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Chronic life stress—ongoing, non-acute strain—is implicated in physical and psychiatric disease pathways, including depression, but is understudied. Critically, the absence of psychometrically sound, valid, and efficient measures for comprehensively assessing chronic stress exposure represents a barrier to its further study. The present study developed and evaluated the psychometric properties of the Chronic Life Stress Questionnaire (CLSQ), which is based on the well-regarded UCLA Life Stress Interview (LSI). The CLSQ's properties, including its reliability, factor structure, and validity, were examined using the classical test theory framework. Analyses drew on data collected from four diverse samples of young adults ($N = 787$) at three academic institutions. The final CLSQ contained 107 items assessing chronic stress in ten life domains. Results indicated that the large majority of CLSQ scales showed good internal consistency and test-retest reliability. Confirmatory factor analysis with a two-factor structure yielded mixed evidence of acceptable model fit. However, factor analytic findings shed light on forms of chronic stress—namely family relationship and academic stress—that were associated with chronic stress in multiple life domains; these findings may guide future research efforts into stress spillover mechanisms among young adults. Analyses examining construct, criterion, and discriminant validity of the CLSQ scales also yielded promising results. Findings suggest future avenues for iterative development and for empirical investigation using the CLSQ, which provides a viable, efficient avenue for comprehensively assessing chronic stress exposure in young adults.

DEVELOPMENT AND PSYCHOMETRIC VALIDATION
OF THE CHRONIC LIFE STRESS QUESTIONNAIRE:
A MULTIDOMAIN MEASURE OF CHRONIC STRESS EXPOSURE

by

Gail M. Corneau

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Dr. Suzanne Vrshek-Schallhorn
Committee Chair

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DEDICATION

For my husband and best friend, Daniel Pollock, my parents, Keith and Susan Corneau, and my late grandmother, Sally Meraner. Thank you for your endless love, encouragement, and support on this journey.

APPROVAL PAGE

This dissertation written by Gail M. Corneau has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair

Dr. Suzanne Vrshek-Schallhorn

Committee Members

Dr. Jasmine DeJesus

Dr. Kari Eddington

Dr. Thomas Kwapil

May 25, 2022

Date of Acceptance by Committee

May 25, 2022

Date of Final Oral Examination

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TABLE OF CONTENTS

LIST OF TABLES	x
LIST OF FIGURES	xvi
CHAPTER I: INTRODUCTION.....	1
The Stress Construct.....	2
Disambiguating the Stress Exposure and the Stress Response	3
Stress Exposure and Response Characteristics.....	4
Stress Exposure and Depression	5
Chronic Stress	6
Defining Chronic Stress	6
Interim Summary.....	9
Measurement of Chronic Life Stress.....	10
Overview	10
Single Domain Self-Report Measures of Chronic Stress	11
Global and Multiple Domain Self-Report Measures of Chronic Stress	12
Perceived Stress Scale (PSS).....	12
Trier Inventory for Chronic Stress (TICS).....	14
College Chronic Life Stress Survey (CCLSS).....	16
Wheaton’s Measure of Chronic Stress.....	17
Strengths and Limitations of Global Measures.....	19
Life Stress Interviews	20
Life Events and Difficulties Schedule (LEDS).....	21
UCLA Life Stress Interview (LSI)	22
Limitations of Interview Methods	24
Goal and Hypotheses.....	26
CHAPTER II: METHODS	30
Construction of the Chronic Life Stress Questionnaire	30
Psychometric Evaluation of the Chronic Life Stress Questionnaire	34
Participants	34
Measures.....	36

Overview	36
Measures Administered to All Participants	37
Chronic Life Stress Questionnaire.	37
Attentive Responding Scale.	38
Current Depressive Symptoms.	39
Neuroticism.	39
Perceived Stress.	40
Measures Administered in Single Sample	40
UCLA Life Stress Interview.	40
Lifetime Depressive Symptoms (Most Severe).	41
Procedure	42
Analytic Plan	43
Data Reduction and Missingness.....	43
CLSQ Item-Level Analyses	44
CLSQ Domain-Level Analyses.....	45
Hypothesis 1: Internal Consistency Reliability.....	45
Hypothesis 2: Temporal Stability	45
Hypothesis 3: Correlations of CLSQ Scales.....	46
Hypothesis 4: Confirmatory Factor Analysis with Two-Factor Solution.....	46
Hypothesis 5: Criterion Validity.....	46
Hypotheses 6, 7, and 8: Construct Validity	47
Hypothesis 9: Discriminant Validity	48
Power Analysis and Sample Size	48
CHAPTER III: RESULTS	50
Item Level Results, Exploratory Factor Analyses, and Item Elimination.....	50
Scale Level Results	52
Hypothesis 1: Internal Consistency Reliability	52
Hypothesis 2: Temporal Stability.....	53
Hypothesis 3: Correlations of Domain Scales.....	55
Hypothesis 4: Confirmatory Factor Analysis	56
Hypothesis 5: Criterion Validity with UCLA Life Stress Interview	58
Hypothesis 6: Construct Validity with Current Depressive Symptoms	59

Hypothesis 7: Construct Validity with Most Severe Lifetime Depressive Symptoms	62
Hypothesis 8: Construct Validity with Prospective Depressive Symptoms.....	63
Hypothesis 9: Discriminant Validity with Neuroticism and Perceived Stress	65
CHAPTER IV: DISCUSSION	68
Strengths of the Chronic Life Stress Questionnaire	69
Scale Development.....	69
Sample Characteristics	70
Psychometric Properties	71
Hypotheses 1 and 2: Internal Consistency and Test-Retest Reliability	71
Hypothesis 3: Correlations of CLSQ Scales.....	71
Hypothesis 4: Confirmatory Factor Analysis	73
Hypothesis 5: Criterion Validity with UCLA Life Stress Interview	75
Hypothesis 6: Construct Validity with Current Depressive Symptoms	75
Hypothesis 7: Construct Validity with Most Severe Lifetime Depressive Symptoms.....	78
Hypothesis 8: Construct Validity with Prospective Depressive Symptoms	79
Hypothesis 9: Discriminant Validity with Neuroticism and Perceived Stress	79
Limitations	81
Psychometric Properties	81
Kurtosis and Skew	81
Inter-Item and Item-Scale Correlations	83
Reliability.....	84
Dimensionality and Model Specification	85
Assessing Chronic Stress Related to Role Absence	86
Assessing Chronic Stress Related to Discrimination	86
Sample Characteristics	87
Future Directions.....	89
Scale Development Studies	89
Empirical Studies.....	90
REFERENCES	92
APPENDIX A: THE CHRONIC LIFE STRESS QUESTIONNAIRE	111
APPENDIX B: TABLES.....	143

APPENDIX C: FIGURES 239

LIST OF TABLES

Table 1. Questionnaire Administrations and Exclusions	143
Table 2. Demographic Characteristics	144
Table 3. Statistics for Close Friendship Scale (Before Removal of Items)	145
Table 4. Descriptive Statistics for Social Life Scale (Before Removal of Items)	147
Table 5. Descriptive Statistics for Romantic Relationship-In Relationship Scale (Before Removal of Items)	149
Table 6. Descriptive Statistics for Romantic Relationship-Dating Scale (Before Removal of Items)	151
Table 7. Descriptive Statistics for Romantic Relationship-Single Scale (Before Removal of Items)	152
Table 8. Descriptive Statistics for Family Relationships Scale (Before Removal of Items)	153
Table 9. Descriptive Statistics for Neighborhood Scale (Before Removal of Items)	156
Table 10. Descriptive Statistics for Academic Scale (Before Removal of Items)	157
Table 11. Descriptive Statistics for Employment-Working Scale (Before Removal of Items) ..	158
Table 12. Descriptive Statistics for Employment-Not Working Scale (Before Removal of Items)	160
Table 13. Descriptive Statistics for Finances Scale (Before Removal of Items)	161
Table 14. Descriptive Statistics for Health-Self Scale (Before Removal of Items)	162

Table 15. Descriptive Statistics for Health-Family Scale (Before Removal of Items).....	164
Table 16. Inter-item Correlations in Close Friendship Scale.....	166
Table 17. Inter-item Correlations in Social Life Scale	167
Table 18. Inter-item Correlations in Romantic Relationship-In Relationship Scale	168
Table 19. Inter-item Correlations in Romantic Relationship-Dating Scale.....	169
Table 20. Inter-item Correlations in Romantic Relationship-Single Scale.....	170
Table 21. Inter-item Correlations in Family Relationships Scale.....	171
Table 22. Inter-item Correlations in Neighborhood Scale.....	172
Table 23. Inter-item Correlations in Academic Scale.....	173
Table 24. Inter-item Correlations in Employment-Working Scale.....	174
Table 25. Inter-item Correlations in Employment-Not Working Scale.....	175
Table 26. Inter-item Correlations in Finances Scale.....	176
Table 27. Inter-item Correlations in Health-Self Scale	177
Table 28. Inter-item Correlations in Health-Family Scale.....	178
Table 29. Close Friendship Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	179
Table 30. Close Friendship Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	181

Table 31. Social Life Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	182
Table 32. Social Life Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	183
Table 33. Romantic Relationship-In Relationship Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	184
Table 34. Romantic Relationship-In Relationship Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)	186
Table 35. Romantic Relationship-Dating Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings	187
Table 36. Romantic Relationship-Single Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal).....	188
Table 37. Romantic Relationship-Single Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	189
Table 38. Family Relationships Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	190
Table 39. Family Relationships Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	192
Table 40. Neighborhood Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	194

Table 41. Neighborhood Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	195
Table 42. Academic Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	196
Table 43. Academic Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)	197
Table 44. Employment-Working Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	198
Table 45. Employment-Working Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	199
Table 46. Employment-Not Working Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal).....	201
Table 47. Employment-Not Working Scale: Exploratory Factor Analysis Factor Loadings (After Item Removal)	202
Table 48. Finances Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	203
Table 49. Finances Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)	204
Table 50. Health-Self Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	205

Table 51. Health-Self Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	207
Table 52. Health-Family Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)	208
Table 53. Health-Family Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal).....	210
Table 54. Items Excluded from Final CLSQ Scales	211
Table 55. Descriptive Statistics of Items in Close Friendship Scale (Final Scale).....	214
Table 56. Descriptive Statistics of Items in Social Life Scale (Final Scale)	216
Table 57. Descriptive Statistics of Items in Romantic Relationship-In Relationship Scale (Final Scale)	218
Table 58. Descriptive Statistics of Items in Romantic Relationship-Dating Scale (Final Scale)	220
Table 59. Descriptive Statistics of Items in Romantic Relationship-Single Scale (Final Scale)	221
Table 60. Descriptive Statistics of Items in Family Relationships Scale (Final Scale)	222
Table 61. Descriptive Statistics of Items in Neighborhood Scale (Final Scale).....	224
Table 62. Descriptive Statistics of Items in Academic Scale (Final Scale).....	225
Table 63. Descriptive Statistics of Items in Employment-Working (Final Scale)	226
Table 64. Descriptive Statistics of Items in Employment-Not Working (Final Scale)	227

