ABSTRACT

The Family Resiliency Index: Examining a New Measure of Family Resiliency and
its Relationship with Child Outcomes After Stress

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Family resiliency is the extent to which the relationships between family members
has adaptive characteristics that facilitate an individual's, dyad's, or system's ability
to cope with stressful life situations. Current theory suggests that family resiliency
may have multiple components, yet, it is not clear which components are most
important; sub-scales on instruments of resiliency are often highly correlated, thereby
failing to demonstrate meaningful distinctions between the presumed components.
This project is the first step in testing a new measure of family resilience, the Family
Resiliency Index. Participants included 135 college students who completed an
online questionnaire in which they recalled a stressful event from their childhood,
completed retrospective ratings of both the new and previously established measures
of family resiliency, a measure of parenting style, and outcome measures for well-
being and externalizing behavior problems around the time of the stressful event.
Participants were prompted to recall a specific memory of a positive or negative
behavior and write a short description before rating the behavior's frequency on a 6-
point scale. The new measure's positive and negative scales were not significantly
correlated with one another, supporting its divergent validity. Both scales were
strongly associated with other measures of family resiliency. Furthermore, the new
measure's relationships with outcome variables were still significant after controlling
for the effects of parenting style.

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THE FAMILY RESILIENCY INDEX: EXAMINING A NEW MEASURE OF FAMILY

RESILIENCY AND ITS RELATIONSHIP WITH CHILD OUTCOMES AFTER

STRESS

A Thesis Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the Requirements of the

Honors Program

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Waco, Texas

May, 2015

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CHAPTER ONE

Introduction

Family resiliency is the extent to which the relationships between family members has adaptive characteristics that facilitate an individual's, dyad's, or system's ability to cope with stressful life situations. One new and promising tool for measuring the resiliency of a dyad after a stressful event is the Family Resiliency Index (FRI, Sanford, 2014). While originally developed to predict the resiliency of a romantic couple, this scale could be adapted to apply to families, specifically for parent-child dyads. A measure of family resiliency should include some specific characteristics. First, the Family Resiliency Index should show convergent validity by being strongly correlated with other, previously established measures of family resiliency. Second, it should have divergent validity between two fundamentally different dimensions of resiliency: interactions that increase a family's resiliency, and interactions that decrease a family's resiliency. The positive and negative scales should not be redundant of one another, and thus should only be minimally correlated with one another; they should each make unique contributions in explaining variance in outcome variables. Third, a new measure of family resiliency should be related to outcome variables in similar ways as previously established measures of family resiliency. Finally, a new measure of family resiliency based on a parent-child dyad should be related to measures of parenting style, but should

also be able to predict outcome variables after controlling for the effects of parenting style.

When developing a new scale, it is critical to establish convergent validity with previously established measures of the same construct. Previous research has established certain criteria and basic assumptions of resiliency and how it applies to the family unit. By definition, families with high levels of resiliency are expected to have higher levels of well-being than families with low levels of resiliency (Walsh, 2002). It is also reasonable to assume that the model of resiliency remains constant whether measuring an individual, a family, or even a community and that a healthy and resilient family is made up of healthy and resilient individuals (Patterson, 2002). An influential study by Conger and Conger (2002) suggests that stressors such as economic downturn affects the entire family's well-being; while parents were directly affected by poverty, their children's decline in well-being was due to parental neglect, interparental conflict, and parental emotional distress. The study of family resiliency focuses on important capabilities of the family when dealing with stress including emotional support (Ridenour, Yorgason, & Peterson, 2009) and communication (Walsh, 2003). In summation, family resiliency affects and is affected by a wide array of variables. In the creation of a new measure of family resiliency, it is important to assess that the same construct has been established through previous research.

Previous research on family resiliency has also resulted in measures of assessing a given family's levels of resiliency, including the Family Hardiness Index (FHI) and the Family Assessment Device (FAD, Epstein, Baldwin, & Bishop, 1983; McCubbin, Thompson, & McCubbin, 1996). The FHI measures a family's active adaptation and

internal system strengths in response to the demands of stressors over time (McCubbin et al., 1996). It was created to measure resiliency in terms of the family unit not an individual and is made up of three subscales: commitment, challenge, and control. Previous research using the FHI has identified correlations between family adaptation after stress and protective factors such as acceptance of the situation, optimism of individual members, constructive family communication and interaction, commitment to the family unit, and positive attitude especially toward new experiences (A. P. Greeff & Nolting, 2013; A. P. H., Berquin Greeff, 2004). The FAD measures the effectiveness of a family's structure and functioning in a time of a stressful event using seven different areas measured to distinguish healthy and struggling families (Epstein et al., 1983). Unlike the Family Resiliency Index, this measure was not developed by first collecting a large pool of free responses and then creating questions to cover responses given, but instead is based on a clinical family therapy assessment tool, the McMaster Model of Family Functioning; this scale's construction suggests a focus on theory over empirical investigation of what people naturally notice and experience in their relationships. Nevertheless, to illustrate convergent validity, it is predicted that levels of resiliency assessed from a new measure should be strongly related to those of the FAD and FHI.

The Family Resiliency Index was designed to measure positive and negative resiliency as seen in behaviors that people naturally notice during stressful situations. While the FRI was originally created to measure interactions between romantic couples, early research found that the instrument's nearly orthogonal scales of positive and negative resiliency may be useful in measuring other types of resiliency (Sanford, 2014). A series of studies were used to create this measure, eventually establishing a set of

questions after analyzing written responses pertaining to coping behaviors after stress

(Sanford, 2014). Unlike other measures of family resiliency, this measure instructed

participants to recall specific examples of certain interactions or behaviors and to then

rate the frequency of a certain specific behavior occurring, to avoid simply measuring

sentiment override; through limiting the general assessment of one's relationship from

the assessment of specific behaviors or events, a more accurate evaluation of resiliency

may be attained (Sanford, 2012; Weiss, 1984). Results showed many significant

correlations between outcome variables and the resiliency measure (Sanford, 2014).

Through the development of the FRI, people responding to stressful life events

identified two separate types of behaviors: those that increased resiliency and those that

decreased resiliency. These reports are in addition to two key findings from previous

research on these resiliency behaviors after stress on couples supports the creation of the

positive and negative scales. First, both scales correlated in expected ways with outcome

variables; there were small correlations between the positive resiliency subscale and

levels of well-being ($r = 0.18$, $p < 0.01$) and quality of life ($r = 0.16$, $p < 0.05$) even after

controlling for participant's relationship satisfaction. Secondly, the two scales only had a

weak relationship between each other ($r = -0.11$). It is important when dealing with

specific resiliency behaviors, to appreciate the qualitative difference between positive and

negative interaction, and the need to model them as distinct from one another, not as

opposite poles of a single variable. Research by Skinner, Johnson, and Snyder (2005) on

parenting style suggests that some parent's behaviors are often an inconsistent

combination of both positive and negative strategies, while other parents may be

detached from their children, and may not employ positive or negative parenting

strategies; while a theoretical model that includes positive and negative behaviors into opposite poles of the same scale would not detect differences between these types of parenting, a model of separate positive and negative behaviors may help to measure differences that would be expected. This same line of thinking suggests that inclusion of both positive and negative subscale of family resiliency may allow for a more accurate measuring of the construct. Furthermore, research on couple conflict and health outcomes suggests that often in relationships, negative behaviors and interactions affect individuals in different and sometimes stronger ways than positive behaviors. For example, hostile communication and conflict were related to increased blood pressure while supportive communication was not (Ewart, Taylor, Kraemer, & Agras, 1991). While not pertaining directly to family resiliency, findings like these concerning other types of communication and interactions in personal relationships suggest that a similar theoretical model be followed. The positive and negative scales of the Family Resiliency Index are one of the most important characteristics of this measure of resiliency.

