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## Reevaluating the Factor Structure of the Family Resilience Assessment Scale for African American College Students

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**REEVALUATING THE FACTOR STRUCTURE OF THE FAMILY RESILIENCE  
ASSESSMENT SCALE FOR AFRICAN AMERICAN COLLEGE STUDENTS**

by

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B.S. December 2012, Virginia Commonwealth University

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Approved by:

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## **ABSTRACT**

### **REEVALUATING THE FACTOR STRUCTURE OF THE FAMILY RESILIENCE ASSESSMENT SCALE FOR AFRICAN AMERICAN COLLEGE STUDENTS**

Quandrea Rachelle Harper  
Virginia Consortium Program in Clinical Psychology, 2022  
Director: Dr. Scott Debb

The purpose of this study was to reevaluate the initial validation process of the Family Resilience Assessment Scale (FRAS) and to validate the measure for use with African Americans. Although the FRAS has been previously validated using a sample from the general population in the U.S. and has demonstrated cross-cultural utility, its applicability for use specifically with African Americans is inconclusive, as demonstrated by preliminary research findings. In the current study, data were collected from a sample of African American college students to conduct an exploratory factor analysis using all 66 items initially included in Sixbey's validation study, and a follow-up confirmatory analysis to determine if a more reliable component factor structure for African Americans could be derived for the measure of family resilience. Among a sample of African American college students, factor analyses revealed a five-factor model consisting of 42 items that appear to be salient familial risk and protective factors for African Americans. Results of the study contribute to a broader understanding of family resilience indicators for this group.

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This dissertation is dedicated first and foremost to my creator. With God, all things are possible. To my father, Rev. Gilbert Harper, Sr., my late mother, Rev. Quita Fisher Harper, and my three-year-old son, Levi, who have always been sources of strength and motivations for my success, I could not have done this without you. I also want to thank all of my family and friends who contributed and were supportive over the years. For every long day and late night that many of you cheered me on, I am forever grateful.

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## TABLE OF CONTENTS

|  | Page |
|--|------|
| LIST OF TABLES .....                                     | vii  |
| LIST OF FIGURES .....                                    | viii |
| <br>   |      |
| INTRODUCTION .....                                       | 9    |
| WALSH’S CONCEPTUAL MODEL.....                            | 10   |
| PROTECTIVE EFFECTS .....                                 | 13   |
| FAMILY SUPPORT .....                                     | 14   |
| PURPOSE OF THE CURRENT STUDY.....                        | 16   |
| STUDY AIMS.....  | 17   |
| METHODOLOGY .....  | 18   |
| PARTICIPANTS.....  | 18   |
| PROCEDURE .....  | 18   |
| MEASURES.....  | 19   |
| EXAMINATION OF THE FACTOR STRUCTURE OF THE FRAS.....     | 20   |
| STATISTICAL APPROACH.....                                | 21   |
| RESULTS .....  | 24   |
| PRELIMINARY ANALYSES.....                                | 24   |
| FACTOR ANALYSIS.....                                     | 25   |
| SUMMARY OF RESULTS .....                                 | 36   |
| DISCUSSION.....  | 37   |
| RETHINKING FAMILY RESILIENCE FOR AFRICAN AMERICANS ..... | 37   |
| REVISED FACTOR STRUCTURE .....                           | 39   |
| LIMITATIONS OF THE STUDY .....                           | 40   |
| FUTURE RESEARCH.....                                     | 42   |
| CONCLUSION.....  | 44   |
| REFERENCES .....   | 46   |
| APPENDICES .....   | 56   |
| A. DEMOGRAPHIC QUESTIONNAIRE.....                        | 56   |
| B. FAMILY RESILIENCE ASSESSMENT SCALE (FRAS).....        | 58   |
| C. FRAS – AFRICAN AMERICANS (FRAS-AA) .....              | 61   |
| D. FRAS-AA SCORING TOOL.....                             | 63   |
| <br>   |      |
| VITA.....  | 65   |

**LIST OF TABLES**

| Table   | Page |
|---|------|
| 1. Subscales and Nine-Factor Solution of Sixbey's 66-item FRAS .....              | 20   |
| 2. Descriptive Statistics for Participant Demographics .....                      | 24   |
| 3. Deleted Items .....  | 27   |
| 4. Reliability of the Five Subscales and Total Scale of the 42-item FRAS-AA ..... | 27   |
| 5. Item-Total Correlations .....  | 28   |
| 6. Subscale Comparison of the FRAS-AA to the FRAS .....                           | 30   |
| 7. Parallel Analysis Eigenvalues.....   | 32   |
| 8. Correlations for the Latent Variables.....                                     | 34   |
| 9. FRAS-AA CFA Loadings .....   | 35   |



**LIST OF FIGURES**

| Figure                   | Page |
|--------------------------|------|
| 1. PA Sequence Plot..... | 31   |

## INTRODUCTION

The probability of failure to reproduce findings in experimental disciplines was described as an issue long ago (Watson, 1913). Researchers continually emphasize the need for empirical investigations to enhance conceptual models and theories, and to develop well-designed measures to quantify specific constructs (Allen & Clough, 2015). Ongoing empirical investigation is suggested to validate an instrument's credibility, ensuring that it is reliable across populations other than the one for which it was initially developed for (Sixbey, 2005a; van Widenfelt Treffers et al., 2005). A psychometrically equivalent measure assesses the same latent constructs as the original validation measure on a distinct group (Hays et al., 1993). The Family Resilience Assessment Scale (FRAS; Sixbey, 2005b) is a measure of family resilience that has been applied with diverse ethnic and cultural groups but has yet to be validated with African Americans. The purpose of the current study is to test and validate the FRAS with a sample of African Americans.

Family resilience has been studied in several theoretical contexts and by the 21<sup>st</sup> century, more than 1,000 family-based measures were available for clinical and research use (Sixbey, 2005a). Despite this, there has been a lack of consensus regarding the most important constructs among available measures. Sixbey sought to unify a conceptual model of family resilience with theoretical underpinnings to develop a self-report instrument with appropriate psychometric properties. Although Sixbey's measure has been widely used and adapted for various groups, its use with African Americans has not been supported based on existing research (Harper & Debb, 2020). A valid and reliable instrument that assesses family resilience for African Americans may provide insight by identifying pertinent family resilience processes for this group. Accordingly, it

is vital to ensure that a measurement tool assessing family resilience, such as the FRAS, adequately captures all aspects of this multidimensional construct.

### **Walsh's Conceptual Model**

Family resilience incorporates the complexities between an individual, family, and relationships, learned behavior, and the development of one's ability to adapt (Walsh, 2003). Walsh's theory of family resilience emphasizes social support and larger sociocultural influences as buffers for individuals to manage stress and major life crises that often entails subsequent disruption. According to this framework, enduring stressful conditions provides an opportunity for families and individuals to overcome obstacles through the mutual support of each individual member.

Walsh's (2003) approach is categorized by three overarching constructs and three specific factors related to each construct. The first construct is Belief Systems, including (a) making meaning of adversity, (b) positive outlook, and (c) transcendence and spirituality. Belief Systems account for the family's ability to problem-solve as a unit, rely on faith or spirituality, and accept support from the community during difficult times. The second construct is Organizational Patterns, made up of (a) flexibility, (b) connectedness, and (c) social support. This construct identifies adaptability to problematic situations and the family's sense of togetherness. The third construct is Communication/Problem-Solving, which identifies factors associated with (a) clarity of communication, (b) open emotional expression, and (c) collaborative problem-solving. Communicative and open sharing is believed to promote adaptive behaviors by verbalization and recognition of feelings in this model. Walsh's framework was developed to serve as a guide to target the identified contributors to individual well-being and family functioning.

### ***Family Resilience Assessment Scale***

Sixbey developed the FRAS (2005b) based on Walsh's (2003) family resilience model. The original validation of the FRAS was based on a general population sample of 418 adults between the ages of 18-65 living in Florida. Internal reliability was acceptable with subscale alpha coefficients ranging from  $\alpha = 0.70$  to  $\alpha = 0.96$  and individual item factor loadings that were all 0.30 or higher (Sixbey, 2005a), demonstrating good internal reliability. Factor analysis indicated that six out of the nine original constructs identified by Walsh were optimal for measuring family resilience, resulting in the following subscales: Family Communication and Problem Solving (FCPS), Utilizing Social and Economic Resources (USER), Maintaining a Positive Outlook (MPO), Family Connectedness (FC), Family Spirituality (FS), and Ability to Make Meaning of Adversity (AMMA).

Although the sample used in the original FRAS validation study included different ages, races, genders, education levels, and income levels, most participants were Caucasian (86%), female (76%), and had completed a bachelor's degree or master's degree (62%). Participants' responses regarding their ethnicity, indicated that the study was comprised of 9% African Americans, 3% Hispanics, and 2% Asians. The lack of diversity in this sample highlights the gender, race, cultural, and class biases that limit the generalizability of the FRAS and suggests the need for more research to better understand its applicability for use in other populations.