Table 65. Descriptive Statistics of Items in Finances Scale (Final Scale).....	228
Table 66. Descriptive Statistics of Items in Health-Self Scale (Final Scale).....	229
Table 67. Descriptive Statistics of Items in Health-Self Scale (Final Scale).....	231
Table 68. Internal Consistency Reliability and Test-Retest Reliability.....	232
Table 69. Pearson Correlations of CLSQ Domain Scales	234
Table 70. Values of Fit Statistics for One- and Two-Factor CLSQ Models.....	235
Table 71. Descriptive Statistics of LSI Scales and Pearson Correlations with CLSQ Scales	236
Table 72. Pearson Correlations of CLSQ Scales and Composites with Depressive Symptoms, Perceived Stress, and Neuroticism.....	237
Table 73. Main and Interactive Effects within Employment and Romantic Relationship Domains on Current Depressive Symptoms	238

LIST OF FIGURES

Figure 1. Measures Administered and Hypotheses Addressed in Each Sample.....	239
Figure 2. Confirmatory Factor Analysis: One-Factor CLSQ Model	241
Figure 3. Confirmatory Factor Analysis: Two-Factor CLSQ Model	242
Figure 4. Confirmatory Factor Analysis: Alternative Two-Factor CLSQ Model	244
Figure 5. Unstandardized Predicted Values of Current Depressive Symptoms Regressed on CLSQ Employment Stress	246
Figure 6. Unstandardized Predicted Values of Current Depressive Symptoms Regressed on CLSQ Romantic Relationship Stress	247
Figure 7. Path Diagrams Depicting Relationships between Chronic Stress, Current Depressive Symptoms, and Depressive Symptoms at Follow Up.....	248

CHAPTER I: INTRODUCTION

Chronic stress, which here refers to ongoing, non-acute stress across an array of life domains, is commonly occurring and implicated in disease pathways to physical and mental illness (McEwen, 1998, 2012). In research on etiological origins of psychiatric illness, a large body of literature examines the role of stress in depression, a prevalent and disabling disorder (Hammen, 2005). However, although the role of adverse acute life *events* in depression is well characterized, the role of chronic stress in depression remains understudied despite repeated calls for further investigation of its etiological effects (Hammen, 2005; Kessler, 1997; Mazure, 1998; McGonagle & Kessler, 1990; Vrshek-Schallhorn, Ditcheva, & Corneau, 2019).

One barrier to advancing research on pathways from chronic stress to depression and other illnesses includes a lack of valid, reliable, and efficient tools for the comprehensive assessment of chronic stress exposure. Only a small number of time-efficient questionnaires measure chronic stress across multiple life domains (as reviewed by Hammen, Dalton, & Thompson, 2015), but available measures have significant flaws and evidence for the adequacy of their assessment of stress exposure is limited.

Conversely, contextual life stress interviews, such as the UCLA Life Stress Interview (UCLA LSI; Hammen et al., 1987) and the Life Events and Difficulties Schedule (LEDS; Brown & Harris, 1978), represent a robust methodology for assessing both chronic and episodic stress exposure that, critically, permits investigator ratings of stress severity. However, interviews can also be prohibitive because of the enormous investment of both time and personnel required for training, administration, and scoring. Interview methodology may therefore limit researchers' abilities to gather large sample datasets—particularly without external funding—and categorically prohibits increasingly desirable “big data” research designs. Despite the rigor of

interviews, this methodology is incompatible with current demands on researchers to not only publish on increasingly large datasets, but also to publish increasingly frequently.

The present study developed and evaluated the psychometric properties of a self-report instrument to capture chronic stress across multiple life domains in young adults, including in interpersonal relationships, school, work, residence/neighborhood, finances, and health of self and family. Young adults were chosen for initial instrument development because of the salience of depression in this developmental period (Rohde, Lewinsohn, Klein, Seeley, & Gau, 2013); the measure was initially developed for only one developmental stage because the chronic stress construct is expected to vary across development. The instrument, the Chronic Life Stress Questionnaire (CLSQ), draws substantially—with UCLA LSI developer Dr. Constance Hammen’s permission—from the LSI with the aim of translating the key elements of the interview into a more time- and resource-efficient, yet still robust, questionnaire form.

Although the CLSQ is intended to address a need within the field of stress and depression to facilitate research on the role of chronic stress in this disorder, the application of the measure is certainly not limited to this field. However, the present study focused on components of the measure and its validation that are particularly relevant for adequate measurement of stress when depression is the outcome of interest.

The Stress Construct

Stress serves as an important construct across many fields, although its operationalization varies widely between and even within fields. An especially large literature investigates the role of stress in depression etiology. Within this area, stress is defined as an organism’s *exposure* as well as its *response* to threatening, adverse, or challenging experiences (Harkness & Monroe,

2016). This two-pronged definition of stress guides the conceptualization of stress (and chronic stress) in the current study.

Disambiguating the Stress Exposure and the Stress Response

Researchers examining the etiological role of life stress in depression emphasize the need to specify whether the stress exposure or response is the construct of interest and to select measures that appropriately measure that construct. This emphasis arose from several lines of research demonstrating that stress exposure and response variables (as well as depression risk factors) can easily be confounded on self-report measures purported to assess stress exposures.

When research participants make severity ratings characterizing their stress exposures, studies demonstrate biases in responding based on the level of other depression risk factors and the presence of depression itself. For example, in one study, trait neuroticism predicted self-ratings of stressor severity (Espejo et al., 2011). In another study the extent of discrepancy between severity ratings by participants and a trained research team predicted participants' scores on a latent internalizing dimension cross-sectionally and prospectively: Greater overestimation of severity by participants compared to the team predicted higher internalizing (Conway, Starr, Espejo, Brennan, & Hammen, 2016). Further, and in line with cognitive vulnerability models of depression, another study showed that youth with depression made higher stressor severity ratings on average than the non-depressed group when comparing both groups' ratings to those of the research team (Krackow & Rudolph, 2008). Thus, it is critical that stress measurement disambiguate objective stress exposure from participant perceptions of stressor severity to the extent that this is possible.

Currently available self-report measures of stress predominantly capture stress responses (namely, perceptions of stress) rather than stress exposures. Although stress responding can be

important in understanding how stress leads to depression, stress responding is maximally interpretable when placed in the context of objective stressful exposure. This would allow, for example, investigation into the influence of individual differences on stress responding as objective stress exposure level increases. Without appropriate measurement of the stress exposure, however, we have an incomplete understanding of the stress process (Pearlin, Menaghan, Lieberman, & Mullan, 1981) that can lead to depressive outcomes. Instead, without disambiguating measures, investigators are forced to rely solely on a predictor (stress response) that is influenced not only by the stress exposure but also by a myriad of other factors, including third variables (depression risk factors) and the criterion itself (depression).

Stress Exposure and Response Characteristics

When investigating stress exposures and responses, researchers categorize and define them based on a variety of characteristics. Acuteness of onset—whether the stressor occurs as a discrete, time-limited event or instead lacks a clear beginning and unfolds over time—frequently serves to differentiate stress exposures. Using this distinction, two forms of stress include episodic stressors (negative life events, such as the death of a loved one or termination from a job) and chronic stress (ongoing strains, such as a tumultuous relationship or dangerous living conditions). Additional characteristics used to describe stress exposures include severity (i.e., the degree of long-term threat it confers; Brown & Harris, 1978), developmental timing, and interpersonal content. Similarly, researchers examine various aspects of the stress response, including biological (e.g., autonomic and neuroendocrine responding), affective (e.g., emotions and emotion regulation responses), cognitive (e.g., appraisals of stressor characteristics), and behavioral (e.g., coping strategies, avoidance) components (Epel et al., 2018).

Stress Exposure and Depression

Briefly, stress exposure and depression research predominantly examines three forms of exposures, including stressful life events, experiences of early adversity (e.g., neglect, abuse, loss of a caregiver), and chronic stress. Life events are the most well-studied of the three: Over the past 40 years, multiple studies demonstrate the important role of investigator-rated severe (or “major”) negative life events in depression onset (Monroe, Slavich, & Georgiades, 2009), particularly in the month in which they occur and up to three months following (e.g., Brown & Harris, 1978; Surtees & Wainwright, 1999). Evidence also suggests that interpersonal events—those that affect the quality or quantity of a person’s relationships (Vrshek-Schallhorn et al., 2015), including those involving loss, humiliation, or targeted rejection—are particularly depressogenic (e.g., Kendler, Hettema, Butera, Gardner, & Prescott, 2003; Slavich, Thornton, Torres, Monroe, & Gotlib, 2009).

Early adversity is a second well-studied risk factor for depression. Experiences of early adversity, which often encompass both episodic and chronic stress (e.g., neglect, maltreatment, loss of a parent/caregiver, financial strain, illness) contribute to risk for depression in youth as well as in adults (e.g., Li, D’Arcy, & Meng, 2016; Springer, Sheridan, Kuo, & Carnes, 2003; Staudt, 2001). Studies support that childhood adversity primarily influences depression in late adolescence and adulthood indirectly via proximal stress (e.g., Hazel, Hammen, Brennan, & Najman, 2008; Kessler & Magee, 1994; Vrshek-Schallhorn et al., 2015).

By contrast, chronic stress is a historically understudied topic in research on depression etiology, as compared to stressful life events on depression, likely for several reasons. Namely, chronic stress as a construct presents unique challenges for assessment, for example related to capturing its timing accurately as well as its pervasiveness across a life domain (or domains)

comprehensively (Corneau & Vrshek-Schallhorn, manuscript in preparation; Kessler, 1997). Additionally, past studies of chronic stress in depression do not uniformly find it as potent of a risk factor as episodic stress (e.g., Hammen, Kim, Eberhart, & Brennan, 2009). Indications that chronic strain may have smaller effects compared to those of events may deter investigation into the role of chronic stress in depression, and use of single domain measures (a popular approach to chronic stress measurement) may compound this issue through artificial reduction of effect sizes for chronic stress (Mazure, 1998).

Nonetheless, multiple studies examining the role of chronic stress in depression using robust life stress interview methods demonstrate that chronic stress significantly predicts depression onset (e.g., Brown & Harris, 1978; Costello, 1982; Hammen et al., 2009; Rojo-Moreno, Livianos-Aldana, Cervera-Martínez, Dominguez-Carabantes, Reig-Cebrian, 2002; Vrshek-Schallhorn et al., 2015). Evidence also supports a role for chronic stress in depression recurrence (Sheets & Craighead, 2014) and symptom maintenance (Brown & Rosellini, 2011), albeit research on chronic stress and various aspects of depression, including maintenance, recurrence, and symptom severity, is limited. Additionally, little is known about the aspects of chronic stress that are particularly depressogenic, the potential for certain clusters of chronic stress across life domains to create heightened risk, and the mechanisms by which chronic stress exerts its etiological effects.

