I am lonely there are several people I can talk to
My school met students' academic needs	If I needed help finding a job, I wouldn't know where to go for help
I received a good education	I have others who will listen when I need to talk about my problems
My school had skilled teachers	If there is a crisis, I have others I can talk to
I learned a lot at school	I wouldn't know where to go for help if I had trouble making ends meet
Prosocial Adults	
I had an adult mentor other than my parents	
An adult outside my family motivated me to succeed	
There was an adult outside my family who cared about me	

Table 2

Expected Correlation Strengths for Convergent Validity

	SERI Individual	SERI Family	SERI Community
RSES	***		
IFPF	**	***	
PFS	*	**	***

***Strong Predicted Correlation
** Moderate Predicted Correlation
* Weak Predicted Correlation

Table 3

Text and Descriptive Statistics for Initial SERI Items

Text	*M*	*SD*
I was intelligent	4.08	.878
I was smart	4.15	.904
I was bright	4.18	.855
I did well academically	4.24	.890
I received warm parenting	4.09	1.144
My parents were loving	4.37	1.032
My parents were emotionally available	3.90	1.244
My parents cared about me	4.49	.939
I had strong self-confidence	2.96	1.232
I felt positively about myself	3.50	1.227
I had high self-esteem	3.16	1.209
I believed in myself	3.66	1.143
I viewed myself as a capable individual	3.92	.948
My family was financially comfortable	3.92	1.154
My family was able to afford the things we needed	4.28	.989
My parent(s) made enough money at their job for my family to be able to live comfortably	4.23	1.077
I had a strong sense of faith or spirituality	2.89	1.449

My faith or spirituality were important to me	2.80	1.472
I took comfort in my faith or spirituality	2.74	1.436
Religion/spirituality was a central part of my life	2.49	1.463
I attended religious services	2.98	1.545
I believed in a higher power or spiritual energy	3.04	1.537
I had a talent (i.e. talented in music, drama academics, etc.)	3.83	1.145
I was skilled in at least one activity	4.22	.909
Others noticed my special ability in an activity (e.g. sports, music, drama, academics, etc.)	3.82	1.143
I had a skill that I was proud of	4.03	1.101
I felt there was something special I could do (i.e. I was talented at something)	3.78	1.178
I was seen as a "talented kid"	3.60	1.187
My school met students' academic needs	4.07	.965
I received a good education	4.49	.880
My school had skilled teachers	4.10	.978
I went to a good school	4.28	.942
I had an adult mentor other than my parents	3.52	1.395
An adult outside my family motivated me to succeed	3.78	1.227
There was an adult outside my family who cared about me	4.09	1.148
Someone other than my family made sure that I was ok	3.95	1.177
I had positive connections to my extended family (e.g. grandparents, aunts, uncles, etc.)	3.94	1.187

I could depend on family members other than my parents and siblings	3.66	1.335
I felt that my extended family was there for me	3.75	1.301
I was involved in groups that served others	3.45	1.393
I was involved in a group that did good things for the community	3.54	1.258
I was involved with an organization that focused on helping others	3.52	1.289
I felt connected to a parent/guardian	4.25	1.114
I was emotionally close to my parents	3.84	1.249
I had a parent/guardian that I could rely on	4.29	1.098
I was connected to my family	4.07	1.099
I went to the dentist for check-ups at least once a year	4.35	1.141
When I was sick I was able to go to the doctor	4.51	.963
My family did not have access to good healthcare	4.39	1.085
My family and I had access to good health services	4.45	.948
My family had access to adequate health services	4.40	.920
My family and I had access to good health services	4.46	.926
I had a primary doctor my family took me to	4.36	1.085
My family had access to adequate healthcare	4.42	.906
I only went to the doctor if there was a serious emergency	3.02	1.379
I thought about how to deal with problems instead of ignoring them	3.61	.991

I coped well with challenges	3.66	.999
I did not cope well with challenges	3.55	1.005
I felt like my problems were out of my control	3.31	1.148
I had a hard time handling stress	2.85	1.149
I was able to handle stress	3.38	1.039
I would put off dealing with problems	2.93	1.054
I felt like I could handle my problems	3.62	1.014
I was pessimistic	3.40	1.120
I was optimistic	3.69	1.140
I had a positive outlook on life	3.72	1.109
Things usually went wrong for me	3.59	1.057
I didn't expect good things to happen to me	2.50	1.095
I was able to look on the bright side	3.91	1.019
I believed everything would be ok in the end	3.92	1.037

Table 4

Item Discrimination Correlation Matrix

Item	Perceived Intelligence Sub-scale	Positive Parenting Practices Sub-scale	Self-Esteem Sub-scale	Financial Resources Sub-scale	Faith Sub-scale
1	.875**				
14	.922**				
25	.849**				
54	.828**				
3		.903**			
15		.921**			
43		.878**			
57		.891**			
7			.870**		
19			.908**		
32			.925**		
45			.863**		
63			.613**		
24				.926**	
40				.927**	
68				.939**	
12					.941**
23					.952**
27					.923**
37					.919**
50					.860**
66					.883**

*p<.05, **p<.01, ***p<.001

Item	Perceived Talent Sub-scale	Good Schools Sub-scale	Prosocial Adults Sub-scale	Kin Connections Sub-scale	Prosocial Organizations Sub-scale
8	.871**				
22	.829**				
35	.880**				
47	.904**				
64	.864**				
70	.842**				
4		.837**			
18		.888**			
31		.880**			
60		.916**			
16			.638**		
30			.862**		
44			.887**		
59			.903**		
11				.829**	
36				.905**	
49				.933**	
65				.899**	
42					.924**
53					.951**
69					.952**