**Adaptability.** The FRAS has been adapted, modified, and validated for use in several culture-specific contexts (Carpena, 2015). Shortened versions of the scale were successfully created to assess family resilience of families with a parent who was chemically dependent (Lum, 2008) and of women diagnosed with breast cancer (Lane, 2011). The FRAS has been adapted and subsequently validated for use in a myriad of countries such as China (Li et al.,

2016), Croatia (Feric et al., 2016), Greece (Kavaliotis, 2017), Malta (Dimech, 2014), Poland (Nadrowska et al., 2017), Singapore (Chew & Haase, 2016), South Africa (Simelane, 2015), and Turkey (Kaya & Arici, 2012). Validation of the measure across these different cultural groups demonstrates its cross-cultural utility.

Harper and Debb (2020) aimed to confirm the existing six-factor structure of the FRAS with a sample of African Americans, and then utilize the measure to assess the relationship between family resilience and academic performance for African American college students. The authors noted acceptable internal reliability of the FRAS and given the large support for the measure's original factor structure in the literature (Sixbey, 2005b), it was hypothesized that the factor structure with their sample should have been comparable to the original validation study. Based on this premise, a confirmatory factor analysis (CFA) was conducted with an African American college student sample ( $n = 271$ ) and a Caucasian college student sample ( $n = 169$ ) for comparison. However, the FRAS demonstrated a poorly fitting model ( $\chi^2(1362) = 5975.27$   $p < .001$ ; RMSEA = 0.80, 90% Confidence Interval (CI) = 0.07–0.08, SRMR = 0.08; CFI = 0.84).

Harper and Debb's analyses revealed high internal reliability of the FRAS' total scale ( $\alpha = 0.97$ ) but there was high multicollinearity among items and a large number of modification indices. Failing to meet statistical assumptions, respecification of the model was unsupported (Perry et al., 2015; Schmitt, 2011) and the existing factor structure remained unconfirmed as it applied to the African American sample. As a result, the relationship between family resilience and African American student academic outcomes (i.e., GPA) could not be examined. It was determined that more research was needed to demonstrate appropriateness of the FRAS for use with African Americans.

Results of this study suggested that an alternative model to describe family resilience may have been more suitable for African Americans. However, the FRAS appeared face valid and there were no noticeably significant abnormalities during sampling. Accordingly, it was recommended that a new dataset be obtained to reevaluate the FRAS and determine if a more appropriate factor structure could be gleaned, utilizing the original 66-item question pool that was ultimately winnowed down to 54 based on a sample that was not representative of African Americans.

### **Protective Effects**

Resilience, which is the ability to persevere, is conceptualized as the complex interplay among individual and systemic factors over the course of development (Prince-Embury & Saklofske, 2014). Individual (e.g., self-concept, communication) and family characteristics (e.g., communication, parenting style) are frequently characterized as protective or risk factors, depending on their contribution to promote or challenge resilience (Khanlou & Wray, 2014; Forrest-Bank et al., 2015). African Americans are at greater risk of experiencing psychological distress compared to other racial groups because of challenges faced and available coping resources which are often representative of their family structure, social environment, and culture (Brown & Tylka, 2011). Further, chronic and systemic racism and discrimination compound major issues such as disparities in health and education for African Americans, which negatively impact their coping abilities (Utsey et al., 2007). In the context of resilience, family interconnectedness is culturally relevant because it represents a way of dealing with historically based societal prejudice that many African Americans involuntarily encounter on a daily basis (Matlin et al., 2011). The need to identify pertinent risk and protective factors for African

Americans is paramount as it relates to the development of resilience and the ability to predict positive outcomes for these individuals.

### ***Family Support***

There is an emerging body of research highlighting the protective aspects of family relationships for African Americans. African Americans encounter culture-specific barriers (e.g., having fewer economic resources, being regularly confronted with their minority status) that may impede their ability to positively adapt in the midst of adversity (Budescu & Silverman, 2016; Darney et al., 2013). African Americans who receive more support from their families, report greater life satisfaction (Taylor et al., 2001), lower levels of psychological distress (Lincoln et al., 2003), and are less likely to meet criteria for depression and other mental health disorders (Lincoln & Chae, 2012; Lincoln et al., 2005). Overall, African Americans' mental and emotional health seems to be positively associated with family support.

Family emotional support is considered one of the most significant protective factors that buffers the negative impact of environmental challenges and promotes long-term positive academic outcomes for African Americans (Bradshaw et al., 2009; Darney et al., 2013; Vanderbilt et al., 2015; Williams & Bryan, 2013). African American students' effort to cope within an antagonistic society and persevere academically is strongly related to family involvement (Cheng et al., 2012; DeDonno & Fagan, 2013; Korgan & Durdella, 2016; Matlin et al., 2011; Utsey et al., 2007). Budescu & Silverman's (2016) research on the adjustment of college students emphasized the importance of a dynamic family system on an individual's development into adulthood. African Americans in this study were more likely to report significantly higher perceived emotional support from their family compared to their White and Asian counterparts. Perceived emotional kin support positively correlated with self-esteem,

academic efficacy, and academic dedication and negatively correlated with psychological distress, which was also reported more frequently by African American participants. Combined, these results suggest that familial support positively impacts African Americans' ability to function and persevere. Yet the impact of family resilience for African Americans is only broadly understood.

**Distinction of Family Resilience.** Although there is limited evidence to support the notion that African Americans are better able to cope with environmental stressors when they receive family support during times of stress (Hooper, 2009; Williams & Bryan, 2013), family support is often viewed in the context of financial provision, parent and family structure, and time spent with family (Brooks, 2013; DeDonno & Fagan, 2013). However, this broad perspective fails to account for family resilience as a system that is formed by the interaction between an individual and family bonds. Family resilience strengthens one's ability to cope, as family messages are incorporated and activated in the midst of adversity which generates intrinsic support for individuals (Hooper, 2009). Ongoing family processes and the relevance of family-based contextual factors are often considered fundamental in African American culture but are often ignored when assessing African Americans' resilience and related outcomes (Williams & Bryan, 2013). Therefore, considering family resilience to identify protective factors that promote resilience and predict positive outcomes for this group seems highly salient.

### **Purpose of the Current Study**

Currently, there is no known measure of family resilience that is reliable and can be used to assess this construct specifically with African Americans. The FRAS (Sixbey, 2005b) is a measure of family resilience that has been widely utilized and includes a theoretical approach accounting for the value of family resilience. However, disagreement regarding the cultural



validity of the assessment instrument and the factor structure exists. Further, there is one known study that has assessed the utility of the FRAS with African American college students through confirmatory factor analysis, but the results suggested a poor fitting model for this group (Harper & Debb, 2020). The goal of this study is to validate the FRAS to identify an appropriate factor structure for use with a new sample of African American college students. Although the findings from the current study may not generalize to the African American population as a whole, analyses may aid in revealing how to more adequately examine pertinent family resilience processes relevant to this population. The research questions and the corresponding aim and hypothesis for this study are as follows:

**Research Questions:** Will reevaluation of the factor structure of the original 66-item FRAS result in good model fit for a sample of African American college students? Does the factor structure support Walsh's (1998) model of family resilience and Sixbey's (2005b) measure of resilience?

### **Study Aims**

**Aim 1:** To reassess the validity and reliability of the FRAS for use with an African American college student sample and to explore which factors emerge based on the original pool of items used to create the FRAS.

**Hypothesis 1a.** Exploratory factor analysis (EFA) will reveal an incomparable component structure for a sample of African American college students than what was originally found in Sixbey's validation study.

**Hypothesis 1b.** Each scale and subscale of the family resilience measure based on the identified factor structure will demonstrate high internal consistency with alpha coefficients greater than 0.70.

**Aim 2.** To test the model fit of the identified factor structure of the family resilience measure using an African American college student sample.

*Hypothesis 2.* Results from a confirmatory factor analysis (CFA) will demonstrate good model fit based on EFA results for the current sample.

## **METHODOLOGY**

### **Participants**

Following institutional review board from each institution, participants were recruited from Norfolk State University (NSU) and Old Dominion University (ODU). Data were initially collected in the Spring of 2021, and then again in the Spring of 2022 in an effort to increase power and sample size. Participation criteria included identifying as African American, 18 years old or older, and current enrollment as a student at either institution. Participants were provided informed consent and information about their rights as human subjects, potential risks, and benefits of completing the survey administration, researcher and review board contact information, and referral information for each corresponding university's counseling center due to the personal nature of the questions asked. This research study followed ethical guidelines set by the American Psychological Association for the protection of human subjects and confidentiality of data collected (APA, 2016).

### **Procedure**

All survey materials were administered online through the secure Qualtrics survey platform and confidentiality of the data were maintained at all times. Surveying consisted entirely of self-report measures and took approximately 10 minutes to complete. At ODU, students were recruited through the SONA Research Participation System, whereas students at NSU were recruited via email and in-class announcements. No students were provided direct compensation or incentives from the researcher for their participation. However, students who participated through SONA received course credit in a manner consistent with ODU guidelines.

## Measures

**Demographics.** Participants were asked to provide their age, academic year, ethnicity, parent's education, and family income (Appendix A). Demographic variables were used to help describe the sample and identify potential covariates in statistical analyses.

**GPA.** Students were asked to provide a self-report of their cumulative GPA (Appendix A). Students were also asked to indicate on a Likert scale how accurate they believe their self-reported GPA is, including an option for them to indicate if they reviewed their actual GPA from their university's official documentation prior to indicating it on the survey.