Chronic Stress

Defining Chronic Stress

Chronic stress encompasses persistent strains both within social roles—such as within a person’s role as a family member, romantic partner, or employee—and outside of roles, for example in the context of health, finances, or residential conditions. These strains are

alternatively referred to as “role strains” and “ambient strains,” respectively. In addition to social roles, societal status (such as socioeconomic status) is sometimes used as an indicator of the level of one type of chronic stress exposure (Baum, Garofalo, & Yali, 1999).

Researchers define chronic stress variably across fields of study. One conceptualization uses nine themes to characterize chronic stress, including, among others, persistent threat of physical harm, harm to a person’s identity or performance in a given role, over-demand or under-demand due to too many or too few tasks/responsibilities, and structural constraints in the form of few “opportunities, choices, or alternatives” (Wheaton, 1997, p. 59). Another conceptualization within the realm of chronic role strain identifies six sources of strain, including aspects of the role-related tasks and environment, inter- and intrapersonal conflicts, role captivity, loss or gain of roles, and role restructuring (Pearlin, 1983).

The UCLA Life Stress Interview (LSI) guides the present conceptualization of chronic stress: Chronic life stress represents ongoing strains across life domains, for example in relationships, employment, finances, and health, that interfere with a person’s optimal functioning in these domains. The work of sociologists measuring stress (e.g., Brown & Harris, 1978; Pearlin et al., 1981) guided UCLA LSI developer Constance Hammen’s theoretical framework for the LSI (Hammen et al., 1987). Specifically, Hammen sought to develop an instrument that captured stress within a person’s environment and context objectively (to the extent possible) rather than his/her perception of that stress, a construct emphasized within cognitive theories of depression (C. Hammen, personal communication, March 23, 2020). Hammen, similar to Brown and Harris (1978), contended that peoples’ poor life circumstances, rather than their maladaptive thinking about those circumstances, are the primary etiological agents of depression (C. Hammen, personal communication, March 23, 2020). Therefore, the

LSI gathers specific information about a person's life circumstances rather than his/her feelings about them.

Importantly, within the LSI, chronic stress is conceptualized as due to both the extent of a person's functional attainment within a domain *and* to factors independent of the person and his/her characteristics, and these components are inextricably intertwined. For example, a person may have few meaningful relationships, but it is impossible to determine whether this person's social isolation is due to poor social skills, structural constraints, or a combination of both. Ultimately, however, the result is the same: The person experiences elevated chronic strain due to the lack of social support and belonging. Reflecting this, raters use behavioral or functional anchors capturing this person's interpersonal circumstances (rather than the person's feelings about the situation).

Given the qualitative differences across life domains, the specific chronic strains are necessarily different in each LSI domain. Within interpersonal relationships, chronic stress represents the strains that threaten the maintenance and quality of the relationship (e.g., poor support, availability, trust, and conflict resolution). Across the various non-interpersonal domains, the nature of strain further varies. These include threats to a person's safety and quality of home life (neighborhood/residential domain), to academic progress and success (school domain), to employment status, safety at work, performance, and choice in employment (work domain), to financial security and sufficiency of resources to meet needs (financial domain), to personal health (own health domain), and health of close family members and associated caretaking responsibilities (family health domain).

Interim Summary

In summary, research on stress and depression has focused on acute stressful life events and to a lesser extent on childhood adversity rather than on chronic stress, in large part because of the challenges of comprehensively measuring chronic stress both validly and efficiently. Although stress broadly (and chronic stress specifically) is defined variably across fields, researchers in the field of stress and depression emphasize the importance of differentiating the stress exposure from the response in etiological investigations due to the potential for confounding the stress response with depression risk factors and depression itself (Harkness & Monroe, 2016). Further, from a theoretical perspective, some researchers argue that it is a person's poor life circumstances (their *stressors*) that are the primary etiological agents of depression within the stress pathway rather than the person's thinking about those circumstances (their stress *responses*; Brown & Harris, 1978; C. Hammen, personal communication, March 23, 2020).

Critically, however, available measures tend to conflate stress exposure and stress response, which can confound stress measurement with dependent variables, such as depression, and third variables, such as depression risk factors. In contrast to comprehensive interview measures such as the LEDS and UCLA LSI, no currently available self-report measure of chronic stress emphasizes stress exposure and examines strain across an array of life domains. Thus, in order to advance an understanding of the etiological role of chronic stress, both in depression and in other psychological and physical disorders, such a measure is needed.

Measurement of Chronic Life Stress

Overview

Three current methods for assessing recent chronic stress in adults include single domain self-report questionnaires, multiple domain or global self-report questionnaires, and life stress interviews. Two additional methods for capturing chronic stress indirectly include 1) classifying people as chronically stressed or non-stressed given one aspect of their life circumstances (for example, if they are caregivers for a person with high needs or are living with a chronic disability) but without assessing their exposure to or perceptions of chronic stress, and 2) use of a single variable, such as income, as a proxy for chronic stress (in the case of income, chronic financial strain).

Among direct chronic stress assessment approaches, current self-report measures rely largely on participant appraisals of stress exposure and therefore represent perceived chronic stress. The most common approach uses self-report measures that assess perceived chronic stress within one life domain (e.g., caregiving, work, marriage; reviewed by Hammen et al., 2015). Conversely, very few questionnaires assess perceived chronic stress across multiple domains (Hammen et al., 2015). Finally, the most robust, yet less commonly used, measurement technique for assessing chronic stress exposure involves use of life stress (or contextual threat) interviews. Interviews such as the Life Events and Difficulties Schedule (LEDS) and UCLA Life Stress Interview (LSI) assess exposure to and severity of both episodic and chronic stress across multiple domains.

Given the focus of the present study on development of an instrument for global chronic stress assessment, the following sections focus on the psychometric properties of current global

self-report measures and life stress interviews. However, a brief commentary follows on single domain self-report measures.

Single Domain Self-Report Measures of Chronic Stress

Questionnaires for stress assessment are popular due to their minimal demands on research personnel, training, financial resources, and participant time to complete. Numerous such single domain questionnaires assess constructs including chronic work, parenting, caregiving, and marital stress (Abidin, 1992; Karasek et al., 1998; Siegrist, Starke, Chandola, & Godin, 2004; Spanier, 1976; Zarit, Reever, & Bach-Peterson, 1980). Despite their advantages for efficiency and for targeting assessment of chronic stress within singular domains to address specific research questions, there are several drawbacks to their use within research on etiology of psychopathology.

First, single domain measures do not account for the correlation of chronic stress across different domains (Vrshek-Schallhorn et al., 2015) and the capacity for chronic stress spillover or contagion (Bolger et al., 1989). Spillover or contagion is the generation of stress in one life domain as a result of stress in another life domain. For example, in one study, males' reported work overload and spousal arguments (both at home) on the prior day predicted reported work overload and arguments at work the next day, respectively (Bolger et al., 1989). Single domain measures may therefore *underestimate* effect sizes for overarching chronic stress (Mazure, 1998), presenting a particular issue in the field of depression etiology because the true effect size for chronic stress may be smaller than for acute stress. Conversely, use of a single domain measure also has the potential to *inflate* the effect of that one domain if chronic stress correlates across life domains. The apparent effect of single domain chronic stress on depression may actually be driven by chronic stress in another domain (or domains) with which it correlates. In

this way, the source of chronic stress driving the effect may be masked (and potentially overestimated) through the use of single domain measures. Taken together, a careful analysis suggests that using individual domain measures can both underestimate the effect of the full array of domains of chronic stress and also overestimate the effect of that one single domain on depression.

A second drawback of single domain measures (and all self-report methods) is the potential for confounds due to individual differences in response styles, which can be driven by participant affect, memory, personality traits, and critically, psychopathology (Harkness & Monroe, 2016; Lepore, 1995). Third and relatedly, these measures generally do not differentiate the stress exposure from the response, which is a serious threat to validity due to the potential to conflate the chronic stress construct with depression risk factors that influence response styles.

Global and Multiple Domain Self-Report Measures of Chronic Stress

Only a few self-report measures capture chronic stress either globally or across multiple life domains. These include the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), the Trier Inventory for Chronic Stress (Schulz & Schlotz, 1999), the College Chronic Life Stress Survey (Towbes & Cohen, 1996), and Wheaton's unnamed measure of chronic stress (Wheaton, 1994). These measures are evaluated next using several criteria: 1) the developers' approach to generating the scales, including the extent to which the measures are grounded in theories of stress, 2) the strength of evidence supporting their reliability and validity, and 3) the emphasis on assessment of chronic stress exposure versus response.

Perceived Stress Scale (PSS)

The 14-item Perceived Stress Scale (PSS) is used extensively and measures subjective global appraisals of stress (Cohen et al., 1983). Participants respond about the frequency of

certain thoughts and feelings in the past month. The developers of the PSS grounded the measure in a transactional theory of stress, which is centered on a person's appraisals of the environment and the adequacy of his/her resources to cope with stressors, rather than the stressor itself (Lazarus, 1977; Lazarus & Folkman, 1984). The scale, also adapted to a 10-item measure, incorporates key stress-related variables of perceived overload, uncontrollability, and unpredictability (Cohen et al., 1983). It measures overall appraisals of a variety of stressors, including chronic stress, acute stress, daily hassles, and anticipation of future stress, rather than chronic stress alone. The PSS yields a total sum score, although the majority of factor analyses yield a two-factor solution that captures distress and coping ability, respectively (Hewitt, Flett, & Mosher, 1992; Lavoie & Douglas, 2011; Lee, 2012).

The psychometric properties of the PSS vary: A review concluded it shows adequate internal consistency and test-retest reliability up to a 4-week period, whereas its criterion validity was deemed poor and understudied (Lee, 2012). Additionally, over 25% of studies included in the review reported higher mean perceived stress scores for women compared to men, indicating either the potential for actual differences in perceived stress by gender or the presence of measurement bias (Lee, 2012). Further, a study found scalar and metric nonequivalence of the PSS between a sample of psychiatric inpatients and a sample of community members, suggesting the presence of measurement bias (Lavoie & Douglas, 2011). As expected, multiple studies demonstrate moderate to large correlations with depressive symptoms ($r = 0.22 - 0.76$; Lee, 2012). However, studies also find significant correlations between the PSS and neuroticism ($r = 0.65$, Ebstrup, Eplöv, Pisinger, & Jørgensen, 2011; $r = 0.495$, McHugh & Lawlor, 2012; $r = 0.33 - 0.49$, Pereira-Morales, Adan, & Forero, 2017), suggesting poor discriminant validity with a well-established risk factor for depression.

In summary, the PSS is a measure grounded in transactional stress theory, and it draws on past work emphasizing the components of perceived overload, uncontrollability, and unpredictability in stressful experiences. The PSS captures global cognitive appraisals about stress, and as such it is a measure of stress responding rather than exposure. Although widely used, the psychometric properties of the PSS, including its criterion and discriminant validity, are not uniformly sound.