The positive and negative scales of the FRI vary greatly from the structure of previously established measures of family resiliency. As previously stated, the subscales of the FAD and FHI are more based on resiliency theory than empirically tested behaviors and interactions that participants report. As a result of this theoretical basis, the subscales of both the FHI and FAD are highly correlated with one another (Epstein et al., 1983). While one would not expect different aspects of family resiliency to be completely independent of one another, subscales so highly correlated with each other that they do not provide different information between one another, and do not serve much of a purpose. Furthermore, including several different subscales all measuring the

same construct, when all highly correlated, does not seem necessary when constructing a scale. While the Family Resiliency Index should be related to outcome variables in similar ways to other measures of family resiliency, its scales should not be highly correlated to each other.

Another important criteria for a family resiliency measure is that it be related to outcome variables in expected ways, as established measures of family resiliency have. Children's coping and resiliency in response to stressful events had been related to decreases in emotional security (Cummings, Goeke-Morey, & Papp, 2003), academic achievement (Conger & Donnellan, 2007), health and cognitive functioning (Luo & Waite, 2005; Repetti, Taylor, & Seeman, 2002), increases in levels of depression and anxiety (Roberts, Mitchell, Witman, & Taffaro, 2010), behavioral problems (Sturge-Apple, Davies, & Cummings, 2006), post-traumatic stress symptoms (Moore & Varela, 2010; Osofsky, Osofsky, Kronenberg, Brennan, & Hansel, 2009), reductions in quality of sleep (El-Sheikh, Buckhalt, Mize, & Acebo, 2006) and even speeding the onset of puberty (Belsky et al., 2007). Family resiliency after stress can affect many different children's outcomes, two of which include general well-being and externalizing control problems. About three percent of children suffer from symptoms of depression, often in response to stressful events around them (Allgaier et al., 2012). Measures of general well-being have been found to be effective instruments for identifying levels of depression, especially in children (Allgaier et al., 2012). By definition, declines in well-being and increased depression symptoms would be expected to be inversely related to levels of family resiliency. Similarly, up to 20% of children have an emotional or behavior disorders and exhibit externalizing behavior problems, and even more may

suffer from symptoms of these disorders after trauma or stress (He, Burstein, Schmitz, & Merikangas, 2013). Instances of externalizing behavior problems, whether directly or indirectly related to the child's stress, would also be expected to be inversely related to a child's and a family's resiliency. It is expected that measures of family resiliency, the Family Resiliency Index, FAD, and FHI would be related to higher levels of well-being and lower levels of externalizing behavior problems after a stressful life event.

Not only should the FRI be related to these outcome variables, but it should also be able to explain variance that other factors that are related to family resiliency. One of these factors is parenting style, or a parent's qualities, features, and strategies used in their parenting (Skinner et al., 2005). Positive parenting style has been related to children's outcomes such as healthy psychological adjustment, superior coping abilities, higher levels of competency, self-esteem, and social development, and a more positive child-parent relationship (Richardson & Gleeson, 2012; Wolfradt, Hempel, & Miles, 2003). Furthermore, parents that exhibit negative parenting strategies, especially unhealthy controlling and coercion behaviors, are more likely to have children with lower self-esteem and well-being and increased internal pressure (Farkas & Grolnick, 2010; Grolnick & Pomerantz, 2009; Soenens, Vansteenkiste, & Sierens, 2009; Soenens & Vansteenkiste, 2010). Parenting style, as conceptualized by research done by Skinner, Johnson, & Snyder (2005) is made up of three components each with a positive and negative dichotomy: warmth and rejection, structure and chaos, autonmy support and control. This measure allows for the assessment of these three components or independent levels of positive and negative parenting. This seperation of positive and negative behavior is similar to that of the Family Resiliency Index, discussed previsouly.

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While one may expect parenting style to be related to levels of a family's resiliency because of its strong correlations with many both positive and negative outcome variable, it is reasonable to assume that a measure of family resiliency should still predict outcome variables after controlling for the effects of parenting style. Parenting style may be one of the capabilities that contribute to family's resilience after stress, but resiliency includes other capabilities and qualities of a family. Because of this, it is expected that parenting style and family resiliency will be strongly related to one another, it is also expected that family resiliency will be able to explain unique variance in outcome variables after controlling for the effects of parenting style.

Overview

The current study was the first step in evaluating the FRI. Data was collected from college students recalling a stressful event in their childhood and completing measures based on their behaviors, cognitions, and emotions. This method of data collection allowed for more stressful events, both in quality and quantity, in participant's life to be used than data collected from participants that are currently children; these young adults will have their entire childhood to reflect on, while also having a more mature understanding of the types of stress they and their parents experienced. They also were able to more objectively rate different aspects of their relationship with their parents than collecting data from children or adolescents. While there were be some problems using recalled experiences and attitudes around stressful life events, this method of data collection seems appropriate for this current study.

This study compared measures of family resiliency and parenting style to outcomes, specifically well-being and externalizing behavior problems after a stressful life event. It was expected that higher levels of family resiliency and positive parenting style would predict better well-being and less externalizing behavior problems around the time of the stressful life event. Six hypotheses were tested, each relating to previously mentioned criteria for this new measure of family resiliency. First, it was expected that the two scales of the Family Resiliency Index would have good reliability. Second, it was expected that the scales of the FRI and would have low correlations with one another, suggesting divergent validity. Third, it was expected that the Family Resiliency Index would be strongly correlated with other measures of family resiliency, the FHI and FAD, indicating the FRI's convergent validity. Forth, it was predicted that the correlations between the subscales of the FAD and FHI would be much larger than those of the Family Resiliency Index. Fifth, it was expected that measures of family resiliency, the Family Resiliency Index, FHI, and FAD, would be positively correlated with well-being and negatively correlated with externalizing behavior problems at the time of the stressful event. Finally, while it was predicted that measures of family resiliency would be positively correlated with parenting style and that both the FRI and parenting style measures would be related to outcome variables, it was hypothesized that family resiliency as measured by the Family Resiliency Index would be able to predict outcome variables even after controlling for parental style.

CHAPTER TWO

Method

Participants

Participants were 117 students from a private university in the southwestern United States. Of the participant pool of 150, these 117 completed all aspects of data collection, and were used in data analysis. Ages of participants ranged from 18 to 25 ($M = 18.17$, $SD = 1.07$). The sample was 76.9% female, 62.4% White, 17.1% Hispanic or Latino, 11.1% African American, 7.7% Asian or Pacific Islander, and 1.7% Other. Participants were given research participation credit in a psychology course for participating in the study.

Procedure

Using an online data collection system, participants were able to anonymously complete questionnaires, submit data, and receive credit. Participants read and identified that they understood an informed consent form before beginning data collection. Participants first answered a set of demographic questions regarding their age, race, gender, and present well-being. Next, participants completed a questionnaire regarding their parent's parenting strategies experienced during the participant's childhood.