*p<.05, **p<.01, ***p<.001

Item	Parent Connections Sub-scale	Access to Healthcare Sub-scale	Coping Sub-scale	Optimism Sub-scale
13	.929**			
28	.899**			
38	.888**			
52	.914**			
9		.623**		
17		.750**		
21		.646**		
29		.895**		
34		.853**		
46		.938**		
48		.888**		
56		.912**		
61		.153**		
2			.543**	
5			.817**	
10			.662**	
26			.433**	
39			.561**	
55			.866**	
62			.363**	
71			.865**	
6				.436**
20				.899**
33				.911**
41				.509**
51				.503**
58				.912**
67				.817**

*p<.05, **p<.01, ***p<.001

Table 5

Initial 14-Factor CFA Factor Loadings

Scale	
Perceived Intelligence Sub-scale	
Item number	Factor loading (SE)
1	.835 (.02)
14	.921 (.01)
25	.799 (.02)
54	.746 (.02)
Positive Parenting Practices Sub-scale	0.915
Item number	Factor loading (SE)
3	.840 (.01)
15	.914 (.01)
43	.807 (.02)
57	.893 (.01)
Self-Esteem Sub-scale	
Item number	Factor loading (SE)
7	.761 (.02)
19	.872 (.01)
32	.860 (.01)
45	.874 (.01)
63	.684 (.02)
Financial Resources Sub-scale	
Item number	Factor loading (SE)
24	.849 (.01)
40	.920 (.01)
68	.909 (.01)
Faith Sub-scale	
Item number	Factor loading (SE)
12	.937 (.01)
23	.963 (.00)
27	.921 (.01)
37	.903 (.01)
50	.802 (.02)
66	.842 (.01)
Perceived Talent Sub-scale	
Item number	Factor loading (SE)
8	.832 (.01)
22	.796 (.01)
35	.738 (.02)
47	.816 (.01)
64	.889 (.01)
70	.779 (.02)

Good Schools Sub-scale	
Item number	Factor loading (SE)
4	.737 (.02)
18	.884 (.01)
31	.826 (.02)
60	.903 (.01)
Prosocial Adults Sub-scale	
Item number	Factor loading (SE)
16	.654 (.03)
30	.769 (.02)
44	.839 (.02)
59	.866 (.01)
Kin Connections Sub-scale	
Item number	Factor loading (SE)
11	.760 (.02)
36	.865 (.01)
49	.926 (.01)
65	.870 (.01)
Prosocial Organizations Sub-scale	
Item number	Factor loading (SE)
42	.861 (.01)
53	.930 (.01)
69	.942 (.01)
Parent Connections Sub-scale	
Item number	Factor loading (SE)
13	.902 (.01)
28	.847 (.01)
38	.853 (.01)
52	.896 (.01)
Access to Healthcare Sub-scale	
Item number	Factor loading (SE)
9	.634 (.03)
17	.763 (.02)
21	.666 (.02)
29	.950 (.01)
34	.879 (.01)
46	.964 (.00)
48	.755 (.02)
56	.896 (.01)
61	.137 (.04)
Coping Sub-scale	
Item number	Factor loading (SE)
2	.585 (.03)
5	.702 (.02)
10	.678 (.03)
26	.541 (.03)
39	.605 (.03)
55	.774 (.02)
62	.459 (.04)
71	.832 (.02)

Optimism Sub-scale	
Item number	Factor loading (SE)
6	.448 (.03)
20	.858 (.01)
33	.895 (.01)
41	.565 (.03)
51	.548 (.03)
58	.886 (.01)
67	.726 (.02)

Table 6

Test-Retest Correlations

Scale	Test-Retest Correlation (*r*)
Total Scale	.808
Individual Sub-scale	.840
Family Sub-scale	.769
Community Sub-scale	.738
Perceived Intelligence Sub-scale	.640
Positive Parenting Practices Sub-scale	.738
Self-Esteem Sub-scale	.798
Financial Resources Sub-scale	.740
Faith Sub-scale	.894
Perceived Talent Sub-scale	.819
Good Schools Sub-scale	.649
Prosocial Adults Sub-scale	.734
Kin Connections Sub-scale	.827
Prosocial Organizations Sub-scale	.736
Parent Connections Sub-scale	.756
Access to Healthcare Sub-scale	.682
Coping Sub-scale	.729
Optimism Sub-scale	.747

Table 7

Correlations for Convergent Validity

	SERI Individual	SERI Family	SERI Community
RSES	.538(***)	.221(**)	.293(*)
IFPF	.440(**)	.602(***)	.361(**)
PFS	.105(*)	.131(**)	.098(***)

***Strong Predicted Correlation
** Moderate Predicted Correlation
* Weak Predicted Correlation

Table 8

Final 14-Factor CFA Factor Loadings

Scale	
Perceived Intelligence Sub-scale	
Item number	Factor loading (SE)
1	.834 (.02)
14	.921 (.01)
25	.798 (.02)
54	.747 (.02)
Positive Parenting Practices Sub-scale	0.915
Item number	Factor loading (SE)
3	.841 (.01)
15	.914 (.01)
43	.808 (.02)
57	.893 (.01)
Self-Esteem Sub-scale	
Item number	Factor loading (SE)
7	.776 (.02)
19	.883 (.01)
32	.880 (.01)
45	.858 (.01)
Financial Resources Sub-scale	
Item number	Factor loading (SE)
24	.849 (.01)
40	.919 (.01)
68	.910 (.01)
Faith Sub-scale	
Item number	Factor loading (SE)
12	.937 (.01)
23	.963 (.00)
27	.921 (.01)
37	.902 (.01)
50	.802 (.02)
66	.842 (.01)
Perceived Talent Sub-scale	
Item number	Factor loading (SE)
8	.829 (.01)
22	.810 (.02)
35	.844 (.01)
47	.905 (.01)
64	.841 (.01)
70	.780 (.02)