Trier Inventory for Chronic Stress (TICS)

The TICS, originally developed in German, is grounded in the Systemic Requirement – Resource Model of Health, which conceptualizes chronic stress as arising from interactions of the person with his/her environment that involve excessive demands coupled with access to few resources, including poor internal coping mechanisms (Petrowski, Paul, Albani, & Brähler, 2012; Schulz & Schlotz, 1999). The scale developers describe their conceptualization of stress as a subjective experience, and they also note their choice to generate items that are non-specific in nature (Schulz & Schlotz, 1999). They report an iterative process to narrowing items to a 39-item scale, which demonstrated adequate reliability of the subscales using Cronbach’s alpha, Guttman’s test-half correlation, and the Spearman-Brown coefficient. Factor analysis also established the presence of 6 factors capturing the domains of work overload, work discontent, social stress, lack of social recognition, worries, and intrusive memories (Schulz & Schlotz, 1999). Questions are frequency-based, and instructions ask the participant to consider the past three months when responding. Validation efforts have focused on the work overload scale, which correlated with health symptoms and daily cortisol concentrations (Schulz & Schlotz, 1999).

Later iterations of the TICS included a 62-item scale (Schulz & Schlotz, 2002) and a 57-item scale (Schulz, Schlotz, & Becker, 2004). Although primary sources documenting the psychometric properties are not published in English, several more recently published studies are available. Reported internal consistencies across studies are generally high (Petrowski et al., 2012, 2018; Schulz, Schlotz, & Becker, 2004). Two studies on the 57-item scale used factor analyses to examine the fit for nine domains (social and work overload, pressure to perform, excessive work demands, work discontent, low social recognition, social tensions and isolation, and chronic worrying) in a representative German sample (Petrowski, Paul, Albani, & Brähler, 2012) and in an American college sample using a version translated to English (Petrowski et al., 2018). These nine categories are also hypothesized to fall into two broader categories (high demands and low satisfaction), and therefore a two-factor solution was also examined. In the German sample, although exploratory factor analyses indicated the presence of only two factors (identified as “high demands” and “lack of satisfaction”), the nine-factor solution provided an improved fit compared to a two-factor solution in CFA (Petrowski et al., 2012). In the American sample, however, the two-factor solution did not fit the data, while results partially supported the nine-factor solution (Petrowski et al., 2018). Of note, in the German sample, there was a lack of measurement invariance in the factor structure across gender and age.

In summary, the TICS is grounded in a theory of stress that shares similarities with the transactional stress model articulated by Lazarus and Folkman (1984). As the authors note, the chronic stress construct underlying this measure captures subjective rather than objective experiences. The subjective conceptualization of stress coupled with the non-specificity of items indicates the TICS is a stress response rather than exposure measure. Although evaluation of the measure’s psychometric properties among German samples is more advanced, further

examination of its properties, particularly its factor structure and validity metrics, among samples in the United States is required.

College Chronic Life Stress Survey (CCLSS)

The CCLSS was developed for use with young adults (Towbes & Cohen, 1996). Although the authors articulate a general definition of chronic stress involving the buildup of strains across various roles, an empirical rather than theoretical approach was used to develop the scale. Specifically, its 54 items were selected by gathering undergraduates' responses to a prompt to name stressful experiences that occurred on a regular basis over the past month. The authors removed items based on their overlap with symptoms of psychopathology and based on their acute (rather than chronic) nature. Directions on the measure ask participants to identify experiences that caused them to ““feel stressed, upset or worried at least two or three times a week”” (p. 204) and to identify the extent to which they felt bothered by each experience.

Although the measure was hypothesized to capture chronic stress across six areas, including peer, romantic, and family relationships, academic performance, lifestyle, and physical appearance and health, factor analysis did not indicate the presence of six cohesive subdomains. Therefore, two sum scores are generated, including 1) the total number of chronic stressors endorsed and 2) the degree to which the respondent felt bothered by them (i.e., “impact”).

Test-retest reliability was high for both sum scores over two weeks, (Towbes & Cohen, 1996), and although the original study did not report internal reliability, an empirical study incorporating the CCLSS reported high internal consistency for the sum score of chronic stressors (Short, Sandler, & Roosa, 1996). Further analyses in the original study examined level of agreement between responses to experiencing various stressors (yes/no) from participants and

a friend chosen to complete the CCLSS on their behalf: Agreement varied substantially across items (e.g., Kappa's, κ , from 0.01 to 0.80).

In regression analyses with two samples ($N = 92$ and $N = 66$), both scales of the CCLSS cross-sectionally predicted depressive symptoms at the first administration in the two samples, while both scales predicted symptoms at the second administration in only one sample. In initial prospective analyses, the scales significantly predicted anxiety symptoms and a locus of control variable, but not depression, one month later. In prospective analyses with a smaller subsample ($N = 41$, due to loss of participants in the second wave of data collection) with neuroticism included in the model, the CCLSS scales did not significantly predict any outcome. Although the effect of the CCLSS in the prospective prediction of depression was non-significant, the authors speculated based on the finding ($\beta = 0.18$, $p < 0.07$, p. 218) that this was likely due to insufficient power.

In summary, the CCLSS was developed using an empirically rather than theoretically driven approach, and it captures the presence of stressors in a summative manner and measures the extent one is bothered by them. Therefore, the CCLSS is a measure of stress responding rather than exposure. The scale's psychometric properties have not been thoroughly evaluated, although there are indications that the proposed dimensionality may not be empirically valid and the scale may lack discriminant validity with neuroticism, a risk factor for depression.

Wheaton's Measure of Chronic Stress

Although this measure was developed by a major theorist in the field of chronic stress (Wheaton, 1994), and thus merits discussion, its psychometric properties are not published. Similar to the CCLSS scale development, Wheaton generated items from respondents' answers to a question about the main, ongoing issues they faced. The resulting 60-item inventory, which

Wheaton constructed from 90 initial items, addresses strain across ten domains (e.g., social life, love/marriage, family/children, work). In one study using the measure, instructions indicated a focus on the present time period (Turner, Wheaton, & Lloyd, 1995). Responses measure participants' level of agreement with each statement on a scale from 0 to 3.

According to a review of the developer's conference presentation, confirmatory factor analyses of Wheaton's scale yielded a two-factor solution for chronic stress and psychological distress, as well as correlations between the scale and other variables suggestive of chronic stress, including income level and codes for certain challenging occupations from the *Dictionary of Occupational Titles* (Turner et al., 1995). Another study also demonstrated a significant difference on the chronic stress measure between single and married mothers—as predicted, single mothers tended to score higher compared to married mothers (Cairney, Boyle, Offord, & Racine, 2003). Finally, as expected, scale scores positively correlated with depressive symptoms and past-year onset of major depression (Turner et al., 1995).

In summary, Wheaton's measure was developed using an empirical approach, although the developer argues that many of the sources of chronic stress identified fall under the categories articulated theoretically, for example related to role strain (Wheaton, 1994). Further, Wheaton argues that the scale contains a combination of items that capture subjective and objective experiences to varying extents. An analysis of items within the various domains on this measure suggests some variations in the adequacy of content coverage within several domains. Finally, because the psychometric analyses conducted for this scale's development are unpublished, no conclusions can be drawn about the reliability and validity of this measure.

Strengths and Limitations of Global Measures

Global and multiple domain measures have several assessment advantages over single domain measures, with strengths including relatively stronger grounding in stress theories, broader assessment of chronic stress, specification of the time frame to reference when responding, and attention to participants' developmental stage in at least one of the measures (Towbes & Cohen, 1996). However, several limitations remain.

First, some of these measures require respondents to make subjective appraisals about stressors (e.g., the extent to which an experience bothered them) and therefore are largely measuring stress response rather than exposure. Although any questionnaire is unlikely to be able to *exclusively* measure stress exposure given the inherent subjectivity of self-reports, many of these measures focus primarily on participants' distress about their circumstances, clearly an aspect of stress response rather than exposure. When used in studies examining etiology of depression, these measures pose a high risk of confounding depression risk factors, such as neuroticism, and depression itself with the stress variable.

Second, although these measures tend to have a greater grounding in stress theory compared to single-domain measures, the theoretical basis is not uniform across measures. For example, on the CCLSS and Wheaton's measure, the items were initially developed by sampling participants' responses to an open-ended question about their stressors. This development process has pitfalls, including reliance on a particular sample to accurately identify stressors and generate items with sufficient coverage of the theoretical construct of interest (DeVellis, 2017). Depending on the representativeness of the sample, the extent to which the stressors identified by the sample's participants cannot be assumed.

Third, the measures reviewed here have varying degrees of psychometric support, particularly within validity indices. There are very few peer-reviewed publications including two of the four global/multiple domain measures, the CCLSS and Wheaton's measure, and therefore evidence for their psychometric properties is limited overall. Further, additional psychometric evidence for the TICS is needed to validate the version translated into English.

Finally, it should be noted that the PSS, while used empirically to assess chronic stress response, lacks validity as a chronic stress responding measure because it measures a person's appraisals of circumstances broadly, which is likely to often include chronic stress, stressful life events, daily hassles, and anticipated stress.

Taken together, there is no global or multiple domain measure that is grounded in stress theory, has adequate published psychometric properties, and has a primary focus on stress exposure.

Life Stress Interviews

Contextual life stress interviews were developed in response to identified validity concerns with life events checklists (Vrshek-Schallhorn, Ditcheva, & Corneau, 2020) and are intended to objectively assess stress exposures, including episodic and chronic stress, rather than responses. Two frequently used threat interviews assessing chronic stress, the Life Events and Difficulties Schedule (LEDS; Brown & Harris, 1978) and the UCLA Life Stress Interview (Hammen et al., 1987), use objective severity ratings of episodic and chronic stressors by trained researchers, although both the conceptualizations of chronic stress and rating systems differ between the two interviews. A third interview, the Stressful Life Events and Difficulties Interview (Leserman, 2003) also measures chronic stress, but it has rarely been used in empirical studies.

Life Events and Difficulties Schedule (LEDS)

Brown and Harris (1978) developed the first contextual threat interview approach for stressor assessment, the LEDS, which measures both life events and chronic stressors, the latter of which they term *difficulties* and define as ongoing conditions lasting for four weeks or more. Interviewers administer general probes about difficulties in various areas (e.g., work, finances, family relationships, friendships) and follow up with questions to elicit descriptive information based on initial responses. The descriptive information allows interviewers to gain a specific understanding of the difficulty—including information on its duration—and the context in which it occurs, which contributes to its level of threat.

Descriptions of difficulties are then presented to and scored by independent raters, who are blind to the participant's emotional responses to the stressors and his/her symptoms of psychopathology, using a six-point severity scale. Extensive manuals documenting examples of different difficulty forms and severities serve as a reference when making ratings. Typically, only chronic stressors that meet Brown and Harris's criteria for "major chronic difficulties" are included in analyses; these represent discrete chronic stressors that are not health-related, persist for at least two years, and are rated in the top three points of the six-point severity scale. At least one publication, however, included stressors in the top four points (Rojo-Moreno et al., 2002). Major chronic difficulties are treated either as present or absent or as a total count, rather than dimensionally, in most analyses.