**Family Resilience.** The FRAS is a 54-item measure of family resilience consisting of six subscales (Sixbey, 2005b). Respondents are asked to rate their family resilience on a four-point Likert scale with response options ranging from 1 (strongly agree) to 4 (strongly disagree). Total scores on the FRAS can range between 54 and 216, with lower scores suggesting minimal resilience within the family and higher scores indicating high levels of resilience in the family. In Sixbey's (2005b) initial study, the 54-item FRAS demonstrated high reliability, with a total scale alpha coefficient of  $\alpha = .96$  and an average score of  $M = 163.70$ . As previously indicated, there is debate regarding the consistency of the originally identified factor structure across cultures, which were examined in this study. For this study, the initial 66-item pool that was developed through expert consensus for the FRAS was utilized (see Appendix B). Total scores on the 66-item FRAS range from 66 to 264 and it demonstrated high reliability ( $\alpha = .95$ ; Sixbey, 2005b). The subscale names and corresponding reliability coefficients from Sixbey's nine-factor solution of the 66-item FRAS can be found in Table 1.

**Table 1***Subscales and Nine-Factor Solution of Sixbey's 66-item FRAS*

|             | Subscale                       | Cronbach Alpha |
|-------------|--------------------------------|----------------|
| Subscale A: | Family Belief Systems          | 0.82           |
| A1:         | Making Meaning of Adversity    | 0.74           |
| A2:         | Positive Outlook               | 0.58           |
| A3:         | Transcendence and Spirituality | 0.62           |
| Subscale B: | Family Organizational Patterns | 0.88           |
| B1:         | Flexibility                    | 0.43           |
| B2:         | Connectedness                  | 0.60           |
| B3:         | Social and Economic Resources  | 0.83           |
| Subscale C: | Communication/Problem-Solving  | 0.90           |
| C1:         | Clarity                        | 0.66           |
| C2:         | Open Emotional Expression      | 0.74           |
| C3:         | Collaborative Problem Solving  | 0.80           |
| Total Scale |                                | 0.95           |

**Examination of the Factor Structure of the FRAS**

Scale validation is an ongoing process and in some cases, the proposed factor model of a scale may warrant reevaluation if the original scale development study was flawed or if subsequent studies have identified differences in a particular scale's factor structure, threatening the validity of the scale. Factor analysis provides evidence of construct validity and is employed for the purpose of developing and validating individual scales. According to Flora and Flake (2017), the process of factor analysis when a scale is created entails an observance of individual items by factor which is analyzed using an adequate size sample from the population of interest in which the scale is meant to be used. It is recommended that an EFA be used for initial scale development to identify incorrect predictions of the factor structure and meaningful cross-loadings, whereas the CFA is helpful in determining whether the model adequately fit the data and is typically used in later phases of scale development (Brown, 2015). If a CFA approach is

taken as a first step and has not adequately fit sample data, researchers can choose to make an attempt to fit the CFA model or to conduct an EFA. As stated previously, CFA was conducted initially in preliminary research based on the pre-existing theoretical construct and latent factor structure of the FRAS but the results demonstrated a misspecified model of the 54-item FRAS when examining a sample of African American college students (Harper & Debb, 2020).

Therefore, it was determined that conducting an EFA with the original pool of FRAS items generated prior to winnowing during the initial validation of the measure would help identify the most relevant factor model for African Americans. Parallel analysis (PA) is often used in conjunction with EFA to further assess these findings and was deemed appropriate for the current study. PA was created by Horn (1965) to minimize the overidentification of factors by identifying the correct number of factors to extract in EFA. PA utilizes either a randomly generated data set or an existing dataset to run Monte Carlo simulations. Simulated data generate a 95<sup>th</sup> percentile cutoff to formally test the probability that a factor is due to chance and this approach is known to be superior to sole reliance on eigenvalues or scree plots computed in factor analysis (Wood et al., 2015). Subsequently, a revised factor structure was expected after running a CFA.

**Power Analysis.** Recommended variable-to-subjects ratio for EFA and CFA suggests a minimum 5:1 and a maximum 20:1 ratio (Grimm & Yarnold, 1995; Kline, 2011; Tabachnick & Fidell, 2013). As such, this study aimed to recruit a minimum of 330 participants for EFA and a separate sample of 330 for CFA, given the 66-item FRAS. Accordingly, it was determined that a total of 660 participants was needed to ensure a high degree of interpretability of the results.

**Statistical Approach.** Descriptive statistics for all items were analyzed prior to analyses. Skewness and kurtosis values were generated and visually represented with histograms to

examine normality of the data. Correlations were observed to identify relatedness between all items and demographic variables. Prior to analyses, factorability of the data was analyzed by checking the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. Factor analysis is deemed appropriate if KMO scores are above 0.5 and closer to 1 (Kaiser & Rice, 1974), and if Bartlett's test is significant ( $p < 0.05$ ), demonstrating correlation among variables (Tabachnick & Fidell, 2013).

Factor analysis requires five main assumptions (Tabachnick & Fidell, 2013). First, there should be known and unknown values to be estimated. The use of Sixbey's factor structure and observations of factor loadings supported by the analysis met this assumption. All standard assumptions must be met which are unobserved common dimensions, interval or ratio data, factors that have a mean of zero, variances of factors being equal to one, and the absence of high multicollinearity. To meet this assumption, the correlation matrix and communalities were observed. Other common statistical assumptions (i.e. normal distribution, homoscedasticity, and independence of predictor variables) were examined by reviewing histograms for each item, boxplots, scatterplots, and a correlation matrix. The assumption of linearity was tested by examining scatterplots. Assumptions of independence of observations and a multivariate normal distribution are also required which were examined by skewness and kurtosis values and testing for outliers.

Principal factor analysis extraction methods were used to analyze the data and results were interpreted based on Tabachnick and Fidell's (2013) recommendations. Factors were retained based on the scree plot (elbow test), communality estimates (typically greater than 0.80), and eigenvalue observations (greater or equal to 1). Oblique rotation was used to allow for factors to be correlated when rotated and factor loadings were interpreted using the pattern

matrix. Although a matter of researcher preference, the authors provide a range of interpretable factor loadings between 0.32 and 0.71 and describe the use of a lower cutoff when homogeneity of scores in the sample is suspected. A minimum factor loading of 0.32 for the current sample was required for each item, representing the unique correlation of the factor with the variable.



## RESULTS

### Preliminary Analyses

Data were screened to assess normality, missingness, and assumptions prior to conducting any analyses, using IBM SPSS Statistics (Version 26). A total of 735 individuals responded to the study, however, there were 189 substantially incomplete responses with no FRAS data, resulting in a sample of 546 participants. As part of the study criteria, all participants identified as African American or Black. The largest portion of the sample was comprised of ODU college students (75%) and the remaining were affiliated with NSU (25%). Participants ranged in ages from 18 to 57 and the average age of respondents was 22.15 years ( $SD = 5.90$ ). Respondents' academic classification was spread rather evenly between groups, although the majority of individuals reported senior status. Participants reported a mean GPA of 2.90 ( $SD = 0.73$ ). The majority of students indicated their primary maternal caregiver's highest level of education as some college or Associate's degree ( $n = 172$ ) and their paternal caregiver's highest level of education as high school diploma ( $n = 196$ ). Table 2 is presented with descriptive statistics for participant demographics.

**Table 2**

*Descriptive Statistics for Participant Demographics*

| Demographic   | <i>N</i> | <i>M (SD)</i> | Range [Min, Max] | Skewness ( <i>SE</i> ) | Kurtosis ( <i>SE</i> ) |
|---------------|----------|---------------|------------------|------------------------|------------------------|
| Age           | 492      | 22.16 (5.91)  | 39 [18,57]       | 2.61 (.110)            | 7.24 (.220)            |
| GPA           | 539      | 2.90 (.73)    | 4 [0,4]          | -1.325 (.105)          | 2.905 (.210)           |
| Academic Year | 544      | 2.51 (1.21)   | 4 [0,4]          | .007 (105)             | -1.56 (209)            |
| Freshman      | 162      |               |                  |                        |                        |
| Sophomore     | 113      |               |                  |                        |                        |
| Junior        | 103      |               |                  |                        |                        |
| Senior        | 168      |               |                  |                        |                        |

Descriptive statistics for all items were analyzed and a composite FRAS score was created to assess univariate outliers via boxplots. One significant outlier more than four standard deviations above the mean was found and deleted. Data were then inspected for missingness through a missing value analysis, demonstrating less than 5% of missingness of all variables. Therefore, only complete cases were used for EFA and maximum likelihood was used to address missing data for CFA per the recommendations of Schlomer et al. (2010). Skewness and kurtosis values were generated and visually represented with histograms to examine normality of the data. All levels of skewness and kurtosis were acceptable, falling below 3.0 and 20.00, respectively. Correlations were observed to identify relatedness between all items and demographic variables. Prior to analyses, factorability of the data was analyzed by checking the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity per acceptable guidelines (Kaiser & Rice, 1974; Tabachnick & Fidell, 2013). The KMO score was .922 and Bartlett's test was significant, therefore factor analysis was deemed appropriate.