Good Schools Sub-scale	
Item number	Factor loading (SE)
4	.737 (.02)
18	.883 (.01)
31	.826 (.02)
60	.903 (.01)
Prosocial Adults Sub-scale	
Item number	Factor loading (SE)
30	.740 (.02)
44	.842 (.02)
59	.881 (.01)
Kin Connections Sub-scale	
Item number	Factor loading (SE)
11	.760 (.02)
36	.865 (.01)
49	.927 (.01)
65	.870 (.01)
Prosocial Organizations Sub-scale	
Item number	Factor loading (SE)
42	.861 (.01)
53	.931 (.01)
69	.942 (.01)
Parent Connections Sub-scale	
Item number	Factor loading (SE)
13	.902 (.01)
28	.847 (.01)
38	.854 (.01)
52	.896 (.01)
Access to Healthcare Sub-scale	
Item number	Factor loading (SE)
46	.961 (.01)
48	.754 (.02)
56	.894 (.01)
Coping Sub-scale	
Item number	Factor loading (SE)
5	.668 (.03)
55	.753 (.02)
71	.864 (.02)
Optimism Sub-scale	
Item number	Factor loading (SE)
20	.857 (.01)
33	.898 (.01)
58	.890 (.01)
67	.731 (.02)

Table 9

Final Hierarchical CFA Factor Loadings

Scale	
Perceived Intelligence Sub-scale	
Item number	Factor loading (SE)
1	.836 (.02)
14	.931 (.01)
25	.792 (.02)
54	.735 (.02)
Positive Parenting Practices Sub-scale	0.915
Item number	Factor loading (SE)
3	.842 (.01)
15	.915 (.01)
43	.809 (.02)
57	.890 (.01)
Self-Esteem Sub-scale	
Item number	Factor loading (SE)
7	.775 (.02)
19	.886 (.01)
32	.880 (.01)
45	.855 (.01)
Financial Resources Sub-scale	
Item number	Factor loading (SE)
24	.857 (.01)
40	.904 (.01)
68	.920 (.01)
Faith Sub-scale	
Item number	Factor loading (SE)
12	.937 (.01)
23	.963 (.00)
27	.921 (.01)
37	.902 (.01)
50	.802 (.02)
66	.842 (.01)
Perceived Talent Sub-scale	
Item number	Factor loading (SE)
8	.831 (.01)
22	.806 (.02)
35	.843 (.01)
47	.905 (.01)
64	.846 (.01)
70	.776 (.02)

Good Schools Sub-scale	
Item number	Factor loading (SE)
4	.739 (.02)
18	.869 (.01)
31	.828 (.02)
60	.915 (.01)
Prosocial Adults Sub-scale	
Item number	Factor loading (SE)
30	.733 (.02)
44	.837 (.02)
59	.891 (.01)
Kin Connections Sub-scale	
Item number	Factor loading (SE)
11	.765 (.02)
36	.865 (.01)
49	.929 (.01)
65	.864 (.01)
Prosocial Organizations Sub-scale	
Item number	Factor loading (SE)
42	.862 (.01)
53	.934 (.01)
69	.937 (.01)
Parent Connections Sub-scale	
Item number	Factor loading (SE)
13	.902 (.01)
28	.839 (.01)
38	.863 (.01)
52	.894 (.01)
Access to Healthcare Sub-scale	
Item number	Factor loading (SE)
46	.961 (.01)
48	.755 (.02)
56	.893 (.01)
Coping Sub-scale	
Item number	Factor loading (SE)
5	.666 (.03)
55	.749 (.02)
71	.869 (.02)
Optimism Sub-scale	
Item number	Factor loading (SE)
20	.858 (.01)
33	.896 (.01)
58	.890 (.01)
67	.734 (.02)

Individual Sub-scale	
Factor name	Factor loading (SE)
Perceived Intelligence	.587 (.02)
Self-Esteem	.881 (.02)
Faith	.301 (.04)
Perceived Talent	.642 (.03)
Coping	.857 (.02)
Optimism	.911 (.01)
Family Sub-scale	
Factor name	Factor loading (SE)
Positive Parenting Practices	.953 (.01)
Financial Resources	.588 (.03)
Kin Connections	.679 (.03)
Parent Connections	.980 (.01)
Access to Healthcare	.606 (.03)
Community Sub-scale	
Factor name	Factor loading (SE)
Good Schools	.731 (.03)
Prosocial Adults	.748 (.03)
Prosocial Organizations	.480 (.04)
Total Scale	
Factor name	Factor loading (SE)
Individual	.798 (.03)
Community	.971 (.03)
Family	.807 (.03)