Instructions indicated that participants should choose one of their parents to complete this questionnaire on, and that one's childhood should be operationally defined as the time in their life before coming to college when they lived with their parents. Before being able to answer questions regarding their childhood, participants were given questions to ensure they understood the instructions to the questionnaire and were not allowed to continue until they responded correctly. Participants were then instructed to "Complete the following section by indicating how true or false certain statements are regarding your mother/father and his/her parenting style throughout your childhood." Participants selected their mother (80.6%), their father (18.7%) or an unspecified other (0.7%).

Following this questionnaire, participants were instructed to "Think of a single stressful life event that your family experienced while you were living with your parents. Think of the event that you found to be most stressful and that fits one or more of the categories below." Participants were given a textbox in which to "Write a brief description of the stressful life event you identified" as well as a list of categories from which they identified what type of stressful event occurred. The categories were as follows: hospitalization or medical problem, a disability, a financial problem/loss of job/lack of employment, housing or neighborhood problem, problems involving work or school, parents having relationship problems, participant or siblings having problems with parents, participant or siblings having problems involving a romantic partner, participant or siblings have a problem with people at school, abuse/harassment/crime, doing something that violated family rules or expectations, emotional or psychological problems, stress related to military service, death of a family member or someone close to the family, a natural disaster or fire, an accident, legal problems, life changes including

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moving, parents changing jobs, birth of a sibling, or stressful events not listed above. They then were given questions to ensure they understood the instructions for following questionnaires, similar to those given earlier. Participants were then prompted to complete a series of questionnaires on their well-being, externalizing behavioral problems and their family's resiliency around the time of the stressful event.

Measures

Well-Being

Each participant completed The World Health Organization-5 Well-Being Index (WHO-5, WHO, 1998) twice, once after demographic questions regarding present well-being, and once after identifying a stressful life event regarding well being around the time of the stressful event; the second time the measure was presented to participants, questions were slightly augmented by changing them from present to past tense. This questionnaire asked participants to rate how often they felt generally positive by responding to the frequency of statements such as "I feel cheerful and in good spirits" on a 0 to 5 Lickert scale, and scores from each item were summed together to generate a total well-being score. The total score ranged from 0 to 25, with greater scores indicating greater levels of well-being. The scale had good reliability (Cronbach's alpha = 0.919).

Externalizing Behavior Problems

The Conduct Problems subscale of The Strengths and Difficulties Questionnaire (SDQ, Goodman, Meltzer, & Bailey, 2003) was used to measure externalizing behavior problems. Participants were asked to recall their stressful life event and complete this 5-item questionnaire in which they rated their agreement to statements like "I got very angry and lost my temper," and "I usually did what I was told" on a 0 to 2 Likert scale. Scores on each item were summed together to create a total conduct problem score. The total score ranged from 0 to 10, with greater scores indicating more frequent conduct disorder problems. This questionnaire was revised from its original version to measure the participants' past, but all other aspects of the scale remained the same. Reliability for this scale was adequate (Cronbach's alpha = 0.758).

Parenting Styles

The Parent as Social Context Questionnaire (for Adolescent) (Skinner et al., 2005) is a measure of the six subscales of parenting dimensions (warmth, rejection, structure, chaos, autonomy-support, coercion) as perceived by the participants regarding their parents and families or origin. As previously mentioned, this measure allows for the assessment of positive parenting style, comprised of levels of warmth, structure, and autonomy-support, and negative parenting style, including rejection, chaos, and coercions. This 30-item questionnaire instructs participants to recall their

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childhood and adolescence and rate levels of agreement to statements regarding different dimensions of parenting like "My parents let me know they love me", "When I wanted to do something, my parents showed me how", and "My parents trusted me" on a 1 to 4 Likert scale. Answers for each dimension were summed together to create a positive styles subscale, including warmth, structure, and autonomy-support, and a negative styles subscale, including rejection, chaos, and coercion. Total scores for each subscale ranged from 0 to 24, with greater scales indicating more positive/negative levels of parental style. This questionnaire was revised from its original version to measure the participants' past, but all other aspects of the scale will remain the same. Reliability for both positive parenting styles (Cronbach's alpha = 0.90) and negative parenting styles (Cronbach's alpha = 0.90) were good.

Family Resiliency

Three different scales measured participant's family resiliency. The Family Resiliency Index was created to measure specific behaviors that indicate family resiliency after a stressful life event. The scale was originally designed to measure resiliency of a married couple, but questions were revised to pertain to a family unit. The questionnaire had three sections. First, participants were instructed to recall an instance that nine positive resiliency behaviors occurred (e.g. one family member helped another family member view the stressful situation from a good perspective) and record a short phrase about that instance. Next, after responding to nine listed, positive behaviors, both the behaviors and the participant's short phrase regarding a

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specific instance of its occurrence were presented and they were instructed to indicate the frequency of specific instances like this occurring on a 6-point scale: 1 = "No, this behavior did NOT happen", 2 = "No, although this behavior might have happened, I could not think of an example, 3 = "No, although this behavior certainly happened, I could not think of an example", 4 = "Yes, I was able to think of a specific example", 5 = "Yes, I was able to think of a specific example and I could have easily thought of one or two more" and 6 = "Yes, I was able to think of a specific example and I could easily think of several more." Finally, participants were given examples of nine negative resiliency behaviors (e.g. one or more family members withdrew from communication) and completed the same frequency measure. Scores on each subscale ranged from 0 to 54, with greater scores indicating more frequent interactions increasing or decreasing resiliency, depending on which subscale is being addressed. Reliability of positive scale (Cronbach's alpha = 0.845) and the negative scale (Cronbach's alpha = 0.884) were both good. A copy of the Family Resiliency Index is provided in Appendix A.

Second, the Family Hardiness Index (FHI) (McCubbin et al., 1996) measured stress resistance in families. The 20-item FHI is comprised of three subscales: commitment (measuring the family's sense of internal strengths, dependability, and ability to work together), challenge (measuring the family's efforts to be innovative, active, to experience new things, and to learn) and control (measuring the family's sense of being in control of family life rather than being shaped by outside events and circumstances). Total scores ranged from 0 to 80, with greater scores indicating greater levels of family resiliency. Participants recalled their stressful life event and

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rated their agreement with statements regarding their family's ability to respond to stress such like "we had a sense of being strong even when we faced big problems" or "we believed that things will work out for the better if we worked together as a family". All questions were summed to create a total score. This questionnaire was revised from its original version to measure the participants' past, but all other aspects of the scale will remain the same. Reliability of the scale was good (Cronbach's alpha = 0.892)

Finally, The McMaster Family Assessment Device (FAD) (Epstein et al., 1983) is a scale designed to identify problem areas in family functioning. This 53-item measure included seven subscales: problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functioning. Participants recalled their stressful life event and were instructed to rank their agreement to statements indicating family functioning like "we knew what to do in an emergency" and "we were frank with each other" on a 4-point Likert scale. Total scores range from 0 to 212, with more positive scores indicating greater family functioning. This questionnaire was revised from its original version to measure the participants' past, but all other aspects of the scale will remain the same. Reliability was good (Chonbach's alpha = 0.954).