### **Factor Analysis**

**Exploratory Factor Analysis.** An EFA was conducted with the initial pool of 66 items from Sixbey, (2005a), using IBM SPSS Statistics (Version 26). Principal factor analysis extraction methods were used to analyze the data and oblique rotation was used to allow for factors to be correlated when rotated and factor loadings were interpreted using the pattern matrix. Based on Tabachnick and Fidell's (2013) recommendations, it is suggested that factors be retained based on the scree plot (elbow test), communality estimates (greater than 0.80), and eigenvalue observations (greater or equal to 1). A minimum loading of 0.32 was required for items to load on each factor, representing the unique correlation of the factor with the variable.

The initial EFA identified a 13-factor solution, however, this was not acceptable. The first subscale contained the majority of the items ( $n = 46$ ). Eigenvalues, variance explained, and the scree plot revealed that variance began to drop lower beyond seven subscales, with many of these subscales containing 3 items or less. A seven-factor solution was tried based on the eigenvalue rule of being greater than 1 (Kaiser, 1960; Pallant, 2007). The first factor accounted for 30%, over half of the total variance explained by the model. The other factors collectively explained 23% of the variance. Since the eigenvalue rule tends to overestimate the number of factors to retain, the scree plot and communalities were also reviewed, suggesting the retention of possibly five or six factors. The total scale reliability for 66 items was  $\alpha = .951$ .

A six-factor solution was tried, which accounted for 51% of the variance, with the largest amount being explained by the first factor, comparable to the initial EFA. Factor analysis and reliability analysis were used as an iterative process to test internal consistency and reliability of the best identified combination of items of the FRAS and its constructs. Items loading on more than one factor or that failed to add to the reliability of its subscale and total scale were deleted. A total of 24 items, including one subscale of three items, were deleted, resulting in a shortened 42-item solution comprised of five subscales (see Table 3 for a list of deleted items). The five-factor scale accounted for 56% of variance with subscale reliability coefficients between  $\alpha = .681$  and  $\alpha = .961$ . The Cronbach's alpha for the total scale was  $\alpha = .95$ , suggesting very high internal consistency and reliability, The total scale ranges from 42 to 168 with a mean scale score of 84.74 and a standard deviation of 19.03. Interitem correlations fell within the recommended range of .15-.50 and higher, suggesting measures of broad and narrow latent constructs (Clark & Watson, 1995). Refer to Table 4 for scale reliability coefficients and Table 5 for item-total correlations.

**Table 3***Deleted FRAS Items*

- 
- (1) Every family has problems  
 (4) Our friends are a part of everyday activities  
 (6) The rules in our family are not set in stone  
 (7) The rules in our family change according to family needs  
 (8) The things we do for each other make us feel a part of the family  
 (13) We are adaptable to demands placed on us as a family  
 (14) We are careful how much we do for friends  
 (15) We are careful what we say to each other  
 (20) We believe friends can take advantage of us  
 (21) We believe we can handle our problems  
 (41) We feel secure living in this community  
 (42) We feel taken for granted by family members  
 (43) We feel we are strong in facing big problems  
 (44) We get upset if someone complains in our family  
 (46) We have faith in a supreme being  
 (47) We have the strength to solve our problems  
 (48) We keep our feelings to ourselves  
 (52) We mean what we say to each other in our family  
 (53) We participate in activities specifically for our situation  
 (57) We seldom listen to family members concerns or problems  
 (60) We tell each other how much we care for one  
 (62) We think we should not get too involved with people in this community  
 (63) We trust things will work out even in difficult times  
 (66) We work to make sure family members are not emotionally or physically hurt
- 

**Table 4***Reliability of the Five Subscales and Total Scale of the 42-item FRAS-AA*

|       | Scale                         | # of<br>Items | Cronbach's Alpha<br>( $\alpha$ ) |
|-------|-------------------------------|---------------|----------------------------------|
| 1     | Openness and Problem-Solving  | 25            | 0.96                             |
| 2     | Social and Economic Resources | 7             | 0.82                             |
| 3     | Meaningful Interactions       | 4             | 0.77                             |
| 4     | Religion and Spirituality     | 3             | 0.85                             |
| 5     | Making Meaning of Adversity   | 3             | 0.68                             |
| Total | FRAS-AA                       | 42            | 0.95                             |

*Note:*  $N=338$  for Cronbach's Alpha of each subscale and the total scale

**Table 5***Item-Total Correlations*

| Item Description   | Correlation |
|--|-------------|
| 1. Everything we go through as a family happens for a reason             | .349        |
| 2. Our family structure is flexible to deal with the unexpected          | .602        |
| 3. Our friends value us and who we are                                   | .430        |
| 4. We accept stressful events as a part of life                          | .448        |
| 5. We accept that problems occur unexpectedly                            | .483        |
| 6. We all have input into major family decisions                         | .666        |
| 7. We are able to work through pain and come to an understanding         | .654        |
| 8. We are open to new ways of doing things in our family                 | .675        |
| 9. We are understood by other family members                             | .646        |
| 10. We ask neighbors for help and assistance                             | .330        |
| 11. We attend church/synagogue/mosque services                           | .240        |
| 12. We can ask for clarification if we do not understand each other      | .668        |
| 13. We can be honest and direct with each other in our family            | .682        |
| 14. We can blow off steam at home without upsetting someone              | .561        |
| 15. We can compromise when problems come up                              | .689        |
| 16. We can deal with family differences in accepting a loss              | .699        |
| 17. We can depend upon people in this community                          | .438        |
| 18. We can question the meaning behind messages in our family            | .555        |
| 19. We can solve major problems  | .711        |
| 20. We can survive if another problem comes up                           | .589        |
| 21. We can talk about the way we communicate in our family               | .643        |
| 22. We can work through difficulties as a family                         | .730        |
| 23. We consult with each other about decisions                           | .676        |
| 24. We define problems positively to solve them                          | .731        |
| 25. We discuss problems and feel good about the solutions                | .722        |
| 26. We discuss things until we reach a resolution                        | .684        |
| 27. We do volunteer work in the community                                | .299        |
| 28. We feel free to express our opinions                                 | .613        |
| 29. We feel good giving time and energy to our family                    | .664        |
| 30. We feel people in this community are willing to help in an emergency | .503        |
| 31. We have close friends we really care for                             | .494        |
| 32. We know there is community help if there is trouble                  | .402        |
| 33. We know we are important to our friends                              | .513        |
| 34. We learn from each other's mistakes                                  | .463        |
| 35. We participate in church activities                                  | .306        |
| 36. We receive gifts and favors from neighbors                           | .324        |

**Table 5** (Continued).

|   |      |
|---|------|
| 37. We seek advice from religious advisors                | .266 |
| 38. We share responsibility in the family                 | .626 |
| 39. We show love and affection for family members         | .639 |
| 40. We think this is a good community to raise children   | .577 |
| 41. We try new ways of working with problems              | .652 |
| 42. We understand communication from other family members | .675 |

Five factors emerged in the final identified factor structure in contrast to Sixbey's six-factor FRAS (See Table 6 for subscale comparisons). The resulting five subscales of Openness and Collaborative Problem-Solving, Social and Economic Resources, Meaningful Interactions, Religion and Spirituality, and Making Meaning of Adversity, align with several of Walsh's (2003) original constructs, including Clarity, Collaborative Problem-Solving, Social and Economic Resources, Spirituality, Positive Outlook, and Open Emotional Expression, and Making Meaning of Adversity. As such, the existing theoretical framework is applicable but the factor structure is differentiated from the FRAS in terms of which items created the most parsimonious solution with the current sample. The adapted measure will be termed the Family Resilience Assessment Scale for African Americans (FRAS-AA; see Appendix C) for this research study.

**Parallel Analysis.** PA was run in addition to the EFA. Syntax developed by O'Connor (2000) was used, computing 100 parallel data sets at the 95<sup>th</sup> percentile with principal components approach selected. PA results indicated 13 identified factors based on the raw data eigenvalues, consistent with the initial EFA. However, the resulting EFA five-factor solution was preferred due to the 13-factor solution's unacceptable factor loadings. The PA sequence plot is presented in Figure 1 and resulting eigenvalues are provided in Table 7.