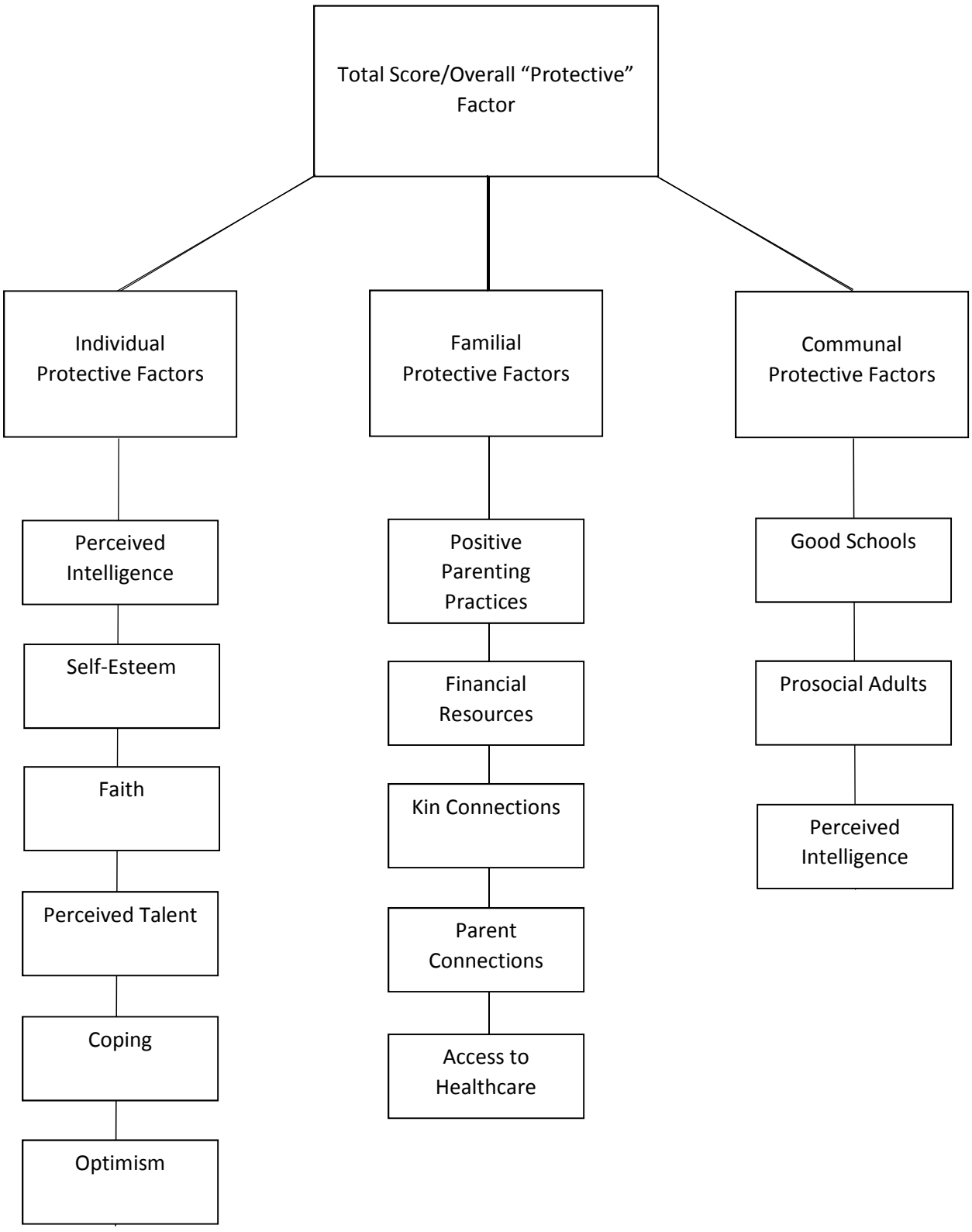
Total Score/Overall "Protective" Factor
Individual Protective Factors
Familial Protective Factors
Communal Protective Factors
Perceived Intelligence
Self-Esteem
Faith
Perceived Talent
Coping
Optimism
Positive Parenting Practices
Financial Resources
Kin Connections
Parent Connections
Access to Healthcare
Good Schools
Prosocial Adults
Perceived Intelligence

Figure 1

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Appendices

Appendix A

SERI (Mohr, 2012 Version)

The following statements describe things that may or may not have been true of you while you were growing up. **Please use the rating scale below to indicate how accurately each statement describes your childhood.** Please read each statement carefully, and then circle the number that corresponds to how accurately the statement describes you.

Response Options
1: Very Inaccurate
2: Moderately Inaccurate
3: Neither Inaccurate nor Accurate
4: Moderately Accurate
5: Very Accurate

When I was growing up:	Very Inaccurate				Very Accurate
1. I was intelligent	1	2	3	4	5
2. I received warm parenting	1	2	3	4	5
3. My school met students' academic needs	1	2	3	4	5
4. I had strong self-confidence	1	2	3	4	5
5. I had a talent (i.e., talented in sports, music, drama, academics, etc.)	1	2	3	4	5
6. I had positive connections to my extended family (e.g., grandparents, aunts, uncles, etc.)	1	2	3	4	5
7. I had a strong sense of faith or spirituality	1	2	3	4	5
8. I felt connected to a parent/guardian	1	2	3	4	5
9. My family did not have to worry excessively about money	1	2	3	4	5
10. I was smart	1	2	3	4	5
11. My parents were loving	1	2	3	4	5
12. I had an adult mentor other than my parents	1	2	3	4	5
13. I received a good education	1	2	3	4	5
14. I felt positively about myself	1	2	3	4	5
15. I was skilled in at least one activity	1	2	3	4	5
16. My faith or spirituality was important to me	1	2	3	4	5
17. My family was financially comfortable	1	2	3	4	5
18. I was bright	1	2	3	4	5
19. I was emotionally close to my parents	1	2	3	4	5
20. An adult outside of my family motivated me to succeed	1	2	3	4	5
21. My school had skilled teachers	1	2	3	4	5
22. I had high self-esteem	1	2	3	4	5
23. My family had access to adequate health care	1	2	3	4	5

24. Others noticed my special ability in an activity (e.g., sports, music, drama, academics, etc.)	1	2	3	4	5
25. I could depend on family members other than my parents and siblings	1	2	3	4	5
26. Religion/spirituality was a central part of my life	1	2	3	4	5
27. I had a parent/guardian I could rely on	1	2	3	4	5
28. My family was able to afford the things we needed	1	2	3	4	5
29. I was involved in groups that served others	1	2	3	4	5
30. My parents were emotionally available	1	2	3	4	5
31. There was an adult outside my family who cared about me	1	2	3	4	5
32. I believed in myself	1	2	3	4	5
33. My family and I had access to good health services	1	2	3	4	5
34. I had a skill that I was proud of	1	2	3	4	5
35. I felt that my extended family was there for me	1	2	3	4	5
36. I attended religious services	1	2	3	4	5
37. I was connected to my family	1	2	3	4	5
38. I was involved in a group that did good things for the community	1	2	3	4	5
39. I did well academically	1	2	3	4	5
40. My parents cared about me	1	2	3	4	5
41. Someone other than family made sure that I was okay	1	2	3	4	5
42. I went to a good school	1	2	3	4	5
43. I viewed myself as a capable individual	1	2	3	4	5
44. I felt that there was something special I could do (i.e., I was talented at something)	1	2	3	4	5
45. My extended family was there for me when my parents couldn't be	1	2	3	4	5
46. I believed in a higher power or spiritual energy	1	2	3	4	5
47. My parent(s) made enough money at their job for my family to be able to live comfortably	1	2	3	4	5
48. I was involved with a group or organization that focused on helping others	1	2	3	4	5
49. I was seen as a "talented kid"	1	2	3	4	5
50. I took comfort in my faith or spirituality	1	2	3	4	5

Appendix B

INVENTORY OF FAMILY PROTECTIVE FACTORS

Directions: This is an inventory about the stressful events your family has experienced and how your family has handled them. Please indicate to what extent each of the following statements is true for your family.