CHAPTER THREE

Results

Means and standard deviations for measures used are reported in Table 1.

Generally, mean scores of instruments were at moderate levels. Externalizing behavior

problems (M = 2.62) may have been underreported given its relatively low reported

frequency. For the most part, there were no significant differences in levels of family

resiliency, parenting style, well-being, or externalizing behavior problems found between

participants of different gender, ethnicity and race, age at the time of data collection, type

of stressful life event, or age at which the event occurred. A summary of those variables

that did have significant differences based on those demographic characteristics is

presented in Appendix B.

To address the Family Resiliency Index's reliability of the positive and negative

scales, Chrombach's alpha was used. The positive ($\alpha = 0.85$) and negative scales ($\alpha =$

0.88) of the Family Resiliency Index both had good reliability. These reliability scores

indicate that a substantial portion of variance between scores was true variance in levels

of a particular family's resilience.

Measuring correlations of the two scales tested the hypothesis that the positive

and negative scales of the FRI were not strongly related to one another. Table 2 shows

that the relationship between the positive and negative scales for the Family Resiliency

Index was not significant (r = -0.16, p < 0.05). This finding supports the hypothesis that

the positive and negatives scales of the Family Resiliency Index are weakly related to

each other. This finding supports the FRI's divergent validity in its design and

development; unlike other measures whose structure is based on resiliency theory, the

FRI is based on behaviors and interactions that participants naturally notice during

stressful events.

Correlations were used to test the similarity between the Family Resiliency Index

and other measures of family resiliency. Table 2 shows that there was a large significant

relationship between positive resiliency measured by the Family Resiliency Index and

both the FAD's and the FHI's measurements of family resiliency. There was also a

strong negative correlation between interactions that decreased resiliency and scores on

the FAD and the FHI. Convergent validity was supported by these findings, as the FRI

had strong relationships with both the FAD and FHI.

The hypothesis that previously developed measures of family resiliency are made

up of highly correlated subscales is addressed through analyses of correlations between

all included subscales and their total scale. As reported in Table 3, all subscales of the

FAD were moderately or highly correlated with one another. Similarly, Table 4 reports

that all subscales of the FHI were moderately or highly correlated with one another.

Results found suggest that these previously established measures of resiliency are made

up of subscales that are strongly related to one another.

To test the hypothesis that all three measures of family resiliency were related to

outcome variables in predicable ways, correlations between these variables were

calculated. Specifically, it was expected that increased family resiliency would be related to greater well-being and less externalizing behavior problems, and that decreased family resiliency would have inverse relationships with both outcome variables. Table 2 shows that all three scales were correlated with well-being and externalizing behavior problems in expected ways. Externalizing behavior problems were negatively correlated with positive resiliency and positively correlated with negative resiliency. These relationships further support convergent validity of the FRI, suggesting that levels of resiliency reported through its use are related to outcome variables in similar ways as previously established measures of resiliency.

Finally, correlations and multiple regressions were used to examine the hypothesis that family resiliency should predict levels of well-being and externalizing behavior problems after controlling for the effects of parenting style. Specifically, it was expected that measures of parental style would have a strong positive and negative correlation to the interactions that increase and decrease resiliency respectfully. Furthermore, it was also expected that the Family Resiliency Index would predict outcome variables even after controlling for parental style. As reported on Table 2, the positive subscale of the Family Resiliency Index had a moderate, positive correlation with positive parenting style and had a moderate negative correlation with negative parenting style. Similarly, the negative subscale had a moderate negative correlation with positive parenting style and a moderate correlation with negative parenting style. In regression analysis, both interactions that increased or decreased resiliency and positive and negative parenting style were used to predict well-being and externalizing behavior problems. Levels of parenting style and scores on the Family Resiliency Index explained

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a significant portion of variance of well-being ($R^2 = 0.17$, $F (4, 112) = 5.76$, $p < 0.001$)

and externalizing behavior problems ($R^2 = 0.30$, $F (4, 112) = 12.01$, $p < 0.001$). Table 5

reports correlations and standard betas for well-being. While there were correlations

between family resiliency and well-being, its effects became non-significant after

controlling for parenting style factors. Similarly, Table 6 reports correlations and

standard betas for externalizing behavior problems. There were negative correlations

between externalizing behavior problems and the positive scale of the Family Resiliency

Index, and a positive correlation between the negative scale of the FRI and externalizing

behavior problems. Both relationships remained significant after controlling for

parenting style. The hypothesis that the FRI would predict variance in well-being and

externalizing behavior problems was partially supported; while the relationship between

the FRI and externalizing behavior problems stayed significant after controlling for

parenting style, the relationship between well-being and the FRI scales did not.

CHAPTER FOUR

Discussion

Family resiliency is the study of a family unit's ability to use its adaptive

capabilities that facilitate the system's coping in response to stress. The current study

examines the effectiveness of a new measure, the FRI, in assessing that construct. The

measure was compared to both current measures of family resiliency and parenting style

on its relationship with and ability to predict outcome variables, namely well-being and

externalizing behavior problems at the time of the stressful event. Results indicated that

the FRI was highly correlated with other measures of family resiliency, the FAD and FHI.

These findings suggest convergent validity of the new scale. Results also indicated that

the two scales of the FRI were reliable and not significantly correlated with one another,

suggesting divergent validity. Correlations between the FRI and outcome variables, well-

being and externalizing behavior problems, were as expected, which further supported

the assumption that the FRI is measuring resiliency. Finally, the FRI was able to predict

levels of externalizing behavior problems after controlling for the effects of parenting

style, although it was not able to account for variance in well-being when parenting style

was controlled for.

One important hypothesis investigated in this study was whether the new Family

Resiliency Index was related to other, established measures of family resiliency. Results

from this study suggest that there are strong relationships between all resiliency measures. This finding suggests convergent validity between this newly created measure of family resiliency and one that have been previously established measurements. In the development and testing of a new measure, it is paramount that there is evidence showing that this new measure is testing the same construct as those that are established. This is one of the first steps in the initial testing of a new instrument. Resiliency, while defined in a variety of ways by different individuals, includes the same general principles and ideas throughout variations of target populations and situations (Patterson, 2002; Sanford, 2014; Walsh, 2002, 2003). Items from scales of family resiliency included in the present study included common themes of working together, group problem solving, time spent together as a family, being attentive to wants and feelings of other family members, and open communication. Future research may focus on the analysis of common themes across varying scales of resiliency, especially those based on specific behaviors of a family's members.

Another hypothesis addressed in this study was that the Family Resiliency Index's positive and negative scales would not be strongly correlated with one another. Data collected for this study suggests that both scales have high reliability and a low, non-significant correlation with one another. This suggests that as participants recalled certain interactions between themselves and their families, the presence of positive behaviors did not predict whether negative behaviors were or were not present, or vice versa. These results seem to support previous research concerning the presence of positive and negative behaviors in intimate relationships: the presence of a positive trait is not equivalent to the absence of a negative trait, and both may have different

relationships with outcome variables (Ewart et al., 1991; Skinner et al., 2005). Because of the strong correlation between subscales found in the FHI and FAD, it is reasonable to expect that any relationship between a subscale and an outcome variable would be similar to any other subscale and that same outcome measure. This, however, does not address aspects of family resiliency that could be better observed with the Family Resiliency Index. For example, a parent-child dyad with inconsistency in the presence of interactions that positively or negatively affected resiliency may affect a child's outcome different than a dyad without many interactions at all; measures with subscales that are strongly related and do not account for differences between both positive and negative interactions that predict resiliency may not be able to address differences between these two dyads. It is important for scales of family resiliency to separate the qualitatively different effects of positive and negative interactions to understand how they both may affect children's outcomes. While the Family Resiliency Index measures the same construct of family resiliency as the FAD and FHI, its positive and negative scales allow for a better understanding of how resiliency can affect outcome variables in children.