**Table 6***Subscale Comparison of the FRAS-AA to the FRAS*

| FRAS-AA Subscales  | FRAS Subscales |
|--|----------------|
| <u>Openness and Collaborative Problem Solving</u>                        |                |
| 2. Our family structure is flexible to deal with the unexpected          | FCPS           |
| 6. We all have input into major family decisions                         | FCPS           |
| 7. We are able to work through pain and come to an understanding         | FCPS           |
| 8. We are open to new ways of doing things in our family                 | FCPS           |
| 9. We are understood by other family members                             | FCPS           |
| 12. We can ask for clarification if we do not understand each other      | FCPS           |
| 13. We can be honest and direct with each other in our family            | FCPS           |
| 14. We can blow off steam at home without upsetting someone              | FCPS           |
| 15. We can compromise when problems come up                              | FCPS           |
| 16. We can deal with family differences in accepting a loss              | FCPS           |
| 17. We can depend upon people in this community                          | USER*          |
| 18. We can question the meaning behind messages in our family            | FCPS           |
| 19. We can solve major problems  | MPO*           |
| 20. We can survive if another problem comes up                           | MPO*           |
| 21. We can talk about the way we communicate in our family               | FCPS           |
| 22. We can work through difficulties as a family                         | FCPS           |
| 23. We consult with each other about decisions                           | FCPS           |
| 24. We define problems positively to solve them                          | FCPS           |
| 25. We discuss problems and feel good about the solutions                | FCPS           |
| 26. We discuss things until we reach a resolution                        | FCPS           |
| 28. We feel free to express our opinions                                 | FCPS           |
| 29. We feel good giving time and energy to our family                    | FCPS           |
| 38. We share responsibility in the family                                | FCPS           |
| 39. We show love and affection for family members                        | FC*            |
| 41. We try new ways of working with problems                             | FCPS           |
| <u>Social Economic Resources</u>   |                |
| 10. We ask neighbors for help and assistance                             | USER           |
| 17. We can depend upon people in this community                          | USER           |
| 27. We do volunteer work in the community                                | *              |
| 30. We feel people in this community are willing to help in an emergency | USER           |
| 32. We know there is community help if there is trouble                  | USER           |
| 36. We receive gifts and favors from neighbors                           | USER           |

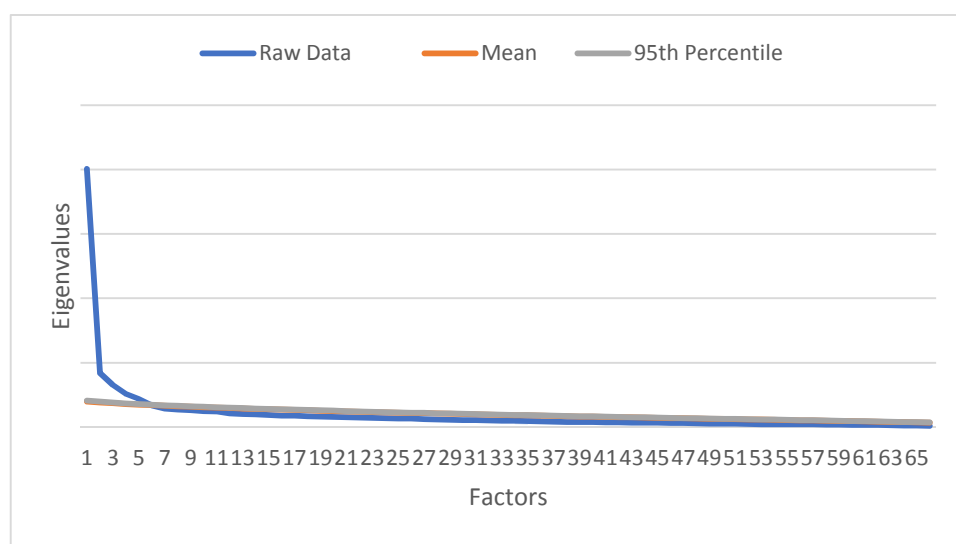
**Table 6** (Continued).

|  |       |
|--|-------|
| 40. We think this is a good community to raise children      | USER  |
| <u>Meaningful Interactions</u>                               |       |
| 3. Our friends value us and who we are                       | FC*   |
| 31. We have close friends we really care for                 | *     |
| 33. We know we are important to our friends                  | USER* |
| 34. We learn from each other's mistakes                      | *     |
| <u>Religion and Spirituality</u>                             |       |
| 11. We attend church/synagogue/mosque services               | FS    |
| 35. We participate in church activities                      | FS    |
| 37. We seek advice from religious advisors                   | FS    |
| <u>Making Meaning of Adversity</u>                           |       |
| 1. Everything we go through as a family happens for a reason | *     |
| 4. We accept stressful events as a part of life              | AMMA  |
| 5. We accept that problems occur unexpectedly                | AMMA  |

*Note:* Differences in subscales are marked with an asterisk (\*).

**Figure 1.**

*PA Sequence Plot*





**Table 7***Parallel Analysis Eigenvalues*

| Factor | Raw Data  | Mean     | 95 <sup>th</sup> Percentile |
|--------|-----------|----------|-----------------------------|
| 1      | 20.037296 | 1.993168 | 2.067426                    |
| 2      | 4.189075  | 1.909111 | 1.969897                    |
| 3      | 3.267205  | 1.847210 | 1.900354                    |
| 4      | 2.570392  | 1.792753 | 1.843973                    |
| 5      | 2.179436  | 1.745453 | 1.791047                    |
| 6      | 1.694252  | 1.699914 | 1.745134                    |
| 7      | 1.426824  | 1.656265 | 1.688319                    |
| 8      | 1.371514  | 1.618292 | 1.653366                    |
| 9      | 1.304346  | 1.578478 | 1.613952                    |
| 10     | 1.241646  | 1.544560 | 1.573998                    |
| 11     | 1.199643  | 1.509128 | 1.539728                    |
| 12     | 1.057136  | 1.476139 | 1.502504                    |
| 13     | 1.020382  | 1.445398 | 1.473800                    |
| 14     | .983965   | 1.415520 | 1.443679                    |
| 15     | .934165   | 1.384504 | 1.413974                    |
| 16     | .878983   | 1.355095 | 1.390139                    |
| 17     | .877268   | 1.327795 | 1.357804                    |
| 18     | .836110   | 1.300360 | 1.329024                    |
| 19     | .817232   | 1.271402 | 1.302799                    |
| 20     | .797976   | 1.246540 | 1.275135                    |
| 21     | .767493   | 1.219475 | 1.241454                    |
| 22     | .730446   | 1.193827 | 1.218080                    |
| 23     | .726447   | 1.172231 | 1.193576                    |
| 24     | .702048   | 1.146106 | 1.166925                    |
| 25     | .670915   | 1.121649 | 1.143385                    |
| 26     | .659428   | 1.098489 | 1.124001                    |
| 27     | .619152   | 1.075110 | 1.100672                    |
| 28     | .579951   | 1.051031 | 1.068096                    |
| 29     | .575581   | 1.030425 | 1.050249                    |
| 30     | .551694   | 1.007797 | 1.028679                    |
| 31     | .539353   | .988162  | 1.010929                    |
| 32     | .505881   | .966454  | .983678                     |
| 33     | .489469   | .947292  | .963765                     |

**Table 7** (continued).

|    |         |         |         |
|----|---------|---------|---------|
| 34 | .479047 | .925633 | .943225 |
| 35 | .459616 | .904414 | .929047 |
| 36 | .442738 | .883611 | .904092 |
| 37 | .421366 | .865946 | .886235 |
| 38 | .402304 | .845665 | .862308 |
| 39 | .393235 | .826243 | .848359 |
| 40 | .385442 | .808032 | .829177 |
| 41 | .362454 | .789362 | .808208 |
| 42 | .359460 | .771877 | .786209 |
| 43 | .351680 | .754398 | .775340 |
| 44 | .340939 | .736243 | .755033 |
| 45 | .337793 | .717967 | .737522 |
| 46 | .324102 | .699164 | .717244 |
| 47 | .316330 | .681544 | .701336 |
| 48 | .285010 | .665299 | .684410 |
| 49 | .277317 | .648948 | .665875 |
| 50 | .264601 | .630268 | .650807 |
| 51 | .260559 | .613401 | .630635 |
| 52 | .253410 | .596547 | .611033 |
| 53 | .229694 | .579166 | .600352 |
| 54 | .223120 | .561655 | .580072 |
| 55 | .222194 | .545257 | .562580 |
| 56 | .212019 | .527755 | .549447 |
| 57 | .206316 | .511043 | .529552 |
| 58 | .197345 | .494170 | .513133 |
| 59 | .185988 | .476781 | .497321 |
| 60 | .178945 | .459338 | .475854 |
| 61 | .176334 | .440998 | .458613 |
| 62 | .169327 | .423540 | .443455 |
| 63 | .142308 | .403659 | .423628 |
| 64 | .128514 | .384373 | .402135 |
| 65 | .113993 | .360384 | .382169 |
| 66 | .093798 | .332190 | .358089 |

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**Confirmatory Factor Analysis.** To verify the factor validity on the FRAS-AA with an African American sample, a CFA ( $n = 208$ ) was conducted using Mplus (Version 8.1) The following indicators of good model fit were used per Brown's (2015) recommendations: A Root Mean Square Error of Approximation (RMSEA) value of less than 0.05, a Standardized Root Mean Square Residual (SRMR) value of less than .08, a Comparative Fit Index (CFI) greater than or equal to 0.95, and a nonsignificant ( $p > .05$ ) chi-square ( $\chi^2$ ). The proposed model yielded unacceptable model fit to the data,  $\chi^2(809) = 1835.09, p < .001$ ; RMSEA = 0.08, 90% Confidence Interval (CI) = 0.07–0.08; SRMR = 0.08; CFI = 0.79. Following inspection of modification indices, a decision was made to respecify the model based on the correlation of errors of select indicators. Upon respecification, model fit improved,  $\chi^2(788) = 1421.677, p < .001$ ; RMSEA = 0.06, 90% CI = 0.06–0.07; SRMR = 0.07; CFI = 0.87. All retained items demonstrated acceptable factor loadings, ranging from .33 to .89. See Table 8 for correlations of latent variables and Table 9 for item factor loadings.