	Almost Always Like My Family	Generally Like My Family	Sometimes Like My Family	A Little Like My Family	Not At All Like My Family
1. There have been more positive experiences than problems with the health status of our family in the past 3 months.	⬭	⬭	⬭	⬭	⬭
2. There have been more positive experiences than problems with our family's finances in the past 3 months.	⬭	⬭	⬭	⬭	⬭
3. There have been more problems than positive experiences with our family's friends in the past 3 months.	⬭	⬭	⬭	⬭	⬭
4. Our family has had more positive experiences than problems with work/school in the past 3 months.	⬭	⬭	⬭	⬭	⬭
5. Our family is optimistic and concentrates on the positives in most situations.	⬭	⬭	⬭	⬭	⬭
6. Our family is creative, resourceful and self-reliant.	⬭	⬭	⬭	⬭	⬭
7. Most people think our family is friendly and others like to be around us.	⬭	⬭	⬭	⬭	⬭
8. Our family is competent and has pride.	⬭	⬭	⬭	⬭	⬭
9. Our family has a good relationship with at least one supportive person.	⬭	⬭	⬭	⬭	⬭
10. Our family has at least one caring person in our lives.	⬭	⬭	⬭	⬭	⬭
11. Our family can trust at least one person in our lives.	⬭	⬭	⬭	⬭	⬭
12. Our family has at least one person who is interested in our lives.	⬭	⬭	⬭	⬭	⬭
13. Our family has been able to resolve any (but not all) of our problems by ourselves.	⬭	⬭	⬭	⬭	⬭
14. Our family has control over many (but not all) events in our lives.	⬭	⬭	⬭	⬭	⬭
15. Our family has coped well with one or more major stressors in our lives.	⬭	⬭	⬭	⬭	⬭
16. Our family has been able to make "the best out of a bad situation" a number of times.	⬭	⬭	⬭	⬭	⬭

Appendix C

RSES
August 2012

Response to Stressful Experiences Scale

Baseline

ID#

Instructions

The following statements describe how some individuals may think, feel, or act during and after the most stressful events in life. Please indicate by checking the appropriate box how well each of these statements describes you during and after life's most stressful events.

During and after life's most stessful events, I tend to...	Exactly like me				Not at all like me
1. ...take action to fix things.	☐	☐	☐	☐	☐
2. ...not give up trying to solve problems I think I can solve.	☐	☐	☐	☐	☐
3. ...find a way to do what's necessary to carry on.	☐	☐	☐	☐	☐
4. ...pray or meditate.	☐	☐	☐	☐	☐
5. ...face my fears.	☐	☐	☐	☐	☐
6. ...find opportunity for growth.	☐	☐	☐	☐	☐
7. ...calm and comfort myself.	☐	☐	☐	☐	☐
8. ...try to "recharge" myself before I have to face the next challenge.	☐	☐	☐	☐	☐
9. ...see it as a challenge that will make me better.	☐	☐	☐	☐	☐
10. ...look at the problem in a number of ways.	☐	☐	☐	☐	☐
11. ...look for creative solutions to the problem.	☐	☐	☐	☐	☐
12. ...put things in perspective and realize I will have times of joy and times of sadness.	☐	☐	☐	☐	☐
13. ...be good at determining which situations *are* changeable and which *are not*.	☐	☐	☐	☐	☐
14. ...find meaning from the experience.	☐	☐	☐	☐	☐
15. ...find strength in the meaning, purpose, or mission of my life.	☐	☐	☐	☐	☐
16. ...know I will bounce back.	☐	☐	☐	☐	☐
17. ...expect that I can handle it.	☐	☐	☐	☐	☐
18. ...learn important and useful life lessons.	☐	☐	☐	☐	☐
19. ...understand that bad things can happen to anyone, not just me.	☐	☐	☐	☐	☐
20. ...lean on my faith in God or a higher power.	☐	☐	☐	☐	☐
21. ...draw upon lessons learned from failures and past mistakes.	☐	☐	☐	☐	☐
22. ...practice ways to handle it better next time.	☐	☐	☐	☐	☐

Appendix D

Protective Factors Survey

Emotional Support and Concrete Support Sub-Scales

Part II. Please *circle* the number that best describes how much you agree or disagree with the statement.

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neutral	Slightly Agree	Mostly Agree	Strongly Agree
6. I have others who will listen when I need to talk about my problems.	1	2	3	4	5	6	7
7. When I am lonely, there are several people I can talk to.	1	2	3	4	5	6	7
8. I would have no idea where to turn if my family needed food or housing.	1	2	3	4	5	6	7
9. I wouldn't know where to go for help if I had trouble making ends meet.	1	2	3	4	5	6	7
10. If there is a crisis, I have others I can talk to.	1	2	3	4	5	6	7
11. If I needed help finding a job, I wouldn't know where to go for help.	1	2	3	4	5	6	7

Appendix E

College Adjustment Questionnaire (CAQ)

Listed below are some statements that describe how college students might be feeling about their experience with college. **Please use the rating scale below to indicate how accurately each statement describes you *at this point in time.*** Please read each statement carefully, and then circle the number that corresponds to how accurately the statement describes you.