Still another important relationship studied was between scores on the FRI and levels of well-being and externalizing behavior problems. Table 2 shows that greater family resiliency predicted less frequent externalizing behavior problems and greater well-being, while interactions that decreased resiliency predicted opposite outcomes, in all but one case (the relationship between well-being and the Family Resiliency Index's positive scale was not significant). These results further suggest convergent reliability between the Family Resiliency Index, the FAD and the FHI, because all three measures were related to outcome variables in expected ways. Future study and analysis on the

Family Resiliency Index will be necessary to further support this claim, and may include different types of outcome variables not included in this study. These findings support previous research showing a relationship between both externalizing behavior problems and well-being and family resiliency (Allgaier et al., 2012; Sturge-Apple et al., 2006).

Another hypothesis investigated in this study was that the Family Resiliency Index and parenting style would be related to one another, and that resiliency would be able to predict outcomes after controlling for parenting style. Results from this study are mixed. While the relationship between both scales of the FRI and externalizing behavior problems remained significant when the effects of parenting were controlled for, this was not true for the relationship with well-being levels. These results suggest that even when family resiliency is measured in terms of the parent-child dyad, resiliency after stress has some specific effects beyond parenting style. While many outcome variables have been associated with positive parenting style (Richardson & Gleeson, 2012; Wolfradt et al., 2003), and many of these same outcomes are related to increases in family resiliency, this data suggests that resiliency may explain a portion of variance that parenting style cannot. While parenting style is only a measure of how parents typically interact with their children, family resiliency may include other variables significant to the family relationship and a child's outcomes; these may include the influence of other parents and the interactions of multiple relationships in a family, cultural differences in dynamics.

There are many possible reasons why the effects of resiliency became non-significant after controlling for parenting. It is unknown what accounts for the difference between well-being and externalizing behavior problems and their relationships with family resiliency after controlling for parenting style. One possibility may involve the

FRI's focus on measuring specific behaviors occurring in a family. It may be that when participants measure externalizing behavior, they are more likely to select specific instances from their memory, while well-being may be an assessment of general feelings. As a result, the relationship between specific instances of behavior problems and memories of specific behavior may account for why the relationship between the FRI and externalizing behavior problems remained significant. Other possibilities could include insufficient power due to a small sample size, or that the WHO-5 was not a valid measure of retrospective childhood well-being. Further research should address the effects of assessing specific behaviors and interactions compared to general assessments of well-being when studying stressful events and family resilience.

Certain limitations to this study should be addressed. First, levels of outcome variables, parental style, and family resilience were all recalled from childhood by college students, most of which between the ages of 18 and 24. Reports of these variables may not be as accurate as reports taken closer to the time of the stressful life event, or reports taken from other sources such as parents or teachers. Furthermore, subsequent stressful life events occurring after the one identified by the participant could affect the participants memory and evaluation of the reported event (Weems et al., 2014). Second, resiliency as conceptualized in this study, assumes standards of behavior and cognition that may not be considered normal or appropriate in other cultures (Buse, Burker, & Bernacchio, 2013). Differences in religions and belief systems, appropriate levels of expression of emotions, and expectations of well-being after stress among different cultures may affect differences in definitions of resiliency in various cultures. Finally, participants in this study were mostly Caucasian women, many enrolled in an

introduction to psychology class, attending a private university in south-central United States. This sample may not be representative of the entire population, so results may not be generalized for all populations.

Despite its limitations, this study provides a very valuable finding. Many established measures of family resiliency are comprised of several subscales that separate different aspects of resiliency including levels of a family's commitment, control, challenge, general functioning, behavioral control, affective involvement, affective responsiveness, roles, communication, and problem solving (Epstein et al., 1983; Skinner et al., 2005). These subscales are all highly correlated with one another, and often do not have different relationships with outcome variables; because these subscales do not differ in their ability to predict outcome variables, and each are so highly correlated with one another, their existence appears to be redundant. On the other hand, the Family Resiliency Index is comprised of two scales that are qualitatively different from one another. While other measures of family resiliency assume that the presence of negative resiliency behavior affects the family in the same manner as the absence of positive resiliency behavior, the Family Resiliency Index measures the presence of both positive and negative resiliency behaviors; in other words, the Family Resiliency Index accounts for fundamental differences between positive and negative behaviors in a family while other measures of family resiliency do not. This theoretical model has been tested in previous research on intimate relationships (Ewart et al., 1991; Skinner et al., 2005) but has not yet been applied to family resiliency after stress. Results suggest that this difference between positive and negative resiliency behaviors may be important in

predicting outcomes and warrants study and consideration in future measures of family resiliency.

Future study of this measure and family resiliency could address some aforementioned limitations and answer many questions still outstanding. Continued study of the Family Resiliency Index may give insight into more differences between the effects of interactions that increase and decrease resiliency, and their effects on outcomes after stress. Future quantitative and statistical analysis of this measure may reveal more interesting psychometric properties. Further research on family resiliency after stress should investigate differences in levels of resiliency reported by different members of the family, and include reports by parents and other children. Furthermore, if outcomes such as children's externalizing behavior are used in research, other raters such as teachers may be useful in assessing subjects. Future studies on family resiliency after stress may investigate how qualitative differences between stressful events may mediate the relationship between interactions that positively and negatively affect resiliency and outcome variables; stressors originating outside of the family such as natural disaster may differ from stressors originating inside the family such as illness of a family member or parental conflict in how behaviors and interactions affect outcomes. Finally, studies investigating how children's outcomes and resiliency are affected by interactions of the family may use children who have recently experienced a stressful life event. By using children's evaluations of different family factors immediately after a stressful event, more accurate levels of their attitudes and outcomes may be attained. Also, future longitudinal studies of these children could provide information about the long-lasting effects of

family functioning after stressful events as well as changes to children's recollection and

evaluation of stressful events in their past as a function of family resiliency.

Table 1
Descriptive Statistics of Measures

	Mean	Standard Deviation
Family Resiliency Index (Positive)	30.35	10.30
Family Resiliency Index (Negative)	23.88	11.10
WHO-5 (Past)	8.38	6.71
WHO-5 (Present)	14.83	4.32
SRQ	2.62	2.45
PSC (Positive)	29.81	6.01
PSC (Negative)	10.28	7.71
FHI	39.55	10.72
FAD	97.85	25.66

WHO-5 (Past) = World Health Organization-5 Well-Being Index rating at the time of the stressful event. WHO-5 (Present) = World Health Organization-5 Well-Being Index rating at the time of data collection. SRQ = The Strengths and Difficulties Questionnaire (Conduct Problems Subscale). PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale). FHI = Family Heartiness Index. FAD = Family Assessment Device.