**Table 8**

*Correlations for the Latent Variables*

|    | F1      | F2      | F3      | F4      | F5      |
|----|---------|---------|---------|---------|---------|
| F1 | (1.000) |         |         |         |         |
| F2 | 0.526*  | (1.000) |         |         |         |
| F3 | 0.812*  | 0.499*  | (1.000) |         |         |
| F4 | 0.243*  | 0.634*  | 0.294*  | (1.000) |         |
| F5 | 0.560*  | 0.153   | 0.602*  | 0.019   | (1.000) |

*Note:* \*  $p < .001$

**Table 9**

*FRAS-AA CFA Loadings*

| Item  | Initial | Final |
|---|---------|-------|
| (1) Everything we go through as a family happens for a reason             | .31     | .33   |
| (2) Our family structure is flexible to deal with the unexpected          | .59     | .59   |
| (3) Our friends value us and who we are                                   | .65     | .61   |
| (4) We accept stressful events as a part of life                          | .74     | .74   |
| (5) We accept that problems occur unexpectedly                            | .66     | .66   |
| (6) We all have input into major family decisions                         | .70     | .71   |
| (7) We are able to work through pain and come to an understanding         | .70     | .70   |
| (8) We are open to new ways of doing things in our family                 | .73     | .75   |
| (9) We are understood by other family members                             | .61     | .62   |
| (10) We ask neighbors for help and assistance                             | .61     | .60   |
| (11) We attend church/synagogue/mosque services                           | .81     | .81   |
| (12) We can ask for clarification if we do not understand each other      | .62     | .63   |
| (13) We can be honest and direct with each other in our family            | .71     | .71   |
| (14) We can blow off steam at home without upsetting someone              | .70     | .73   |
| (15) We can compromise when problems come up                              | .78     | .79   |
| (16) We can deal with family differences in accepting a loss              | .63     | .64   |
| (17) We can depend upon people in this community                          | .75     | .76   |
| (18) We can question the meaning behind messages in our family            | .64     | .64   |
| (19) We can solve major problems  | .68     | .66   |
| (20) We can survive if another problem comes up                           | .66     | .65   |
| (21) We can talk about the way we communicate in our family               | .81     | .82   |
| (22) We can work through difficulties as a family                         | .75     | .74   |
| (23) We consult with each other about decisions                           | .75     | .73   |
| (24) We define problems positively to solve them                          | .76     | .72   |
| (25) We discuss problems and feel good about the solutions                | .80     | .77   |
| (26) We discuss things until we reach a resolution                        | .78     | .76   |
| (27) We do volunteer work in the community                                | .49     | .51   |
| (28) We feel free to express our opinions                                 | .65     | .64   |
| (29) We feel good giving time and energy to our family                    | .68     | .68   |
| (30) We feel people in this community are willing to help in an emergency | .77     | .69   |
| (31) We have close friends we really care for                             | .66     | .54   |
| (32) We know there is community help if there is trouble                  | .74     | .66   |
| (33) We know we are important to our friends                              | .67     | .54   |
| (34) We learn from each other's mistakes                                  | .65     | .72   |
| (35) We participate in church activities                                  | .89     | .89   |
| (36) We receive gifts and favors from neighbors                           | .53     | .52   |
| (37) We seek advice from religious advisors                               | .79     | .78   |
| (38) We share responsibility in the family                                | .60     | .60   |
| (39) We show love and affection for family members                        | .63     | .63   |
| (40) We think this is a good community to raise children                  | .45     | .50   |
| (41) We try new ways of working with problems                             | .65     | .65   |
| (42) We understand communication from other family members                | .69     | .69   |

## **Summary of Results**

Neither Walsh's (2003) conceptualization nor Sixbey's (2005a) six-factor model of family resilience was upheld. EFA and PA procedures both produced a 13-factor solution which was not optimal. Removal of items resulted in a 5-factor scale consisting of subscales measuring Openness and Collaborative Problem-Solving, Social and Economic Resources, Meaningful Interactions, Religion and Spirituality, and Making Meaning of Adversity. The total scale reliability indicated a high level of internal consistency and reliability, with a Cronbach's alpha of  $\alpha = .95$ . All items were then submitted to a CFA, suggesting modification indices consistent with the high likelihood of item correlation on the family resilience measure. Respecification of the model indicated mediocre fit with factor loadings at .30 or higher.

## DISCUSSION

The primary aim of this study was to reevaluate the factor structure of the FRAS (Sixbey, 2005b) for use with an African American sample and to empirically investigate its factor structure. Preliminary research by Harper & Debb (2020) studied this instrument's generalizability and suggested the need to assess specific theoretical constructs of family resilience for African American college students which is vital for any well-designed scale. To date, no known studies have validated the measure for this group using Walsh's (2003) theory-driven model, which is based on nine constructs. Although Sixbey (2005a) was guided by Walsh's (2003) conceptual theory with an initial goal to create a family resilience measure representative of the lived experience of diverse groups, the author noted the study's limitation in recruiting a diverse sample during the construction of the FRAS. As such, it is helpful to interpret the current study's findings with a focus on contributing factors of family resilience for African American college students while also considering potential influences and limitations of this approach.

### **Rethinking Family Resilience for African Americans**

A clear operational definition for resilience, and family resilience for African Americans in particular, has not yet been established. Theoretical bases of Walsh (2003) and Sixbey's (2005a) descriptions of the concept were used for the current study which has been consistently confirmed in the literature, purporting that resilience is not an inherent personality trait but rather a system's ability to adapt, drawing from internal and external resources. Yet, these perspectives lack any attention to the potential discrepancy between normative abilities and adverse environments faced by African Americans, oftentimes persistently.

The current literature describes resilience in the context of systems theory, positing that cultural resources can become problematic to sustain when generations endure poverty, segregation, and inequitable access to societal resources (Anderson, 2019; Arditti & Johnson, 2022). When the environment threatens a subsystem's equilibrium, it is the system that must reorganize and although these changes may be adaptable, they can also make the subsystem more prone to vulnerability. Further, Brody et al. (2013) suggested a skin-deep resilience, which is simply a perceived sense of positive adaptation for African Americans at certain stages, perpetuated by what the authors termed allostatic load, the long-term effects of chronic stress such as with marginalized groups. Brody's results demonstrated that despite the ability to adjust and self-regulate in their younger years throughout lived systematic oppression, this shows up as physical and psychological tolls for African Americans later in life which may create instability.

Family values, kinship support, family cohesion, optimism, and both religion and spirituality are key family resilience processes for African Americans that have been solidified in the research, akin to other racial groups (Chatters et al., 2018, Murray et al., 2018). Communal bonds such as these informed Yosso's (2005) six forms of capital as a part of a community cultural wealth model, which broadens definitions of family, peer, and community networks for African Americans. Yosso proposed that maintained connection with social networks, including extended kin, encourages utilization of skills and resources, contributing to accumulated assets that are resistant to forms of oppression for African Americans. Recognition of the presented capitals as fluid, dynamic, complex, and a particular strength of African American families may serve to provide a deeper understanding of the long-term buffering effects for this group.

Although suggestive in the literature, the presence or absence of racial discrimination can be a significant risk or a protective factor for African Americans' family resilience but is rarely

accounted for. Priest et al. (2020) noted prior research findings demonstrating higher levels of perceived discrimination with increased family strain and lower quality relationships. In addition, the authors recognize that supportive close relationships are likely to lessen the negative mental and physical impact of racial discrimination based on recent evidence. Existing measures, such as the Everyday Discrimination Scale (Williams et. al, 1997; Stucky et al., 2011) and the Perceived Online Racism Scale (Keum & Miller, 2017), may capture the everyday slights of African Americans to provide an assessment of the racial discrimination faced from an individual perspective (Barnes et al., 2004). Unfortunately, standalone family resilience assessments and models may be inadequate, disregarding factors such as allostatic load, cultural wealth, and perceived discrimination as pertinent family resilience indicators. Therefore, a case can be made for a more dynamic approach to measuring family resilience for African Americans.

### **Revised Factor Structure**

In comparison to Sixbey's (2005b) six-factor measure, factor analyses with the current African American college student sample resulted in a five-factor solution, pairing well with Walsh's three-pronged model and the FRAS. The six subscales from Sixbey's measure are Family Communication and Problem Solving, Utilizing Social and Economic Resources, Connectedness, Family Spirituality, Ability to Make Meaning of Adversity, and Maintaining a Positive Outlook. Whereas the five subscales of the adapted family resilience measure for African American college students include Clear Communication and Collaboration, Social and Economic Resources, Meaningful Interactions, Spirituality, and Making Meaning of Adversity. Meaningful Interactions was the most dissimilar scale, made up of almost all unique items. This may be explained by the college-aged sample and the general importance of social support for African Americans. It is important to note that although the internal reliability of the FRAS-AA



was satisfactory, similar to Sixbey's FRAS, reliability is heavily influenced by the number of items analyzed. Therefore, it may not be as meaningful of a representation of the intended underlying constructs of family resilience as it may seem based on these specific statistics.