LEDS difficulties have high interrater reliabilities for decisions regarding whether circumstances should be considered "major difficulties" (yes/no; $\kappa = .86$, Harkness, Theriault, Stewart, & Bagby, 2014; $\kappa = .72 - .79$, range assumed to encompass both events and difficulties, Monroe, Slavich, Torres, & Gotlib, 2007). Regarding validity, the LEDS was developed from a

theoretical perspective that posits a primary role for environmental conditions, rather than appraisals, in the etiology of depression (Brown & Harris, 1978). The authors drew on this perspective when developing interview probes for difficulties that obtain objective contextual information for threat ratings by a team of raters, which suggests the LEDS has adequate content validity. Further, as expected, LEDS difficulties predict depression in multiple studies (e.g., Brown & Harris, 1978; Costello, 1982; Rojo-Moreno et al., 2002). However, reports that could provide evidence of discriminant validity, including correlations between the LEDS difficulties and perceived stress and neuroticism (which are expected to be low), are not published.

UCLA Life Stress Interview (LSI)

Hammen and colleagues (1987) later developed a second contextual threat interview, the UCLA LSI, to assess life events and chronic stress. The chronic stress component of the LSI assesses stress across up to ten life domains, depending on the study population—close friendship, social group, romantic relationship, family relationships, neighborhood, school, work, finances, personal health, and immediate family members' health. The LSI conceptualizes chronic stress exposure on a bipolar dimension from best possible (1) to worst possible (5) conditions in each domain. As a result of this conceptualization and in contrast to the LEDS, all domains are assessed and rated dimensionally for all participants. Interviewers ask a series of standard questions as well as follow-up questions as necessary to elicit details of circumstances in each domain. Participants are asked to consider their experiences over a set time frame, typically the past 6 months to a year prior to interview, varying by study. In many analyses, the interpersonal domains (close friendship, social group, romantic relationship, and family relationships) and non-interpersonal domains (neighborhood, school, work, finances, personal and family health) are considered separately as averaged composite scores.

In general, questions assess descriptive information rather than participants' subjective appraisals, with some exceptions, such as whether the participant feels lonely in the context of his/her social life. Of note, however, when making severity ratings, interviewers consider the responses to these subjective questions along with the extensive concrete information obtained (e.g., number of friends in social group, amount of time spent together, reciprocity of contact). Proration of scores is also possible if participants have had qualitatively different experiences within a domain over the assessment time frame. For example, a participant who held a job for three months and who then was unemployed for three months would be asked questions about each set of circumstances; the interviewer would determine an overall average rating for the domain accounting for both (Hammen, 2001). The interviewer rates severity on a 5-point scale in each domain, using a manual that provides descriptive anchors for each point on the scale.

Past studies demonstrate adequate to high interrater reliabilities on the LSI (e.g., for individual chronic LSI domains: Interclass correlation coefficients, ICCs = 0.77 - 0.89, Hammen et al., 2009; ICCs = 0.62 - 0.91, which includes interrater reliability across teams at two different sites, Vrshek-Schallhorn et al., 2015). Evidence for the LSI's convergent validity comes from significant correlations of LSI domain scores with scores on additional indicators of overlapping constructs—for example, between the financial domain and income, between the romantic relationship domain and marital satisfaction, and between the family relationship domain and children's ratings of their mother's characteristics, such as warmth (Hammen et al., 2009). Further, multiple studies establish chronic stress as measured by the LSI as a significant predictor of prospective depression (e.g., Daley, Hammen, & Rao, 2000; Hammen et al., 2009; Sheets & Craighead, 2014; Vrshek-Schallhorn et al., 2015).

In contrast to other measures, there is evidence documenting at least moderate discriminant validity between LSI chronic stress and both perceived stress and pre-existing depression risk factors; however, it is reasonable to expect some relationship given that these characteristics likely contribute to stress generation. For example, people higher in neuroticism may form objectively fewer and less supportive relationships. Although comparisons to the Perceived Stress Scale could not be located for the full LSI, the correlation between an adapted shorter version of the LSI and the PSS was significant though moderate in size ($r = 0.37$; Tanner Stapleton et al., 2016). Further, in another study oversampling for high neuroticism, the LSI interpersonal domain composite (representing scores across close friendships, social life, romantic relationship, and family relationships) correlated positively and significantly with neuroticism, although the effect size was small ($r = 0.28$; Doane et al., 2013). A separate study also demonstrated low correlations, in this case non-significant, between neuroticism and the LSI interpersonal composite ($r = .10$) and the non-interpersonal composite (composed of scores across work, school, finances, and health-self; $r = 0.16$; Békés et al., 2015).

Limitations of Interview Methods

Despite their methodological rigor, interview measures have several drawbacks. First, direct comparison of findings between the two major interviews (the LEDS and LSI) is impossible due to their different conceptualizations of chronic stress and differences in the timing of chronic stressors in each interview (e.g., requiring a discrete stressor to last at least two years or more in the LEDS, and assessing a typically shorter period in the LSI, such as 6 to 12 months). Their different conceptualizations are reflected in the dichotomization of “major” chronic stress in the LEDS (present/absent) compared to the dimensional approach used in the LSI.

Second, the dichotomization in the LEDS is problematic because there is no established “cut point” for the level of severity of chronic stress that confers risk for depression. Although the LEDS developers indicate in their text that this cut point was empirically derived (Brown & Harris, 1978), independent replication of this cut point has not been reported. Further, whenever possible, analyses should preserve dimensionality to maintain statistical power, given evidence that dichotomization sacrifices power equivalent to eliminating upwards of 38% of cases studied (Cohen, 1983).

Third, regarding the severity scales used in these two interview approaches, because only a single rating is assigned (for each difficulty in the LEDS and for each domain in the LSI), we are precluded from conducting finer-grained analyses that could probe whether certain components or experiences within a domain or difficulty are especially depressogenic. For example, is the degree of lack of support from a friend the most potent, or the frequency of arguments?

Fourth, interview-based tools require a substantial commitment of time and personnel for training, administration, supervision, and ratings of stress. Although considered the most robust for assessing stress exposure because trained raters apply the same scale and consider objective information, these approaches can be prohibitive for researchers, limiting the number of studies that utilize them. They may also limit sample sizes, which in turn increases the likelihood of missing effects for chronic stress that, as noted earlier, may be smaller than the effects of acute stressful life events. Thus, new tools are necessary in order to address researchers’ repeated calls to expand research on chronic stress, both in number and sample size of studies, while preserving as much of the rigor of these interview approaches.

This is a critical need in our current research environment, which is moving increasingly toward so-called big data designs. Sample sizes of studies with the LSI and LEDS range from approximately 100 to 800 participants (e.g., Hammen et al., 2009, Monroe et al., 2007, & Vrshek-Schallhorn et al., 2015). By contrast, big data studies include sample sizes several orders of magnitude larger than those in interview-based studies. For example, a recent study examining the effects of stressful life events and early adversity, as measured with a 10-item self-report event checklist, in interaction with genetic variables drew on samples ranging from approximately 62,000 to 443,000 people (Border et al., 2019). Although the use of intensive interview techniques is simply incompatible with such designs, substitution with poor self-report measures of stress creates the risk of erroneous conclusions through mismeasured environments (Vrshek-Schallhorn, Corneau, & Starr, 2019). This is particularly problematic in studies with impressively large sample sizes because conclusions drawn from them are typically considered authoritative and have the potential to significantly affect research and funding priorities. As such, scalable measures retaining desirable properties of interview measures are needed.

Goal and Hypotheses

Although chronic stress is an important construct across numerous fields, including in research on mental and physical disease pathways, few methods target chronic stress exposure, a critical variable for understanding the stress process (Pearlin et al., 1981). Life stress interviews provide one method for researchers with substantial resources and access to specialized training. However, a reliable and valid self-report measure with the capability of assessing chronic stress exposure comprehensively across life domains—and that does not require substantial resources or specialized training—would enable more investigators to contribute to studying chronic stress. There is a particular need for such a measure within the field of depression etiology, in which

chronic stress is understudied and often inadequately assessed compared to its acute stress counterpart.

The goal of this study was to address this need through the development and initial evaluation of a new measure that assesses, to the extent possible on a self-report instrument, chronic stress *exposure* rather than response across life domains. The development of the instrument, termed the Chronic Life Stress Questionnaire, was strongly guided by the UCLA LSI (with LSI developer Dr. Hammen's permission). Domains assessed on the CLSQ include interpersonal domains of close friendship, social life, romantic relationship, and family of origin relationships, and non-interpersonal domains of neighborhood, school, work, finances, health of self, and health of family. These areas are appropriate for the developmental period of young adulthood; additional or modified content (such as probes for relationships with in-laws and one's own children, as well as need for further education if recently graduated), are necessary considerations for other developmental stages. The present study evaluated the psychometric properties of the CLSQ developed for young adults, including its reliability and validity, using classical test theory as a framework across four samples of undergraduate students ages 18 to 24 years old. I hypothesized the following:

Hypothesis 1: The CLSQ scales will each demonstrate good internal consistency reliability.

Hypothesis 2: The CLSQ scales will demonstrate good temporal stability over a one-week period through high test-retest reliability.

Hypothesis 3: The CLSQ domain scales will correlate significantly with each other, with correlations ranging from small to medium in size.

Hypothesis 4: Confirmatory factor analysis using domain scores will support a two-

factor solution representing an Interpersonal composite, with Close Friendship, Social Life, Romantic Relationship, and Family Relationships as indicators, and a Non-Interpersonal composite, with Neighborhood, Academics, Employment, Finances, Health-Self, and Health-Family as indicators.

Hypothesis 5: The CLSQ will demonstrate strong criterion validity through significant, large correlations with the UCLA LSI, including between individual domain scores, Interpersonal and Non-Interpersonal composites, and overall (total) score.

Hypothesis 6: The CLSQ's Interpersonal and Non-Interpersonal composite scores, as well as the individual domain scales, will demonstrate construct validity through significant, medium to medium-large correlations with current depressive symptoms.

Hypothesis 7: Lifetime depressive symptoms during the most severe week of symptomatology will correlate with chronic stress through significant, medium correlations with the CLSQ composites and individual domains to further support construct validity of the CLSQ.

Hypothesis 8: In exploratory analyses, the CLSQ composites and LSI composites will both predict prospective depressive symptoms at a three-month follow-up.

Hypothesis 9: The CLSQ Interpersonal and Non-Interpersonal composites, as well as the individual domains, will demonstrate discriminant validity with stress appraisals (a component of the stress response) and trait neuroticism (a

risk factor for depression) through significant but medium correlations, in contrast to the larger predicted CLSQ-LSI correlations.

CHAPTER II: METHODS

The development of the CLSQ involved generation of a large item pool and evaluation of items by a team of expert and non-expert reviewers to produce the final questionnaire.

Investigation of the questionnaire's psychometric properties involved administration of the CLSQ and additional measures to four separate samples across three settings. All study procedures were approved by the Institutional Review Board at the University of North Carolina at Greensboro.