Response Options

1: Very Inaccurate

2: Moderately Inaccurate

3: Neither Inaccurate nor Accurate

4: Moderately Accurate

5: Very Accurate

Right now:	Very Inaccurate				Very Accurate
1. I am succeeding academically	1	2	3	4	5
2. I don't have as much of a social life as I would like	1	2	3	4	5
3. I feel that I am doing well emotionally since coming to college	1	2	3	4	5
4. I am happy with my social life	1	2	3	4	5
5. I am doing well in my classes	1	2	3	4	5
6. I am happy with how things have been going in college	1	2	3	4	5
7. I am happy with the grades I am earning in my classes	1	2	3	4	5
8. I feel that I am emotionally falling apart in college	1	2	3	4	5
9. I have had a hard time making friends since coming to college	1	2	3	4	5
10. I am as socially engaged as I would like to be	1	2	3	4	5
11. I have felt the need to seek emotional counseling since coming to college	1	2	3	4	5
12. I am meeting my academic goals	1	2	3	4	5
13. I have performed poorly in my classes since starting college	1	2	3	4	5
14. I am satisfied with my social relationships	1	2	3	4	5

Appendix F

Trauma History Survey

Have you ever experienced any of the following events? (Check all that apply)

1) Death of a close loved one _____

- If yes, rate the severity of this event in terms of personal distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____

- When was your most recent experience of this event (month/year)? _____

2) Very serious medical problem _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1**– *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____

- When was the most recent experience of this event (month/year)? _____

3) Close friend, significant other, or family member experienced a serious medical condition ___

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____

- When was your most recent experience of this event (month/year)? _____

4) Accident that led to serious injury to yourself or someone close to you _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____

- When was your most recent experience of this event (month/year)? _____

5) Place of residence being damaged by fire or other natural causes _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____

- When was your most recent experience of this event (month/year)? _____

6) Endured a divorce _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____

- When was your most recent experience of this event (month/year)? _____

7) Physically assaulted _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____
- When was your most recent experience of this event (month/year)? _____

8) Sexually assaulted _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____
- When was your most recent experience of this event (month/year)? _____

9) Victim of a crime such as robbery or mugging _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____
- When was your most recent experience of this event (month/year)? _____

10) Being stalked _____

- If yes, rate the severity of this event in terms of levels of distress (circle number).

0 – *Not at all* **1** – *Very small* **2** – *Small* **3** – *Moderate* **4** - *Extreme*

- If yes, how many times have you experienced this? _____

- When was your most recent experience of this event (month/year)? _____

Appendix G

The Childhood Maltreatment Questionnaire for Abuse (CMQ-A)

Listed below are statements that describe experiences with maltreatment that people may have had when they were growing up. Some of the experiences can be very common and others not as common. **Please indicate how often each of the following occurred while you were a child**. So that you can describe your experiences in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then circle the number that best describes your experience.

Response Options

0-4 Likert scale: 0 = Never, 1= Rarely, 2 = Sometimes, 3 = Often, 4 = Very Often.

When I was a child:	Never				Very Often
1. I was hit hard enough by a parent/guardian to have to receive medical care.	0	1	2	3	4
2. I was touched in a sexual way by a person older than me.	0	1	2	3	4
3. I felt cared for by my parents/guardians.*	0	1	2	3	4
4. One of my caregivers said degrading things to me.	0	1	2	3	4
5. I was physically hurt by a parent/guardian.	0	1	2	3	4
6. I felt safe with all of my caregivers.*	0	1	2	3	4
7. I was emotionally maltreated by a parent/guardian.	0	1	2	3	4
8. I was hit hard enough by a parent/guardian to leave marks on my skin.	0	1	2	3	4
9. I was sexually molested by a person older than me.	0	1	2	3	4
10. I could trust that none of my caregivers would intentionally hurt me.*	0	1	2	3	4
11. I was sexually abused as a child.	0	1	2	3	4
12. A caregiver said things that indicated they cared very little for my wellbeing.	0	1	2	3	4
13. One of my caregivers physically abused me.	0	1	2	3	4
14. A person older than me made me show them my genitals for their sexual gratification.	0	1	2	3	4
15. I felt supported by all of my caregivers.*	0	1	2	3	4
16. A parent/guardian emotionally abused me.	0	1	2	3	4
17. I experienced non-accidental physical injury from a parent/guardian.	0	1	2	3	4
18. I was coerced into unwanted sexual behavior.	0	1	2	3	4

19. All of my caregivers were “there for me” when I was growing up.* 0 1 2 3 4

Factors and items are listed below:
Physical Abuse: 1, 5, 8, 13, 17
Sexual Abuse: 2, 9, 11, 14, 18
Emotional Abuse: 4, 7, 12, 16
Love: 3, 6, 10, 15, 19
* indicates reverse scoring

Appendix H

The Childhood Maltreatment Questionnaire for Neglect (CMQ-N)

Listed below are statements that describe experiences with maltreatment that people may have had when they were growing up. Some of the experiences can be very common and others not as common. **Please indicate how often each of the following occurred while you were a child**. So that you can describe your experiences in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then circle the number that best describes your experience.

Response Options

0-4 Likert scale: 0 = Never, 1= Rarely, 2 = Sometimes, 3 = Often, 4 = Very Often.