Table 2
Correlations of Measures

	FRI Positive	FRI Negative	WHO-5 (Past)	SRQ	PSC (Positive)	PSC (Negative)	FHI
FRI Positive	--						
FRI Negative	-0.16	--					
WHO-5 (Past)	0.24*	-0.23*	--				
SRQ	-0.34**	0.45**	0.22*	--			
PSC Positive	0.32**	-0.37**	0.22*	-0.35**	--		
PSC Negative	-0.33**	0.42**	-0.35**	0.29**	-0.83**	--	
FHI	0.56**	-0.60**	0.39**	-0.44**	0.48**	-0.64**	--
FAD	0.63**	-0.59**	0.34**	-0.46**	0.59**	-0.65**	0.83**

$* p < 0.05$, $**p < 0.01$, $***p < 0.001$
WHO-5 (Past) = World Health Organization-5 Well-Being Index rating at the time of the stressful event. WHO-5 (Present) = World Health Organization-5 Well-Being Index rating at the time of data collection. SRQ = The Strengths and Difficulties Questionnaire (Conduct Problems Subscale). PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale). FHI = Family Heartiness Index. FAD = Family Assessment Device.

Table 3

Family Assessment Device Subscale Correlations

	PS	COM	ROL	AF	AI	BC	GF
PS	--						
COM	0.641***	--					
ROL	0.48***	0.65***	--				
AF	0.62***	0.71***	0.62***	--			
AI	0.39***	0.57***	0.54***	0.62***	--		
BC	0.50***	0.69***	0.64***	0.60***	0.57***	--	
GF	0.78***	0.84***	0.65***	0.82***	0.59***	0.64***	--

*** $p < 0.001$

PS = Problem Solving. COM = Communication. ROL = Roles. AF = Affective Responsiveness. AI = Affective Involvement. BC = Behavioral Control. GF = General Functioning

Table 4
Family Hardiness Index Subscale

	CON	COM	CHA
CON	--		
COM	0.56***	--	
CHA	0.43***	0.75***	--

***p < 0.001

CON = Control. COM = Commitment. CHA = Challenge

Table 5

Predicting Well-Being After A Stressful Life Event

	Correlation	Standard Beta
FRI Positive	0.13	0.15
FRI Negative	-0.27**	-0.10
PSC Positive	0.23*	-0.26
PSC Negative	-0.15	-0.47**

***p < 0.001

PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale).

Table 6

Predicting Externalizing Behavior Problems After A Stressful Life Event

	Correlation	Standard Beta
FRI Positive	-0.32**	-0.26**
FRI Negative	0.41**	0.38***
PSC Positive	-0.35**	-0.28
PSC Negative	0.29**	-0.11

$p < 0.05$, **$p < 0.01$

PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale).

Appendix A

The Family Resiliency Index

The FRI was presented through an Internet based system as a part of this study. Before completing the FRI, participants identified and wrote a short description about a stressful life event for their families that took place during their childhood. First, they were given the example about a family eating a meal together. On the next page, made clear here through the label *"page break"*, participants then were provided with their own stressful situation that they had previously provided in the section labeled *"Participant's previously provided stressful life event."* Participants then were given Behaviors 1-9 and were asked to write a very short description about a time in which this behavior occurred. Next, participants were then give the same behaviors 1-9, as well as their previously written descriptions of those behaviors as labeled here by "*Participant's previously provided occurrence of Behavior X."* Participants then rated how well they were able to recall that behavior occurring in their childhood around the time of the stressful event. Finally, participants were given Behaviors 10-18 in the same format as 1-9, and asked to rate how well they were able to recall these occurring during their childhood.

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This section is about behaviors that families sometimes do together. Consider the behavior listed below.

Behavior: You and your family ate a meal together.

Recall a specific example of a time when this particular behavior actually occurred in your family, and remember it well enough so that you can describe at least one thing about the event. Next, think of a word or short phrase that describes one thing you remember about the example you are recalling. This could include:

- something that was said (we talked about a television show)
- something that was done (spilled the milk)
- the location where it took place (picnic at the park)
- any other feature you remember about the event

In the box below, write a word or short phrase that describes one thing you remember about the example you are recalling for the behavior listed at the top of this page.

page break

You identified the stressful situation listed below:

Stressful Situation: *(Participant's previously provided stressful life event)*

This page lists nine different behaviors that may have occurred in your family around the time your family faced the stressful situation you identified.

Can you recall specific examples of these behaviors occurring in your family?

Behavior 1: Around the time of the stressful event, one family member helped another family member view the stressful situation from a good perspective. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

Behavior 2: Around the time of the stressful event, family members laughed together or enjoyed humor together. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

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Behavior 3: Around the time of the stressful event, family members were clear and accurate in their communication about the stressful situation. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

Behavior 4: Around the time of the stressful event, one family member helped another by maintaining a positive attitude and being optimistic.   If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

Behavior 5: Around the time of the stressful event, family members were attentive to each other's needs. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

Behavior 6: Around the time of the stressful event, family members worked together like a team. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

Behavior 7: Around the time of the stressful event, one family member helped another by remaining calm, stable, and strong during the weeks around the time of the stressful situation. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

Behavior 8: Around the time of the stressful event, family members spent time together doing things as a family. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

Behavior 9: Around the time of the stressful event, one family member helped another by using special skills or abilities for addressing the stressful situation. If you can remember an example of this behavior, write a short phrase or word that describes one thing about your memory. If not, write the word "none."

page break

These questions are about your written responses from the previous page about your memories of the nine possible behaviors:

Behavior 1: Around the time of the stressful event, one family member helped another family member view the stressful situation from a good perspective.   When asked to remember an example of Behavior 1, you wrote the following: *(Participant's previously provided occurrence of Behavior 1)*

Were you able to think of a specific example of Behavior 1 occurring in your family?

- o   No, this behavior did not happen
- o   No, although this behavior might have happened, I could not think of an example
- o   No, although this behavior certainly happened, I could not think of an example.
- o   Yes, I was able to think of a specific example.
- o   Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o   Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 2: Around the time of the stressful event, family members laughed together or enjoyed humor together.   When asked to remember an example of Behavior 2, you wrote the following: *(Participant's previously provided occurrence of Behavior 2)*

Were you able to think of a specific example of Behavior 2 occurring in your family

- o   No, this behavior did not happen
- o   No, although this behavior might have happened, I could not think of an example
- o   No, although this behavior certainly happened, I could not think of an example.
- o   Yes, I was able to think of a specific example.
- o   Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o   Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 3: Around the time of the stressful event, family members were clear and accurate in their communication about the stressful situation.   When asked to remember an example of Behavior 3, you wrote the following: *(Participant's previously provided occurrence of Behavior 3)*

Were you able to think of a specific example of Behavior 3 occurring in your family?

- o   No, this behavior did not happen
- o   No, although this behavior might have happened, I could not think of an example
- o   No, although this behavior certainly happened, I could not think of an example.
- o   Yes, I was able to think of a specific example.
- o   Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o   Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 4: Around the time of the stressful event, one family member helped another by maintaining a positive attitude and being optimistic.   When asked to remember an example of Behavior 4, you wrote the following: *(Participant's previously provided occurrence of Behavior 4)*

Were you able to think of a specific example of Behavior 4 occurring in your family?