It is probable that demographic variables would shape the conceptualization and assessment of family resilience for this sample. Participants in Sixbey's (2005a) initial validation study were largely Caucasian, held Bachelor's degrees, and identified as generally older than a typical college student. In contrast to this study, it is also likely that Sixbey's sample mainly consisted of persons in advanced identity stages and with mature family roles, such as parents and grandparents. Unlike Sixbey's study, sample participants were not asked to identify any particular adverse life events, nor any noticeable change in family distance to assess family connectedness at the time of participation. College students, in particular, may live on campus and away from their families for the first time in their lives. Situational and environmental factors such as these are also likely to influence perceptibility of family resilience for participants and could provide relevant supplemental data of systemic contributors that tend to disproportionately impact African Americans.

### **Limitations of the Study**

As previously suggested, cumulative life experiences may impact family resilience and are further dependent upon family roles, social expectations, and desirability. The assessment of recent adverse events and distance from families could have informed possible differences among the current sample. It is also possible that demographic variables not accounted for, such as gender and financial stability, would serve as predictors or mediators of family resilience. For example, in the investigation of an adapted FRAS for women with breast cancer, Lane (2011) suggested financial security as a potential indicator of family resilience. Additionally, a study

researching differences among African American adolescents ages 13-17 ( $N = 810$ ) in the receipt and provision of family support, found that older children reported providing more financial support, and African American females demonstrated more emotional support than males (Cross et al., 2018). In future research, it may prove useful to examine how receiving and giving as a unified support exchange, per Cross et al.'s familiarity solidarity framework could better capture sentiments of individual contributions as either giver or receiver.

Per the instructions on the FRAS, the participants' chosen family was not assessed and could differ in terms of developmental age, culture, and size. Family is broadly defined on the FRAS as participants are encouraged to choose any individual they wish to make up their family system. Bias is inevitable due to individual perceptions of support and the interpretation of terms in the questionnaire. An average generated score of family resilience from at least two people in the family unit could be combined to produce a score of family resilience rather than a single informant's perspective of an entire unit.

Given that the current sample consisted of African American college students, factors such as family education and developmental stage are important to acknowledge. It is possible that students who enroll and matriculate in college may come from families with higher education levels. Previous research has specifically linked maternal education with their children's academic outcomes (Awada & Shelleby, 2021) and notably, the majority of participants in the current sample endorsed their primary maternal caregiver's education as having some college or an Associate's degree. Further, the mean age of participants was 22 years old which corroborates with the existing literature in terms of the importance of peer and family support at this stage of development (Holland, 2011; Thomas & Brausch, 2022). This

sample likely represents a particular subset of African Americans in terms of average family education and stage of development.

Due to the nature of a convenience sample, participant recruitment through two local institutions, and this study's preferred target group, the sample size goal was not met. Although power analysis suggested the need for a larger sample of 660 participants to be split for factor analyses, the final sample included a total of 546 college students. The majority of the sample was recruited during the first semester and prioritized to be included in the primary analyses ( $n = 338$ ), meeting the minimum sample requirement for EFA. However, the remaining 208 participants did not meet the suggested sample size for CFA, which contributed to a significant chi-square value. One of the fundamental errors of non-probability sampling is its generalizability. Thus, the revised FRAS-AA cannot be assumed to be applicable to all African Americans and needs to be confirmed with a subsequent sample.

### **Future Research**

The resilience literature continually demonstrates the substantial impact of family support for African Americans but does not account for the cumulative impact of daily indignities and systemic racism that contribute to one's allostatic load, and in turn the family system. The biobehavioral family model recognizes stress reactivity as a mediator between family emotional climate and mental and physical health, including chronic conditions such as heart disease, diabetes, and hypertension (Priest et al., 2020). As an overall critical race theory, the community cultural wealth model further depicts African American family and community networks as strength-based, providing continual building blocks for African Americans to persevere even while experiencing chronic oppression (Yosso, 2005). Accordingly, duration, frequency, and severity of contributors to allostatic load and capitals of cultural wealth should be assessed in

future studies. Use of culturally-sound theories and a qualitative approach to conceptualize family resilience for African Americans is recommended.

An underlying aim of this study was to add to scholarly efforts promoting positive change for underserved populations for researchers and practitioners alike. Family values, kinship support, family cohesion, optimism, and religion and spirituality are well known in the literature as key family resilience processes but may be inadequate for a theoretically comprehensive understanding of family resilience for African Americans. The recognition of cultural strengths and broader oppressive systems in future research may help to capture distinctions of African Americans' lived experiences surrounding issues of race, class, and power, as it relates to healthy family functioning and an individual's resilience to cope with everyday stressors.

## CONCLUSION

This study provides insight into main constructs of family resilience for African American college students through reevaluation of the FRAS. The conceptual model of family resilience proposed by Walsh (2003) was partially supported by Sixbey's (2005a) original investigation of family resilience using a diverse community-based sample. In contrast, this model was unsupported for use specifically with African American college students in preliminary research (Harper & Debb, 2020), prompting further evaluation of family resilience constructs for this population. Results of the current study also detected differences resulting in a modified 42-item adapted measure consisting of five factors, which is more appropriate for use with African Americans.

These findings have implications for an overall conceptual model of family resilience for African American college students, consistent with prior findings indicating that increased resilience can lead to better college adjustment and academic achievement (Allan et al., 2014; Hartley, 2011). In learning the ways in which African American families deal with adversity during adjustment periods such as a child's matriculation into college, researchers may be able to use a measure of family resilience as an aid to understanding how these individuals adapt through reliance on their family system. Clinicians may be able to administer a more representative measure of family resilience for African American students to better understand the relative importance of one's perceived level of resilience by family members in various stages of life. Such an assessment may be relevant to an individual's care by examining the importance of family values, resources, and structure in their own families.

In addition to the current findings, further empirical investigation of this model for assessing family resilience is needed for it to be a valid and reliable instrument capable of

presenting this aspect of resilience along a common metric. Examining results from a larger sample with increased diversity in terms of age, education level, and other demographic variables would aid in improving generalizability. While establishing theoretical bases and applications of resilience and family resilience continually prove to be a difficult feat, especially for the underserved whose allostatic load is likely to be greater, the addition of this study's findings may serve as groundwork for such an essential undertaking.

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## APPENDIX A

## DEMOGRAPHIC QUESTIONNAIRE

1. How old are you?  
(Text box)
2. What is your current academic year?
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
3. What is your current GPA?  
(Slider scale)
4. Did you review your institutional record before reporting your current GPA?
  - a. Yes
  - b. No
5. What is your ethnicity?
  - a. African American
  - b. American Indian or Alaskan Native
  - c. Asian
  - d. Bi-racial (please specify) (Text box)
  - e. Caucasian
  - f. Hispanic/Latino
  - g. Pacific Islander
  - h. Other (please specify) (Text box)
6. What is your mother's (or primary maternal caregiver's) highest level of education?
  - a. Less than a high school degree or GED
  - b. GED
  - c. High school diploma
  - d. Some college or Associate's degree
  - e. Bachelor's degree
  - f. Master's degree
  - g. Doctoral degree

What is your father's (or primary paternal caregiver's) highest level of education?

  - a. Less than a high school degree or GED
  - b. GED

- c. High school diploma
- d. Some college or Associates degree
- e. Bachelor's degree
- f. Master's degree
- g. Doctoral degree

## APPENDIX B

**FAMILY RESILIENCE ASSESSMENT SCALE**

Please read each statement carefully. Decide how well you believe it describes your family now from your viewpoint. Your family may include any individuals you wish.

|  | Strongly<br>Agree | Agree | Disagree | Strongly<br>Disagree |
|--|-------------------|-------|----------|----------------------|
| 1. Every family has problems   |                   |       |          |                      |
| 2. Everything we go through as a family happens for a reason         |                   |       |          |                      |
| 3. Our family structure is flexible to deal with the unexpected      |                   |       |          |                      |
| 4. Our friends are a part of everyday activities                     |                   |       |          |                      |
| 5. Our friends value us and who we are                               |                   |       |          |                      |
| 6. The rules in our family are not set in stone                      |                   |       |          |                      |
| 7. The rules in our family change according to family needs          |                   |       |          |                      |
| 8. The things we do for each other make us feel a part of the family |                   |       |          |                      |
| 9. We accept stressful events as a part of life                      |                   |       |          |                      |
| 10. We accept that problems occur unexpectedly                       |                   |       |          |                      |
| 11. We all have input into major family decisions                    |                   |       |          |                      |
| 12. We are able to work through pain and come to an understanding    |                   |       |          |                      |
| 13. We are adaptable to demands placed on us as a family             |                   |       |          |                      |
| 14. We are careful how much we do for friends                        |                   |       |          |                      |
| 15. We are careful what we say to each other                         |                   |       |          |                      |
| 16. We are open to new ways of doing things in our family            |                   |       |          |                      |
| 17. We are understood by other family members                        |                   |       |          |                      |
| 18. We ask neighbors for help and assistance                         |                   |       |          |                      |
| 19. We attend church/synagogue/mosque services                       |                   |       |          |                      |

20. We believe friends can take advantage of us
21. We believe we can handle our problems
22. We can ask for clarification if we do not understand each other
23. We can be honest and direct with each other in our family
24. We can blow off steam at home without upsetting someone
25. We can compromise when problems come up
26. We can deal with family differences in accepting a loss
27. We can depend upon people in this community
28. We can question the meaning behind messages in our family
29. We can solve major problems
30. We can survive if another problem comes up
31. We can talk about the way we communicate in our family
32. We can work through difficulties as a family
33. We consult with each other about decisions
34. We define problems positively to solve them
35. We discuss problems and feel good about the solutions
36. We discuss things until we reach a resolution
37. We do volunteer work in the community
38. We feel free to express our opinions
39. We feel good giving time and energy to our family
40. We feel people in this community are willing to help in an emergency
41. We feel secure living in this community
42. We feel taken for granted by family members
43. We feel we are strong in facing big problems
44. We get upset if someone complains in our family