When I was a child:	Never				Very Often
1. I was left alone and unsupervised for significant periods of time as a young child.	0	1	2	3	4
2. One of my caregivers did not bathe me, even when I was clearly dirty.	0	1	2	3	4
3. One of my caregivers failed to provide adequate emotional care for me.	0	1	2	3	4
4. I felt cared for by my parents/guardians.*	0	1	2	3	4
5. My physical care was neglected by a parent/guardian.	0	1	2	3	4
6. A parent/guardian refused or failed to provide the affection I needed.	0	1	2	3	4
7. I felt safe with all of my caregivers. *	0	1	2	3	4
8. My emotional needs were not met by a parent/guardian.	0	1	2	3	4
9. I had to fend for myself because there was no one around to supervise me.	0	1	2	3	4
10. I went hungry because a parent/guardian did not feed me.	0	1	2	3	4
11. I felt supported by all of my caregivers. *	0	1	2	3	4
12. A parent/guardian left me by myself even though there should have been someone watching me.	0	1	2	3	4
13. All of my caregivers were “there for me” when I was growing up. *	0	1	2	3	4
14. I was emotionally neglected by a parent/guardian.	0	1	2	3	4
15. A caregiver did not dress me appropriately for the weather.	0	1	2	3	4
16. I could trust that none of my caregivers would intentionally hurt me. *	0	1	2	3	4

For researchers, factor and items are listed below:
Physical Neglect: 2, 5, 10, 15
Emotional Neglect: 3, 6, 8, 14
Supervision Neglect: 1, 9, 12
Love: 4, 7, 11, 13, 16
* indicates reverse scoring

Appendix I

Demographic Questionnaire

1) What is your age? _____ years old

2) What is your gender? (please choose one)
___ Male
___ Female
___ Transgender

3) What is your year in school?
___ Freshman
___ Sophomore
___ Junior
___ Senior
___ Fifth year or above

4) What race/ethnicity do you identify with the most? (please choose one)
___ African American/Black
___ Alaska Native
___ American Indian/Native American
___ Asian American
___ Caucasian/White
___ Hawaiian/Pacific Islander
___ Latino or Hispanic
___ Middle Eastern American
___ Other (Please specify: _____)

5) What is your sexual orientation? (please choose one)
___ Heterosexual (sexually interested in the opposite sex)
___ Homosexual (sexually interested in the same sex)
___ Bisexual (sexually interested in both the opposite and same sex)
___ Other (Please specify: _____)

Appendix J

All 71 Proposed SERI items (Grouped by Factor)

Perceived Intelligence (FACTOR1)

1. I was intelligent
14. I was smart
25. I was bright
54. I did well academically

Positive Parenting Practices (FACTOR2)

3. I received warm parenting
15. My parents were loving
43. My parents were emotionally available
57. My parents cared about me

Self-Esteem (FACTOR3)

7. I had strong self-confidence
19. I felt positively about myself
32. I had high self-esteem
45. I believed in myself
63. I viewed myself as a capable individual

Financial Resources (FACTOR4)

24. My family was financially comfortable
40. My family was able to afford the things we needed
68. My parent(s) made enough money at their job for my family to be able to live comfortably

Faith (FACTOR5)

12. I had a strong sense of faith or spirituality
23. My faith or spirituality were important to me
27. I took comfort in my faith or spirituality
37. Religion/spirituality was a central part of my life
50. I attended religious services
66. I believed in a higher power or spiritual energy

Perceived Talent (FACTOR6)

8. I had a talent (i.e. talented in sports, music, drama, academics, etc.)

22. I was skilled in at least one activity

35. Others noticed my special ability in an activity (e.g. sports, music, drama, academics, etc.)

47. I had a skill that I was proud of

64. I felt there was something special I could do (i.e. I was talented at something)

70. I was seen as a "talented kid"

Good Schools (FACTOR7)

4. My school met students' academic needs

18. I received a good education

31. My school had skilled teachers

60. I went to a good school

Prosocial Adults (FACTOR8)

16. I had an adult mentor other than my parents

30. An adult outside my family motivated me to succeed

44. There was an adult outside my family who cared about me

59. Someone other than my family made sure that I was ok

Kin Connections (FACTOR9)

11. I had positive connections to my extended family (e.g. grandparents, aunts, uncles etc.)

36. I could depend on family members other than my parents and siblings

49. I felt that my extended family was there for me

65. My extended family was there for me when my parents couldn't be

Prosocial Organizations (FACTOR10)

42. I was involved in groups that served others

53. I was involved in a group that did good things for the community

69. I was involved with an organization that focused on helping others

Parent Connections (FACTOR11)

13. I felt connected to a parent/guardian

28. I was emotionally close to my parents

38. I had a parent/guardian I could rely on

52. I was connected to my family

Access to Healthcare (FACTOR12)

9. I went to the dentist for check-ups at least once a year

17. When I was sick I was able to go to the doctor

21. My family did not have access to good healthcare (reverse coded)

29. My family and I had access to good health services

34. My family had access to adequate health care

46. My family and I had access to good health services

48. I had a primary doctor my family took me to

56. My family had access to adequate healthcare

61. I only went to the doctor if there was a serious emergency (reverse coded)

Coping (FACTOR13)

2. I thought about how to deal with problems instead of ignoring them

5. I coped well with challenges

10. I did not cope well with challenges (reverse coded)

26. I felt like my problems were out of my control (reverse coded)

39. I had a hard time handling stress (reverse coded)

55. I was able to handle stress

62. I would put off dealing with problems (reverse coded)

71. I felt like I could handle my problems

Optimism (FACTOR14)

6. I was pessimistic (reverse coded)

20. I was optimistic

33. I had a positive outlook on life

41. Things usually went wrong for me (reverse coded)

51. I didn't expect good things to happen to me (reverse coded)

58. I was able to look on the bright side

67. I believed everything would be ok in the end

Appendix K

Final 55 SERI Items (Grouped by Factor)

Perceived Intelligence (FACTOR1)

1. I was intelligent
14. I was smart
25. I was bright
54. I did well academically

Positive Parenting Practices (FACTOR2)

3. I received warm parenting
15. My parents were loving
43. My parents were emotionally available
57. My parents cared about me

Self-Esteem (FACTOR3)

7. I had strong self-confidence
19. I felt positively about myself
32. I had high self-esteem
45. I believed in myself

Financial Resources (FACTOR4)

24. My family was financially comfortable
40. My family was able to afford the things we needed
68. My parent(s) made enough money at their job for my family to be able to live comfortably