- o   No, this behavior did not happen
- o   No, although this behavior might have happened, I could not think of an example
- o   No, although this behavior certainly happened, I could not think of an example.
- o   Yes, I was able to think of a specific example.
- o   Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o   Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 5: Around the time of the stressful event, family members were attentive to each other's needs.   When asked to remember an example of Behavior 5, you wrote the following: *(Participant's previously provided occurrence of Behavior 5)*

Were you able to think of a specific example of Behavior 5 occurring in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 6: Around the time of the stressful event, family members worked together like a team.   When asked to remember an example of Behavior 6, you wrote the following: *(Participant's previously provided occurrence of Behavior 6)*

Were you able to think of a specific example of Behavior 6 occurring in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 7: Around the time of the stressful event, one family member helped another by remaining calm, stable, and strong during the weeks around the time of the stressful situation. When asked to remember an example of Behavior 7, you wrote the following: *(Participant's previously provided occurrence of Behavior 7)*

 Were you able to think of a specific example of Behavior 7 occurring in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 8: Around the time of the stressful event, family members spent time together doing things as a family. When asked to remember an example of Behavior 8, you wrote the following: *(Participant's previously provided occurrence of Behavior 8)*

Were you able to think of a specific example of Behavior 8 occurring in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 9: Around the time of the stressful event, one family member helped another by using special skills or abilities for addressing the stressful situation.   When asked to remember an example of Behavior 9, you wrote the following: *(Participant's previously provided occurrence of Behavior 9)*

Were you able to think of a specific example of Behavior 9 occurring in your family?

- No, this behavior did not happen
- No, although this behavior might have happened, I could not think of an example
- No, although this behavior certainly happened, I could not think of an example.
- Yes, I was able to think of a specific example.
- Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- Yes, I was able to think of a specific example, and I could have easily thought of several more.

page break

The following questions will ask you to consider nine more behaviors that may have occurred in your family during the weeks around the time of the stressful situation you identified.

Behavior 10: Around the time of the stressful event, one or more family members withdrew from communication.

Are you able to think of a specific example of Behavior 10 that occurred in your family?

- No, this behavior did not happen
- No, although this behavior might have happened, I could not think of an example
- No, although this behavior certainly happened, I could not think of an example.
- Yes, I was able to think of a specific example.
- Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 11: Around the time of the stressful event, one or more family members were abusive

Are you able to think of a specific example of Behavior 11 that occurred in your family?

- No, this behavior did not happen
- No, although this behavior might have happened, I could not think of an example
- No, although this behavior certainly happened, I could not think of an example.

- Yes, I was able to think of a specific example.
- Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 12: Around the time of the stressful event, one family member made it difficult for another by having a negative attitude and being pessimistic.

Are you able to think of a specific example of Behavior 12 that occurred in your family?

- No, this behavior did not happen
- No, although this behavior might have happened, I could not think of an example
- No, although this behavior certainly happened, I could not think of an example.
- Yes, I was able to think of a specific example.
- Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 13: Around the time of the stressful event, family members failed to notice each other's needs.

Are you able to think of a specific example of Behavior 13 that occurred in your family?

- No, this behavior did not happen
- No, although this behavior might have happened, I could not think of an example
- No, although this behavior certainly happened, I could not think of an example.
- Yes, I was able to think of a specific example.
- Yes, I was able to think of a specific example, and I could have easily thought of one or two more.

o   Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 14: Around the time of the stressful event, one or more family members communicated in a way that denied, ignored, or downplayed the seriousness of the stressful situation.

Are you able to think of a specific example of Behavior 14 that occurred in your family?

- o   No, this behavior did not happen
- o   No, although this behavior might have happened, I could not think of an example
- o   No, although this behavior certainly happened, I could not think of an example.
- o   Yes, I was able to think of a specific example.
- o   Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o   Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 15: Around the time of the stressful event, one or more family members communicated about the stressful situation in a way that was confusing or misleading.

Are you able to think of a specific example of Behavior 15 that occurred in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 16: Around the time of the stressful event, one or more family members were critical, or hostile, or blamed other members.

Are you able to think of a specific example of Behavior 16 that occurred in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 17: Around the time of the stressful event, one or more family members decided it was best to avoid discussing the stressful situation.

Are you able to think of a specific example of Behavior 17 that occurred in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Behavior 18: Around the time of the stressful event, one family member made it difficult for another by being overly emotional, unstable, or weak during the weeks around the time of the stressful situation.

Are you able to think of a specific example of Behavior 18 that occurred in your family?

- o No, this behavior did not happen
- o No, although this behavior might have happened, I could not think of an example
- o No, although this behavior certainly happened, I could not think of an example.
- o Yes, I was able to think of a specific example.
- o Yes, I was able to think of a specific example, and I could have easily thought of one or two more.
- o Yes, I was able to think of a specific example, and I could have easily thought of several more.

Appendix B

Demographic Variables That Predicted Significant Differences in Predictors or Outcome

Variables

Demographic variables collected in this study included current age, gender, race and ethnicity, which parent participants completed the parenting style measure regarding, the type of stressful event reported by the participant, and the age at which the participant was when the stressful event occurred or began. The extent to which each demographic variable was associated with each of the key variables was tested, including measures of well-being, externalizing behavior problems, positive and negative parenting style, family resiliency (measured through the FRI, FAD, and FHI).

Some associations between predictors or outcomes and demographic variables were not significant. Means and standard deviations of measures of racial and ethnic groups are reported in Table B1. To test if there were significant differences in outcome variables based on different ethnic groups, a one-way ANOVA was conducted comparing Whites, Black or African Americans, Hispanic or Latino, Asian or Pacific Islander, or "Other" ethnic groups. There were no significant differences detected in levels of predictor or outcome variables based on race and ethnicity. Table B2 reports means and standard deviations of measures between participants that chose to report on their mother's versus their father's parenting style; t-tests of independent samples showed there were also no significant differences found between participants that completed the PSC regarding their mother or their father. Table B3 reports correlations between

measures and the age of the participant. No significant correlations were found between the age of the participant when the data was collected or at the time of the stressful life event and any predictor or outcome variables. These findings suggest an absence of significant differences in outcome variables based on comparisons of different demographic groups.

An independent samples t-test was used to address differences between gender and both outcome and predictor variables. Means and standard deviations are found in Table B4. Analyses reveal that there was a significant difference in well-being between men and women ($d = 0.30$, t (115) = 1.50, $p < 0.01$), with men reporting significantly higher well-being than women. This difference represents a small effect size. There was also a significant difference between genders in negative parenting style ($d = 0.30$, t(115) = -1.27, $p < 0.05$), with women reporting significantly higher levels of negative parenting style than men. Significant gender differences were not found for any other outcome or predictor variables. Finally, there was a significant difference between genders in externalizing behavior problems ($d = 0.17$, t(115), $p < 0.05$) with men reporting significantly less behavior problems than women. While gender differences in levels of well-being or parenting style were not an addressed hypothesis for this study, future research may look to address how these differences impact resiliency after stressful situations.