45. We have close friends we really care for
  46. We have faith in a supreme being
  47. We have the strength to solve our problems
  48. We keep our feelings to ourselves
  49. We know there is community help if there is trouble
  50. We know we are important to our friends
  51. We learn from each other's mistakes
  52. We mean what we say to each other in our family
  53. We participate in activities specifically for our situation
  54. We participate in church activities
  55. We receive gifts and favors from neighbors
  56. We seek advice from religious advisors
  57. We seldom listen to family members concerns or problems
  58. We share responsibility in the family
  59. We show love and affection for family members
  60. We tell each other how much we care for one
  61. We think this is a good community to raise children
  62. We think we should not get too involved with people in this community
  63. We trust things will work out even in difficult times
  64. We try new ways of working with problems
  65. We understand communication from other family members
  66. We work to make sure family members are not emotionally or physically hurt
-

## APPENDIX C

**FAMILY RESILIENCE ASSESSMENT SCALE – AFRICAN AMERICANS**

Please read each statement carefully. Decide how well you believe it describes your family now from your viewpoint. Your family may include any individuals you wish.

|  | Strongly<br>Agree | Agree | Disagree | Strongly<br>Disagree |
|--|-------------------|-------|----------|----------------------|
| (1) Everything we go through as a family happens for a reason        |                   |       |          |                      |
| (2) Our family structure is flexible to deal with the unexpected     |                   |       |          |                      |
| (3) Our friends value us and who we are                              |                   |       |          |                      |
| (4) We accept stressful events as a part of life                     |                   |       |          |                      |
| (5) We accept that problems occur unexpectedly                       |                   |       |          |                      |
| (6) We all have input into major family decisions                    |                   |       |          |                      |
| (7) We are able to work through pain and come to an understanding    |                   |       |          |                      |
| (8) We are open to new ways of doing things in our family            |                   |       |          |                      |
| (9) We are understood by other family members                        |                   |       |          |                      |
| (10) We ask neighbors for help and assistance                        |                   |       |          |                      |
| (11) We attend church/synagogue/mosque services                      |                   |       |          |                      |
| (12) We can ask for clarification if we do not understand each other |                   |       |          |                      |
| (13) We can be honest and direct with each other in our family       |                   |       |          |                      |
| (14) We can blow off steam at home without upsetting someone         |                   |       |          |                      |
| (15) We can compromise when problems come up                         |                   |       |          |                      |
| (16) We can deal with family differences in accepting a loss         |                   |       |          |                      |
| (17) We can depend upon people in this community                     |                   |       |          |                      |
| (18) We can question the meaning behind messages in our family       |                   |       |          |                      |
| (19) We can solve major problems                                     |                   |       |          |                      |

- (20) We can survive if another problem comes up
- (21) We can talk about the way we communicate in our family
- (22) We can work through difficulties as a family
- (23) We consult with each other about decisions
- (24) We define problems positively to solve them
- (25) We discuss problems and feel good about the solutions
- (26) We discuss things until we reach a resolution
- (27) We do volunteer work in the community
- (28) We feel free to express our opinions
- (29) We feel good giving time and energy to our family
- (30) We feel people in this community are willing to help in an emergency
- (31) We have close friends we really care for
- (32) We know there is community help if there is trouble
- (33) We know we are important to our friends
- (34) We learn from each other's mistakes
- (35) We participate in church activities
- (36) We receive gifts and favors from neighbors
- (37) We seek advice from religious advisors
- (38) We share responsibility in the family
- (39) We show love and affection for family members
- (40) We think this is a good community to raise children
- (41) We try new ways of working with problems
- (42) We understand communication from other family members

APPENDIX D  
**FAMILY RESILIENCE ASSESSMENT SCALE – AFRICAN AMERICANS**  
**Scoring Tool**

Strongly Agree = 4

Agree = 3

Disagree = 2

Strongly Disagree = 1

Openness and Collaborative Problem-Solving (OCPS)Likert Score

|  |  |
|--|--|
| (2) Our family structure is flexible to deal with the unexpected     |  |
| (6) We all have input into major family decisions                    |  |
| (7) We are able to work through pain and come to an understanding    |  |
| (8) We are open to new ways of doing things in our family            |  |
| (9) We are understood by other family members                        |  |
| (12) We can ask for clarification if we do not understand each other |  |
| (13) We can be honest and direct with each other in our family       |  |
| (14) We can blow off steam at home without upsetting someone         |  |
| (15) We can compromise when problems come up                         |  |
| (16) We can deal with family differences in accepting a loss         |  |
| (17) We can depend upon people in this community                     |  |
| (18) We can question the meaning behind messages in our family       |  |
| (19) We can solve major problems                                     |  |
| (20) We can survive if another problem comes up                      |  |
| (21) We can talk about the way we communicate in our family          |  |
| (22) We can work through difficulties as a family                    |  |
| (23) We consult with each other about decisions                      |  |
| (24) We define problems positively to solve them                     |  |
| (25) We discuss problems and feel good about the solutions           |  |
| (26) We discuss things until we reach a resolution                   |  |
| (28) We feel free to express our opinions                            |  |
| (29) We feel good giving time and energy to our family               |  |
| (38) We share responsibility in the family                           |  |
| (39) We show love and affection for family members                   |  |
| (41) We try new ways of working with problems                        |  |
| (42) We understand communication from other family members           |  |
| TOTAL  |  |
| TOTAL ÷25 = average CCPS score                                       |  |

Social and Economic Resources (SER)Likert Score

|   |  |
|---|--|
| (10) We ask neighbors for help and assistance                             |  |
| (17) We can depend upon people in this community                          |  |
| (27) We do volunteer work in the community                                |  |
| (30) We feel people in this community are willing to help in an emergency |  |



|  |  |
|--|--|
| (32) We know there is community help if there is trouble |  |
| (36) We receive gifts and favors from neighbors          |  |
| (40) We think this is a good community to raise children |  |
| TOTAL  |  |
| TOTAL $\div 7$ = average SER score                       |  |

Meaningful Interactions (MI)Likert Score

|   |  |
|---|--|
| (3) Our friends value us and who we are       |  |
| (31) We have close friends we really care for |  |
| (33) We know we are important to our friends  |  |
| (34) We learn from each other's mistakes      |  |
| TOTAL   |  |
| TOTAL $\div 4$ = average MI score             |  |

Religion and Spirituality (RS)Likert Score

|   |  |
|---|--|
| (11) We attend church/synagogue/mosque services |  |
| (35) We participate in church activities        |  |
| (37) We seek advice from religious advisors     |  |
| TOTAL   |  |
| TOTAL $\div 3$ = average RS score               |  |

Making Meaning of Adversity (MMA)Likert Score

|   |  |
|---|--|
| (1) Everything we go through as a family happens for a reason |  |
| (4) We accept stressful events as a part of life              |  |
| (5) We accept that problems occur unexpectedly                |  |
| TOTAL   |  |
| TOTAL $\div 3$ = average MMA score                            |  |

VITA  
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**EDUCATION**

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|   |                    |
|---|--------------------|
| <b>Virginia Consortium Program in Clinical Psychology</b>   | <b>2016 – 2022</b> |
| Ph.D. Clinical Psychology, jointly sponsored by: Old Dominion University<br>Norfolk State University, and Eastern Virginia Medical School |                    |
| <b>Virginia Commonwealth University</b>   | <b>2009 – 2012</b> |
| B.S. Psychology (University Honors), conferred December 2012<br>Magna Cum Laude   |                    |

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**CLINICAL EXPERIENCE**

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|  |                          |
|--|--------------------------|
| <b>Children’s Hospital of the King’s Daughters</b><br>Norfolk, VA            | <b>08/2022– Present</b>  |
| <b>WellSpan Philhaven CBT</b><br>York, PA                                    | <b>06/2021 – 06/2022</b> |
| <b>Assessment &amp; Therapy Associates</b><br>Chesapeake, VA                 | <b>02/2021 – 05/2021</b> |
| <b>Community Psychological Resources</b><br>Norfolk, VA                      | <b>08/2020 – 05/2021</b> |
| <b>Children’s Hospital of the King’s Daughters</b><br>Norfolk, VA            | <b>08/2019 – 04/2020</b> |
| <b>Old Dominion University, Office of Counseling Services</b><br>Norfolk, VA | <b>08/2018 – 06/2019</b> |
| <b>Virginia Beach City Public Schools</b><br>Virginia Beach, VA              | <b>08/2016 – 08/2018</b> |

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**PUBLICATIONS**

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- Harper, Q.,** Debb, S.M. (2020). Assessing family resilience for African American college students: Confirmatory factor analysis of the Family Resilience Assessment Scale. *Journal of American College Health, 70*(4), 978-983.  
<https://doi.org/10.1080/07448481.2020.1786100>
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<https://doi.org/10.1002/jclp.22079>