Faith (FACTOR5)

12. I had a strong sense of faith or spirituality
23. My faith or spirituality were important to me
27. I took comfort in my faith or spirituality
37. Religion/spirituality was a central part of my life
50. I attended religious services
66. I believed in a higher power or spiritual energy

Perceived Talent (FACTOR6)

8. I had a talent (i.e. talented in sports, music, drama, academics, etc.)

22. I was skilled in at least one activity

35. Others noticed my special ability in an activity (e.g. sports, music, drama, academics, etc.)

47. I had a skill that I was proud of

64. I felt there was something special I could do (i.e. I was talented at something)

70. I was seen as a "talented kid"

Good Schools (FACTOR7)

4. My school met students' academic needs

18. I received a good education

31. My school had skilled teachers

60. I went to a good school

Prosocial Adults (FACTOR8)

30. An adult outside my family motivated me to succeed

44. There was an adult outside my family who cared about me

59. Someone other than my family made sure that I was ok

Kin Connections (FACTOR9)

11. I had positive connections to my extended family (e.g. grandparents, aunts, uncles etc.)

36. I could depend on family members other than my parents and siblings

49. I felt that my extended family was there for me

65. My extended family was there for me when my parents couldn't be

Prosocial Organizations (FACTOR10)

42. I was involved in groups that served others

53. I was involved in a group that did good things for the community

69. I was involved with an organization that focused on helping others

Parent Connections (FACTOR11)

13. I felt connected to a parent/guardian

28. I was emotionally close to my parents

38. I had a parent/guardian I could rely on

52. I was connected to my family

Access to Healthcare (FACTOR12)

46. My family and I had access to good health services

48. I had a primary doctor my family took me to

56. My family had access to adequate healthcare

Coping (FACTOR13)

5. I coped well with challenges

55. I was able to handle stress

71. I felt like I could handle my problems

Optimism (FACTOR14)

20. I was optimistic

33. I had a positive outlook on life

58. I was able to look on the bright side

67. I believed everything would be ok in the end

Appendix L

Final SERI

The following statements describe things that may or may not have been true of you while you were growing up. **Please use the rating scale below to indicate how accurately each statement describes your childhood.** Please read each statement carefully, and then circle the number that corresponds to how accurately the statement describes you.

Response Options
1: Very Inaccurate
2: Moderately Inaccurate
3: Neither Inaccurate nor Accurate
4: Moderately Accurate
5: Very Accurate

When I was growing up:	Very Inaccurate				Very Accurate
1. I was intelligent	1	2	3	4	5
2. I received warm parenting	1	2	3	4	5
3. My school met students' academic needs	1	2	3	4	5
4. I coped well with challenges	1	2	3	4	5
5. I had strong self-confidence	1	2	3	4	5
6. I had a talent (e.g., talented in sports, music, drama, academics, etc.)	1	2	3	4	5
7. I had positive connections to my extended family (e.g. grandparents, aunts, uncles, etc.)	1	2	3	4	5
8. I had a strong sense of faith or spirituality	1	2	3	4	5
9. I felt connected to a parent/guardian	1	2	3	4	5
10. I was smart	1	2	3	4	5
11. My parents were loving	1	2	3	4	5
12. I received a good education	1	2	3	4	5
13. I felt positively about myself	1	2	3	4	5
14. I was optimistic	1	2	3	4	5
15. I was skilled in at least one activity	1	2	3	4	5
16. My faith or spirituality were important to me	1	2	3	4	5
17. My family was financially comfortable	1	2	3	4	5
18. I was bright	1	2	3	4	5
19. I took comfort in my faith or spirituality	1	2	3	4	5
20. I was emotionally close to my parents	1	2	3	4	5
21. An adult outside my family motivated me to succeed	1	2	3	4	5
22. My school had skilled teachers	1	2	3	4	5
23. I had high self-esteem	1	2	3	4	5
24. I had a positive outlook on life	1	2	3	4	5
25. Others noticed my special ability in an activity	1	2	3	4	5

(e.g. sports, music, drama, academics, etc.)					
26. I could depend on family members other than my parents and siblings	1	2	3	4	5
27. Religion/spirituality was a central part of my life	1	2	3	4	5
28. I had a parent/guardian I could rely on	1	2	3	4	5
29. My family was able to afford the things we needed	1	2	3	4	5
30. I was involved in groups that served others	1	2	3	4	5
31. My parents were emotionally available	1	2	3	4	5
32. There was an adult outside my family who cared about me	1	2	3	4	5
33. I believed in myself	1	2	3	4	5
34. My family and I had access to good health services	1	2	3	4	5
35. I had a skill that I was proud of	1	2	3	4	5
36. I had a primary doctor my family took me to	1	2	3	4	5
37. I felt that my extended family was there for me	1	2	3	4	5
38. I attended religious services	1	2	3	4	5
39. I was connected to my family	1	2	3	4	5
40. I was involved in a group that did good things for the community	1	2	3	4	5
41. I did well academically	1	2	3	4	5
42. I was able to handle stress	1	2	3	4	5
43. My family had access to adequate healthcare	1	2	3	4	5
44. My parents cared about me	1	2	3	4	5
45. I was able to look on the bright side	1	2	3	4	5
46. Someone other than my family made sure I was ok	1	2	3	4	5
47. I went to a good school	1	2	3	4	5
48. I felt there was something special I could do (i.e. I was talented at something)	1	2	3	4	5
49. My extended family was there for me when my parents couldn't be	1	2	3	4	5
50. I believed in a higher power or spiritual energy	1	2	3	4	5
51. I believed everything would be ok in the end	1	2	3	4	5
52. My parent(s) made enough money at their job for my family to be able to live comfortably	1	2	3	4	5
53. I was involved with an organization that focused on helping others	1	2	3	4	5
54. I was seen as a "talented kid"	1	2	3	4	5
55. I felt like I could handle my problems	1	2	3	4	5