Construction of the Chronic Life Stress Questionnaire

As previously described, researchers define chronic stress variably across and within fields, few psychometric questionnaires of chronic stress exist, and none have been designed to capture chronic stress exposure specifically. Conversely, life stress interviews were developed with the goal of measuring stress exposure rather than response, and the UCLA Life Stress Interview (Hammen et al., 1987) assesses chronic stress exposure in a comprehensive manner—more so than do extant chronic stress questionnaires—across ten life domains. Further, the chronic stress constructs assessed on the LSI derive from theoretical and empirical work characterizing the nature of chronic stress (e.g., Brown & Harris, 1978; Pearlin et al., 1981), and include both role strains (strains within social roles, such as family relationships and work; Pearlin, 1983) and “ambient” or non-role strains (strains in non-role domains, such as health and residential conditions; Pearlin, 1989). Therefore, given the emphasis on stress exposure and on comprehensive assessment of role and ambient strains, the LSI served as a guide for the development of the CLSQ.

A close analysis of constructs assessed within each of the ten domains on the LSI and preparation of written construct specifications ensured adequate coverage in the domains of close

friendship, social life, family relationships, romantic relationship, neighborhood, finances, school, work, health of self, and health of family. Briefly, within the interpersonal role domains (close friendship, social life, romantic relationship, and family relationships), chronic stress is conceptualized as ongoing strains that threaten the maintenance and quality of the respective relationships, which involve the extent of availability, acceptance, closeness, trust, nature of conflict, and conflict resolution. At one extreme, there are many threats to the maintenance or quality of the relationship(s) *and* few positive relationship factors, and at the other extreme, there are few threats *and* many positive relationship factors.

Within the role domain of work, chronic stress represents ongoing strains that threaten the person's employment status and that involve high demands and limited rewards. In the area of unemployment, chronic stress involves the need to work and barriers to obtaining work. Within the role domain of academics, ongoing strains include those that threaten a student's progress toward academic and related future goals. Finally, in the "ambient" domains of neighborhood, finances, and health, ongoing strains involve those that threaten the safety and/or quality of home life, financial security and the ability to obtain resources, and physical health (including health behaviors and chronic illness) of the person and their close family members, respectively. Within each of these areas and analogous to the interpersonal domains, at one extreme there are many threats *and* few positive factors, and at the other extreme, there are few threats *and* many positive factors. Response options on the CLSQ items include a 5-point Likert scale to parallel the LSI's chronic stress 5-point severity scale, in which higher scores represent higher strain. The assessment period for the CLSQ included the past 6 months, as is customary in many studies with the LSI and which allows for an adequate interval during which to assess ongoing, rather than acute or episodic, stress.

The initial CLSQ item pool included 221 scored items. In addition to questions asked on the LSI interview, additional items were developed for the CLSQ to ensure sufficient coverage of constructs within each domain. For example, new items assessed mutuality, honesty, and styles of conflict within interpersonal relationships, satisfaction with physical relationship within a romantic relationship, personal space and privacy in a residence, multiple types of crimes committed within a neighborhood, academic resources available to a student, and sleep as a component of overall health. Of note, sleep items were adapted from the Pittsburgh Sleep Quality Index (Buysse et al., 1989), and questions about heavy alcohol use were based on the definitions provided by the National Institute on Alcohol Abuse and Alcoholism (NIAAA, n.d.).

Instructions in several CLSQ domains differ compared to the LSI. While the LSI assesses all romantic relationships, relationships with all primary caregivers, residences, schools attended, jobs held, and health of all immediate family members over the previous 6 months, the CLSQ adopts a more limited approach given the overall length of the questionnaire. Specifically, participants rate the romantic relationship they were in for the longest time over the past 6 months, as well as the residence and school in which they spent the most time, and either the main job or job they held for the longest duration over the past 6 months. In the family relationships domain, participants answer questions about the caregiver whom they felt closest to in the past 6 months (along with general questions about immediate family overall). In the health of family domain, questions ask about the most serious medical condition of an immediate family member (with additional questions about immediate family overall).

To promote content validity, consistent with recommendations for scale development (DeVellis, 2017), an expert reviewer who trained with Dr. Hammen and has extensive experience with the LSI provided initial feedback on the CLSQ item pool and feedback on

multiple drafts during the development period. Six additional reviewers also provided feedback on the item pool, including a second expert reviewer who trained with Dr. Hammen and has extensive knowledge of the LSI, an expert reviewer in the area of scale development, three reviewers well-versed in administering and scoring the LSI, and one non-expert reviewer. The final version administered to participants after all revisions included a total of 142 scored items, reflecting removal of 79 items through the iterative editing process.

The CLSQ guides participants through a series of routing questions (e.g., “*Do you have a close friend?*”; “*Have you been employed in a paid position for any length of time in the past 6 months?*”) and skips out of sections that do not apply to participants based on their responses (e.g., if they have not worked, they do not answer the related block of questions but instead are diverted to questions about the circumstance of not working).

On the LSI, if a participant endorses having no close friend and/or no social group, a score of 5 is assigned to those respective domains. While a similar scoring approach was planned for the CLSQ, the assignment of scores of “5” for participants on the Close Friendship and/or Social Life scales created a large amount of kurtosis and skew in the distributions. Therefore, no Close Friendship and/or Social Life scale scores were generated for participants who indicated an absence of a close friend ($N = 3$) and/or social group ($N = 26$) and did not answer the corresponding questions.

Responses were specific to the item content and included extent/quantity (e.g., “*How close have you felt toward your friend?*”: *Extremely to Not at All*; “*How much personal private, or sensitive information have you felt that you could share with your friend?*”: *Everything to Nothing*), frequency (e.g., “*How often have your neighbors or the people you live with engaged in unsafe or illegal activities in your neighborhood or residence, that you are aware of?*”: *Never*

to *Several times a week*; “*How often have you and your parent/guardian/caregiver had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?*”: *Never to Always*). For some items, responses contained specific contextual information: “*Which of the following options best describes how a typical argument (emotional conflict) has gone with your parent/guardian/caregiver? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.*”: *We talk and listen to each other calmly and respectfully to One or both of us use physical violence or make threats of violence*”; “*In the past 6 months, which best describes the grades you have received at that school?*”: *A average to F average*).

Scoring of the CLSQ is detailed in the Data Analytic Plan section. Briefly, the questionnaire yields 13 scores in the areas of Close Friendship, Social Life, Romantic Relationship-In Relationship, Romantic Relationship-Dating, Romantic Relationship-Single, Family Relationships, Neighborhood, Academics, Employment-Working, Employment-Not Working, Finances, Health-Self, and Health-Family—many of which are composed of subscales identified through exploratory factor analyses—as well as scores representing Interpersonal and Non-Interpersonal composites that are analogous to the frequently-used LSI composites. Of note, also similar to the LSI scoring approach, the three Romantic Relationship and two Employment scales are combined in their two respective domains for an overall score using a weighted average, which is based on the amount of time in each circumstance over the past 6 months.

Psychometric Evaluation of the Chronic Life Stress Questionnaire

Participants

To evaluate the psychometric properties of the CLSQ in a large and diverse sample of young adults, data was collected from four samples ($N = 954$) at three academic institutions from

Fall 2019 to Winter 2021. These institutions included a public university (University of North Carolina at Greensboro, UNCG) and a community college (Guilford Technical Community College, GTCC) in central North Carolina with enrollments of approximately 19,000 and 14,000 students, respectively, and a private university (University of Rochester) in Upstate New York with an enrollment of approximately 12,000 students. At UNCG and the University of Rochester, students ages 18 through 24 were recruited to participate in the study from the human subjects research pool in each university's Psychology Department. The age range of 18 to 24 was chosen to capture the period of young adulthood, for which the CLSQ items were developed. At GTCC, students could not be screened for age prior to participating; therefore, students outside of this age range were permitted to complete the study with the full knowledge and permission of the IRB, but their data were excluded from analyses. All participants were awarded course credit toward their psychology course research participation requirement, and participants in one sample at UNCG received a \$10 Amazon e-gift card for completing a three-month follow-up questionnaire. Table 1 in Appendix B provides dates of data collection, sample sizes, and numbers of participants excluded from analyses for age, survey missingness, and inattention in each sample.

Demographic information is presented in Table 2 (Appendix B). Following exclusions, the analytic sample of 787 respondents was between 18 and 24 years ($M = 19.4$, $SD = 1.6$), predominantly female (71.0% Female), racially and ethnically diverse—with White (40.5%), Black or African American (23.1%), and Asian or Asian American (13.6%) representing the three largest racial/ethnic identity groups, and socioeconomically diverse (using income bracket as a proxy; yearly income spanned all income categories, from less than \$25,000 to greater than or equal to \$130,000). More than one in six participants (17.8%) indicated they were born

outside of the United States. The samples at the three institutions did not differ on gender identity ($\chi^2(2) = 3.59, p = .166$). As anticipated, however, the samples differed on racial/ethnic identity ($\chi^2(2) = 6.58, p = .037$). At GTCC, nearly equal numbers of participants identified as BIPOC or White, respectively, while at UNCG a larger proportion of participants identified themselves as BIPOC than as White. At Rochester, the proportions appeared to be intermediate between those reported at UNCG and GTCC. Also as anticipated, the samples differed on yearly income ($F(2, 772) = 26.56, p < .001$). Tukey HSDs indicated that the mean yearly income at Rochester was highest, followed by UNCG, and finally by GTCC. Taken together, these subsample differences highlight the diversity of the overall sample, which reduces the risk of constrained range of stress exposure.

Measures

Overview

Participants in each of the four samples completed the CLSQ along with additional measures, several of which varied by sample in order to address all study hypotheses. Figure 1 (Appendix C) summarizes which measures were administered and which hypotheses were addressed in each sample. Briefly, data from all four samples addressed Hypotheses 1 (internal consistency of CLSQ scales), 3 (correlations of CLSQ domain scales), 4 (CLSQ confirmatory factor analyses), 6 (construct validity through correlations of the CLSQ with current depressive symptoms), and 9 (discriminant validity through correlations of the CLSQ with perceived stress and neuroticism). Data from one of the four samples addressed Hypothesis 2 (test-retest reliability) through administration of the CLSQ to students at UNCG on two occasions one week apart. Data from a second sample at UNCG addressed Hypotheses 5 (criterion validity through correlations of the CLSQ with LSI scales), 7 (construct validity through correlations with most

severe lifetime depressive symptoms), and 8 (prospective prediction of depressive symptoms by the CLSQ and LSI scales). Participants in this sample completed LSI interviews, a self-report measure of most severe lifetime depressive symptoms, and a three-month follow up self-report of depressive symptoms.

Measures Administered to All Participants

Chronic Life Stress Questionnaire. All participants completed the 142-item CLSQ (Appendix A) to assess chronic stress exposure over the previous 6-month period. Routing questions guided participants through completion of each of the domains in the following order: Close Friendship, Social Life, Romantic Relationship (including separate scales for In a Relationship, Dating, and Single), Family Relationships, Neighborhood, Academics, Employment (including scales for Working and Not Working), Finances, Health-Self, and Health-Family. Depending on participants' responses to routing items (e.g., prior to the Close Friendship items, "*Do you have a close friend?*"; prior to the Employment items, "*Have you been employed in a paid position for any length of time in the past 6 months? Paid internships may be counted.*"), they were either asked to complete the questions within that domain or were brought to the next domain. Participants responded to CLSQ items on a 5-point scale, with lowest strain/most positive conditions indicated by 1 and highest strain/least positive conditions by 5.