People were classified into groups based on the type of event they reported, and these group's levels of predictor and outcome variables were compared. The health group (n = 46) was comprised of people reporting events including the hospitalization or a medical problem, a disability, an emotional or psychological problem, or a death of a

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family member or someone close to the family. The employment and financial group (n = 14) included stresses like a financial problem, loss of a job, lack of employment, housing problems, neighborhood problems, or a family experiencing stress related to military service. The interpersonal group (n = 40) included having problems involving work or school, parents having relationship problems, conflicts with parents, problems involving one's romantic partner, problems with one or more people at school, being the victim of harassment or crime, and violating family rules or expectations. And the other group (n = 17) included all other stressful situation options including a natural disaster or fire, an accident, one's family experiencing legal problems, life changes such as moving, parents changing jobs, the birth of a siblings, and any other event not listed. These groups and their relationships with predictor and outcome variables were compared using a one-way ANOVA. There were significant differences between groups. Means and standard deviations are found in Table B5. The health group was significantly different in levels of externalizing behavior problems from both the interpersonal group (d = 0.71) and the other group (d = 0.89). The health group also had significantly higher levels of Positive FRI (d = 0.66), FHI (d = 0.66), and FAD (d = 0.61) as well as lower levels of Negative FRI (d = -0.85) than the interpersonal group.

Table B1
Group Mean Differences by Race/Ethnicity

	White		Black or African American		Hispanic or Latino		Asian or Pacific Islander		Other		Eta Squared
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
FRI Positive	30.44	11.05	29.77	11.32	32.40	7.38	26.89	9.12	31.00	2.83	0.02
FRI Negative	24.11	11.19	26.77	11.32	21.80	10.77	20.11	10.24	34.50	12.02	0.04
WHO-5	8.82	6.59	8.15	8.13	5.75	4.82	12.78	7.21	0.50	0.71	0.08
SRQ	2.59	2.48	2.00	2.04	2.85	2.83	2.89	2.20			0.02
PSC Positive	30.40	5.73	27.69	8.40	29.05	6.17	31.11	4.37	24.00	4.24	0.04
PSC Negative	9.29	7.68	12.85	7.61	12.05	7.54	8.11	6.01	22.00	7.07	0.08
FHI	40.04	11.17	39.46	8.85	39.45	11.10	39.00	8.97	25.50	4.95	0.03
FAD	97.53	25.76	99.31	22/74	101.15	30.26	98.00	18.49	66.00	1.41	0.03

p < 0.05, **p < 0.01
WHO-5 (Past) = World Health Organization-5 Well-Being Index rating at the time of the stressful event. WHO-5 (Present) = World Health Organization-5 Well-Being Index rating at the time of data collection. SRQ = The Strengths and Difficulties Questionnaire (Conduct Problems Subscale). PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale). FHI = Family Heartiness Index. FAD = Family Assessment Device.

Table B2
Group Mean Differences by Selected Parent for Parenting Style Measure

| | Mother | | Father | | |
	Mean	Standard Deviation	Mean	Standard Deviation	d-statistics
FRI Positive	29.53	10.09	33.91	10.62	0.42
FRI Negative	23.18	10.87	26.91	11.80	0.33
WHO-5 (past)	7.88	6.40	10.55	7.71	0.38
SRQ	2.75	2.43	2.05	2.52	0.28
PSC Positive	29.98	5.94	29.09	6.74	0.14
PSC Negative	10.19	7.37	10.68	9.23	0.06
FHI	39.12	10.47	41.41	11.85	0.20
FAD	97.98	25.34	97.27	27.64	0.03

$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

WHO-5 (Past) = World Health Organization-5 Well-Being Index rating at the time of the stressful event. WHO-5 (Present) = World Health Organization-5 Well-Being Index rating at the time of data collection. SRQ = The Strengths and Difficulties Questionnaire (Conduct Problems Subscale). PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale). FHI = Family Heartiness Index. FAD = Family Assessment Device.

Table B3
Relationship Between Measures and Participant's Age

	Age of Participant at the Time of Data Collection	Age of the Participant at the Time of the Stressful Event
FRI Positive	-0.08	0.12
FRI Negative	0.11	0.13
WHO-5 (past)	0.02	-0.11
SQR	0.15	0.08
PSC Positive	-0.14	-0.02
PSC Negative	0.03	0.05
FHI	-0.01	-0.00
FAD	-0.05	-0.03

$*p<0.05, ** p<0.01, ***p < 0.001$

WHO-5 (Past) = World Health Organization-5 Well-Being Index rating at the time of the stressful event. WHO-5 (Present) = World Health Organization-5 Well-Being Index rating at the time of data collection. SRQ = The Strengths and Difficulties Questionnaire (Conduct Problems Subscale). PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale). FHI = Family Heartiness Index. FAD = Family Assessment Device.

Table B4
Group Mean Differences by Gender

| | Men | | Women | | |
	Mean	Standard Deviation	Mean	Standard Deviation	d-statistics
FRI Positive	31.19	10.56	30.10	10.26	0.14
FRI Negative	22.41	9.74	24.32	11.49	0.18
WHO-5 (past)	10.04	8.12	7.88	6.19	0.30**
SRQ	2.41	2.04	2.68	2.57	0.12*
PSC Positive	30.26	4.86	29.68	6.41	0.10
PSC Negative	8.63	5.94	10.78	8.13	0.30*
FHI	42.30	9.11	38.72	11.07	0.35
FAD	102.56	19.84	96.43	27.11	0.26

$p < 0.05$, **$p < 0.01$

WHO-5 (Past) = World Health Organization-5 Well-Being Index rating at the time of the stressful event. WHO-5 (Present) = World Health Organization-5 Well-Being Index rating at the time of data collection. SRQ = The Strengths and Difficulties Questionnaire (Conduct Problems Subscale). PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale). FHI = Family Heartiness Index. FAD = Family Assessment Device.

Table B5
Group Mean Differences by Type of Stressful Event

	Health		Employment and Financial		Interpersonal		Other		Eta Squared
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
FRI Positive	34.11[a]	8.01	27.64	9.96	27.65[a]	11.20	28.76	11.56	0.09*
FRI Negative	19.93[a]	10.32	22.07	8.55	28.90[a]	10.89	24.24	11.58	0.12**
WHO-5	7.26	5.60	10.79	5.49	8.73	8.04	8.65	6.89	0.03
SRQ	1.72[ab]	2.06	1.86	1.61	3.33[a]	2.44	4.00[b]	2.96	0.14**
PSC Positive	31.17	5.49	30.50	5.26	28.86	6.37	27.76	7.01	0.05
PSC Negative	8.09	7.45	8.64	5.51	12.15	7.51	13.18	8.89	0.08*
FHI	42.50[a]	10.35	41.14	9.27	35.58[a]	10.65	39.59	10.92	0.08*
FAD	106.02[a]	25.85	96.71	20.65	90.20[a]	26.26	94.65	22.76	0.07*

$p < 0.05$, **$p < 0.01$
Means with same subscript differ from each other (Tukey HSD test)
WHO-5 (Past) = World Health Organization-5 Well-Being Index rating at the time of the stressful event. WHO-5 (Present) = World Health Organization-5 Well-Being Index rating at the time of data collection. SRQ = The Strengths and Difficulties Questionnaire (Conduct Problems Subscale). PSC (Positive) = The Parents as a Social Context Questionnaire (for Adolescent) (Positive Scale). PSC (Negative) = The Parents as a Social Context Questionnaire (for Adolescent) (Negative Scale). FHI = Family Heartiness Index. FAD = Family Assessment Device.

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