Scoring of the CLSQ included obtaining the mean of subscales when present—subscales were identified within CLSQ scales through exploratory factor analyses (see Data Analytic Plan)—and obtaining an overall mean (the mean of subscale means) for each of the CLSQ scales. Of note, for the CLSQ Romantic Relationship and Employment domains, which are composed of three and two scales, respectively, I calculated weighted averages of the component

scales to parallel the approach used in LSI scoring. While LSI interviewers mentally estimate weighting based on the amount of time participants spend in each circumstance over the past 6 months (for example, 2 months in a romantic relationship and 4 months single; 3 months working and 3 months not working), the CLSQ scoring was based on participants' responses to questions about the length time in each circumstance. Responses to these questions provided a weighting factor to allow a more exact calculation of weighted averages (i.e., *About 6 months* = 1, *About 5 months* = .83, *About 4 months* = .67, *About 3 months* = .5, *About 2 months or less* = .33).

Construction of CLSQ composite scores followed the approach used in the LSI: The scale scores were z-scored, and the average z-score was obtained for the Close Friendship, Social Life, Romantic Relationship, Family Relationships scales and for the Neighborhood, Academics, Employment, Finances, Health of Self, and Health of Family scales to represent the Interpersonal and Non-Interpersonal composites, respectively.

Attentive Responding Scale. Inattentive responding on self-report measures contributes to study error variance, which can negatively influence the internal consistency of self-report measures and reduce statistical power (Maniaci & Rogge, 2014). Studies using different metrics indicate a range of prevalence for inattentive responding among participants (e.g., from 3.5% in one study to 46% in another; Johnson, 2005; Oppenheimer, Meyvis, & Davidenko, 2009).

The present study included the 18-item version of the Attentive Responding Scale (ARS-18; Maniaci & Rogge, 2014) embedded within the CLSQ. The ARS-18 contains an infrequency scale with 6 statements capturing responding on unlikely items (e.g., "I don't like being ridiculed or humiliated") as well as an inconsistency scale with 6 statement pairs with highly similar content capturing inconsistent responding when endorsed in opposite directions (e.g., "I am an

active person” and “I have an active lifestyle”). Respondents provide answers on a 5-point Likert scale (“Not at all true” to “Very true”). The ARS-18 inconsistency item pairs were presented at random intervals in opposing halves of the CLSQ, and the infrequency items were presented at random intervals throughout the scale. Previously established cut-off scores for determining highly inattentive responding, including a score above 7.5 on the infrequency scale *and/or* a score above 6.5 on the inconsistency scale (Maniaci & Rogge, 2014), were used to exclude participants from analyses.

Current Depressive Symptoms. The Diagnostic Inventory for Depression (DID) reflects the DSM-IV and DSM-5 symptoms criteria for major depression and assessed depressive symptoms over the past week (Zimmerman, Sheeran, & Young, 2004). It contains 19 symptom items that assess symptom severity (including separate questions for symptom variations, such as appetite loss or gain) using a sum score. The current study assessed depressive symptom severity using a modified DID with 17 symptom items and not including the two items assessing suicidality. For each item, participants selected from five possible statements—which were specific to each item/symptom—representing increasing symptom severity. Mean DID scores were used in analyses.

Neuroticism. The personality trait of neuroticism was measured using the 10-item International Personality Item Pool (IPIP) version of the Revised NEO Personality Inventory’s neuroticism domain (NEO-PI-R, Costa and McCrae, 1992; International Personality Item Pool, n.d.). Neuroticism captures a person’s tendency to experience negative emotions and is a well-established risk factor for depression (Klein, Kotov, & Bufferd, 2011). The IPIP NEO-PI-R measure was used in analyses examining the discriminant validity of the CLSQ. Instructions

asked respondents to rate the extent of accuracy of each statement on a 6-point Likert scale (“Very Inaccurate” to “Very Accurate”). Mean IPIP NEO-PI-R scores were used in analyses.

Perceived Stress. The 14-item Perceived Stress Scale (PSS) captures subjective stress appraisal and therefore measures stress responding (Cohen et al., 1983). This measure was used to test the discriminant validity of the CLSQ, specifically to examine the extent to which the CLSQ captures stress exposure as intended rather than stress response. Instructions asked respondents to consider the past month when reporting on the frequency of thoughts and feelings using a 5-point Likert scale (“Never” to “Very often”). Mean PSS scores were used in analyses.

Measures Administered in Single Sample

UCLA Life Stress Interview. The UCLA LSI is a life stress interview that assesses chronic and episodic stress exposure across up to 10 life domains depending on the study population (Close Friendship, Social Life, Family Relationships, Romantic Relationship, Neighborhood, Academics, Employment, Finances, Health of Self, and Health of Family; Hammen et al., 1987). The present study assessed chronic stress across all 10 domains in one sample of participants completing the study at UNCG. Prior to conducting interviews, research assistants participated in a rigorous training and clearance process led by the lab’s principal investigator (SVS) and this author, which included didactic training, role plays, and completion of chronic stress severity ratings from LSI audio recordings and mock interviews.

Interviewers made chronic stress severity ratings using a 5-point scale that represents the best (1) to worst (5) possible conditions in half-point increments. Descriptive rating anchors are provided in the interview and manual in full point increments (Hammen, 2002). The Romantic Relationship and Employment domains were assigned prorated chronic stress scores to account for endorsements of different circumstances across the 6-month interview period. In these cases,

as is customary for the LSI, interviewers mentally estimated averages of the subdomain scores that were roughly weighted by the amount of time the participant experienced each circumstance (Hammen, 2001). The Interpersonal and Non-Interpersonal composites were calculated by z-scoring the chronic stress severity scores in each domain and taking the average of z scores across the Close Friendship, Social Life, Romantic Relationship, and Family Relationships domains for the Interpersonal composite and across the Neighborhood, Academics, Employment, Finances, Health-Self, and Health-Family domains for the Non-Interpersonal composite.

Interviews were audiotaped, allowing for review and independent scoring by a second blind trained interviewer. A total of 15% of interviews were reviewed and rescored, and interclass correlation coefficients measured interrater reliability for chronic stress severity scores. Additionally, to maintain raters' fidelity during data collection, interviewers periodically presented synopses from full-length chronic LSIs and from single domains of the LSI to rating teams. Teams then made ratings that were compared with the interviewer's ratings, and if any discrepancy was greater than 0.5, the interviewer's original rating was adjusted to reflect the team's consensus.

Lifetime Depressive Symptoms (Most Severe). Participants in the same sample that completed the UCLA LSI also completed a second version of the Diagnostic Inventory for Depression (in addition to the DID for current symptoms), which was modified to assess participants' lifetime depressive symptoms during the most severe period of depressed mood. The DID was modified with developer Dr. Mark Zimmerman's permission and was modeled after the lifetime version of the Inventory to Diagnose Depression (Zimmerman & Coryell, 1987). Participants responded to the same 17 items on the DID-current but for the week they identified as the most severe at any point in their life. This measure of lifetime depressive

symptoms was used in a further test of construct validity, specifically to evaluate whether stress generation may be evident through an association of past depression with recent CLSQ-assessed chronic stress (Hammen, 1991; Liu & Alloy, 2010).

Procedure

Participants in all samples completed questionnaires via a secure Qualtrics link. In the sample at UNCG that completed the UCLA LSI, participants completed interviews and questionnaires during an in-person lab visit up to March 2020. Due to the COVID-19 pandemic, participants in this sample completed sessions virtually via UNCG's secure WebEx videoconferencing platform from April to September 2020. Procedures for this session were counterbalanced to avoid introducing a confound through the order of administration of the LSI and CLSQ. Approximately three months following the in-lab visit, participants were contacted via email and provided a Qualtrics link to complete the Diagnostic Inventory for Depression based on symptoms over the last week.

In the second sample at UNCG, which included administration of the CLSQ again after one week to investigate test-retest reliability, participants were contacted by email one week following the first study session and were provided a Qualtrics link to complete the CLSQ. Of note, to increase the opportunity for students to complete their research participation requirement at the end of the semester, students who completed the first session of the study received the link for the second CLSQ even if a week had not passed; however, only participants completing the CLSQ a second time after four or more days were included in analyses.

Analytic Plan

Data Reduction and Missingness

Participants who completed less than half of the CLSQ ($N = 43$) or who demonstrated highly inattentive responding ($N = 38$), as evidenced by scores above 7.5 on the ARS infrequency scale and/or 6.5 on the inconsistency scale, were excluded from analyses.

Participants who indicated through the CLSQ routing questions that they did not qualify for questions in certain domains (e.g., indicating the absence of a close friendship, social life or one acquaintance, immediate family) were not automatically excluded due to relatively lower numbers of responses compared to participants who completed more domains. Instead, exclusion from analyses was based on the number of items answered within the remainder of possible domains—participants who answered less than half of the items in the remainder of possible domains were excluded.

There was minimal missingness on individual CLSQ scale scores ($N = 2$ on the Neighborhood, Academics, Employment-Working, Employment-Not Working, Health-Self, and Health-Family scales and $N = 4$ on the Finances scale), and on additional measures ($N = 0$ for LSI interviews, $N = 3$ on the DID, $N = 4$ on the PSS, and $N = 5$ on the IPIP NEO-PI-R). At the item level, CLSQ responses were missing on one to four items across scales, and DID responses were missing on one to two items. Participants missing up to 20% of items on the CLSQ scales and on the DID were retained in analyses and prorated means were calculated for the respective scales.

Participants' responses on the CLSQ, DID for current depressive symptoms, PSS, and IPIP NEO-PI-R were pooled across the four samples for analyses to maximize power and generalizability of findings.

Analyses incorporating the LSI, most severe lifetime depressive symptoms, prospective depressive symptoms, and the second CLSQ were carried out within the respective samples that had completed these measures. Of the participants in the UNCG sample who completed a second administration of the CLSQ ($N = 163$), two were excluded due to inconsistent responding on the ARS, and 22 were excluded from analyses due to a shorter than permitted time interval (≤ 3 days) between CLSQ administrations.

CLSQ Item-Level Analyses

Item-level analyses, including evaluation of descriptive statistics and correlations, were conducted using IBM SPSS Statistics, Versions 27 and 28. I first examined item means (which estimate item difficulty in the CTT framework; Finch & French, 2018), variances, skewness, and kurtosis to ensure an adequate distribution of responses. I expected approximately normal distributions of items. Then, I examined inter-item correlations within each domain as well as corrected item-scale correlations excluding the given item, the latter of which estimates item discrimination (Cappelleri, Lundy, & Hays, 2015).

The patterns of inter-item correlations within CLSQ scales suggested that certain “subgroups” of items were more strongly associated with each other than with other items (e.g., the Close Friendship items related to closeness appeared more strongly associated with each other than with the conflict items, and vice versa). Therefore, to examine dimensionality, identify potential subscales present within each scale, and inform item elimination decisions, I conducted separate exploratory factor analyses (EFA) with each of the thirteen CLSQ scales. EFA analyses were conducted in Mplus, Version 8, using maximum likelihood estimation with an oblique (geomin) rotation to allow factors to correlate. Factor selection included evaluation of 1) eigenvalues through scree plots and parallel analysis (including examination of solutions with

one more and one less factor indicated by parallel analysis; Lim & Jahng, 2019), 2) model fit statistics, and 3) conceptual meaning of factors (Rosellini & Brown, 2021). Item elimination decisions involved identification of items that demonstrated poor properties (e.g., low item-scale correlations, high skew and/or kurtosis values, weak factor loadings, high cross loadings, and/or evidence of redundancy with similar items) and consideration of the effects of item removal on construct coverage. Based on recommended best practices, when EFA suggested poor item properties, items were removed individually, and analyses were re-run and re-interpreted (Rosellini & Brown, 2021).

CLSQ Domain-Level Analyses

Domain-level analyses were conducted using IBM SPSS Statistics (Versions 27 and 28), including the OMEGA macro developed by Hayes (2020), and Mplus (Version 8).

Hypothesis 1: Internal Consistency Reliability

Internal consistency of the CLSQ's subscales—and of scales when no subscales were present—were estimated with Cronbach's alpha and McDonald's omega, the latter of which is a more accurate estimator of reliability when essential tau-equivalence is violated, as is likely for many measurement scales (Hayes & Coutts, 2020).

Hypothesis 2: Temporal Stability

Test-retest reliability of the CLSQ scales and subscales was estimated using intraclass correlation coefficients with two-way mixed effects models. Although the study aimed to predict temporal stability over a one-week period, only a small subsample of participants ($N = 29$) completed the CLSQ retest within 4 to 7 days. Therefore, the scales' test-retest reliabilities were calculated across the entire test-retest interval, which spanned between 4 and 91 days, and

follow-up exploratory analyses tested whether the duration of the test-retest period moderated the relationship between CLSQ scale scores at time 1 and time 2.

Hypothesis 3: Correlations of CLSQ Scales

Bivariate correlations were computed for the ten CLSQ domain scales. The overall Romantic Relationship and Employment scores were used in correlational analyses.

Hypothesis 4: Confirmatory Factor Analysis with Two-Factor Solution

CFA was conducted with the ten CLSQ domain scales (including the overall Romantic Relationship and Employment scores) using maximum likelihood estimation. The proposed two-factor solution included loading of the Close Friendship, Social Life, Romantic Relationship, and Family Relationships scales on an Interpersonal Chronic Stress factor and loading of the Neighborhood, Academics, Employment, Finances, Health-Self, and Health-Family scales on a Non-Interpersonal Chronic Stress factor. The fit of this model was compared through a chi-square difference test to a one-factor model in which all CSLQ scales loaded on one chronic stress factor. I also examined the proposed model's pattern coefficients, communalities, and covariances between residuals.

Hypothesis 5: Criterion Validity

To assess the CLSQ's adequacy as a chronic stress exposure measure, I compared the CLSQ against the well-established LSI. I examined correlations between individual CLSQ domain scales and corresponding LSI scales, along with Interpersonal and Non-Interpersonal composites and overall CLSQ and LSI scores.

Hypotheses 6, 7, and 8: Construct Validity

To evaluate the CLSQ's construct validity, I examined correlations between the CLSQ's individual scales and Interpersonal and Non-Interpersonal composites and current depressive symptoms (Hypothesis 6).

The Employment and Romantic Relationship scales contain individual scales (Employment – Working and Not Working; Romantic Relationship – In Relationship, Dating, and Single), which are combined through a weighted mean to form the overall score for the respective domain. To test whether these subdomains are adequately comparable in their associations with depressive symptoms (e.g., whether there is a similar relationship between depression and the Employment-Working and Employment-Not Working scales, and likewise for the Romantic Relationship subdomains), multiple regression analyses predicted current depression using the effects of subdomain type (a categorical variable), subdomain stress severity score, and their interaction (Type x Severity) in a sample that exclusively endorsed one of the possible life circumstances (subdomains) within the Employment and Romantic Relationship domains. I postulated that a non-significant interaction term would provide preliminary evidence that the subdomains have similar associations with depression and therefore that any of the subdomain scores can be used when computing the respective domain score.

Additionally, the stress generation framework posits that a history of depression contributes to increased stress (Liu & Alloy, 2010), and previous work indicates that current chronic stress predicts future depression (Vrshek-Schallhorn et al., 2015). Therefore, to further evaluate the construct validity of the CLSQ, I examined correlations between lifetime depressive symptoms of greatest severity and CLSQ scales and composite scores (Hypothesis 7), and I

conducted path models predicting depressive symptoms at a three-month follow-up from CLSQ Interpersonal and Non-Interpersonal composites, controlling for current depressive symptoms and allowing current depressive symptoms and chronic stress composites to covary (Hypothesis 8). I also compared these findings to models with LSI composites as predictors. These prospective analyses were considered exploratory given the smaller sample size available for analyses.

Hypothesis 9: Discriminant Validity

Correlations between the CLSQ (individual scales and composites) and neuroticism and perceived stress were examined to determine whether the CLSQ measures constructs that are distinct from an established personality risk factor for depression (neuroticism) and an aspect of the stress response (perceived stress).

Power Analysis and Sample Size

The software package, G*Power (Version 3.1.9.7; Faul, Erdfelder, Lang, & Buchner, 2007), was used to estimate sample sizes for sufficient power in correlational analyses. Effect size predictions for planned correlational analyses ranged in magnitude. Using $r = 0.2$ as a lower estimate and a two-tailed test, a sample of 193 was required for power of 0.8. Using a large effect size estimate ($r = 0.5$), which was expected for correlations between CLSQ and LSI scores, the sample size was 29 for power of 0.8.

There are several methods available for determining the appropriate sample size for sufficient power in confirmatory factor analyses. While rules of thumb for sample size are imperfect, one approach involves comparing the number of cases (N) to the number of estimated model parameters (q) (N:q rule; Jackson, 2003), in which a minimum ratio of 20:1 is desirable (Kline, 2015). In the proposed CFA model containing two latent factors (Interpersonal and Non-

Interpersonal Chronic Stress), which are allowed to covary, with four CLSQ scales loading on the Interpersonal factor and six scales loading on the Non-Interpersonal factor, there are 21 estimated parameters (including estimates of error variance). Therefore, a minimum sample of 420 participants would be indicated for the CFA. A second method for determining appropriate sample size draws on the RMSEA indicator of model fit and involves testing an alternative hypothesis of poor fit against a null hypothesis of close fit (MacCallum, Browne, & Sugawara, 1996). Drawing on guidelines for evaluating fit based on RMSEA values (Browne & Cudeck, 1993), MacCallum and colleagues recommend the values of $H_0: \varepsilon = 0.05$ and $H_1: \varepsilon = 0.08$ as reasonable in the test of close fit. A power analysis was performed using the test of close fit with software published by Preacher and Coffman (2006) and inputting the above-indicated values of ε and 34 degrees of freedom (based on the hypothesized CFA model). For a power of 0.8, a minimum sample size of 285 was indicated for CFA.

Finally, for path analyses predicting depressive symptoms at a three-month follow-up from current depression and current chronic stress composite scores, allowing current depression and chronic stress to covary (resulting in four estimated model parameters), the N:q rule using a ratio of 20:1 indicates that a minimum sample size of 80 participants would be required for adequate power.

CHAPTER III: RESULTS

Item-Level Results, Exploratory Factor Analyses, and Item Elimination

Descriptive statistics (mean, standard deviation, range, skewness, and kurtosis), inter-item correlations within each of the 13 scales, and item-scale correlations before elimination of items are presented in Appendix B (Tables 3-28). Results of EFA for the 13 scales, including Eigenvalues, fit statistics, and factor loadings for the final models selected for the 13 scales are presented in Appendix B (Tables 29-53).

Examination of descriptive statistics, item-scale correlations, inter-item correlations, and EFA results informed item elimination decisions. Items were eliminated due to one or more factors, including poor descriptive properties (e.g., low mean, constricted range, high skew and/or kurtosis), low inter-item correlations, low item-scale correlations, or poor EFA results (e.g., low factor loading, low communality, high cross-loadings). Table 54 in Appendix B summarizes the reasons for elimination of each item (35 items in total across the 13 scales).

In total, 22 subscales were identified: Close Friendship (2 subscales: *Closeness* and *Conflict*); Social Life (2 subscales: *Participation* and *Conflict*); Romantic Relationship-In Relationship (2 subscales: *Closeness* and *Conflict*); Romantic Relationship-Dating (no subscales); Romantic Relationship-Single (2 subscales: *Options* and *Isolation*); Family Relationships (3 subscales: *Immediate Family Closeness*, *Immediate Family Conflict*, and *Broader Family Relationship Quality*); Neighborhood (2 subscales: *Home Tranquility* and *Safety*); Academics (2 subscales: *Competency* and *Preparation*); Employment-Working (2 subscales: *Demands* and *Rewards*), Employment-Not Working (no subscales); Finances (no subscales); Health-Self (3 subscales: *Chronic Medical Concerns*, *Substance Use*, and *Sleep Quality*); Health-Family (2 subscales: *Chronic Medical Concerns* and *Health Behaviors*).

In the following sections, the term *subscale* is used to refer to the 22 subscales identified by EFA, and the term *scale* is used to refer to the 13 scales within the 10 domains (e.g., Close Friendship, Romantic Relationship-In Relationship, Romantic Relationship-Single, Finances). Of note, three scales (Romantic Relationship-Dating, Employment-Not Working, and Finances) do not include subscales.

Descriptive statistics of items in the final scales (following elimination of items) are presented in Appendix B (Tables 55-67). The possible numerical responses for CLSQ items ranged from 1 to 5; responses on 103 of the 107 final items covered this range, while responses on the remaining 4 items ranged from 1 to 4. Item means ranged from 1.35 to 3.32 ($M = 2.05$, $SD = 0.50$). I expected approximately normal distributions of item scores; results indicated that 86 items had skew and kurtosis values indicative of univariate normality or small departures from normality (≥ -2 and ≤ 2), while 21 items had skew and/or kurtosis values outside this range. These included 4 items in Close Friendship, 4 in Romantic Relationship, 3 in Neighborhood, 1 in Work, 3 in Finances, 4 in Health-Self, and 2 in Health-Family scales, respectively. Of these 21 items, all distributions were leptokurtic, and 6 were positively skewed. The majority of participants endorsed exceptional circumstances on these items (indicated by a “1” on the 1 to 5 scale), with fewer participants endorsing greater chronic stress.

Strengths of inter-item correlations were largely adequate but ranged in size: 14 subscales/scales contained medium to large correlations, 9 contained small-medium to large correlations, one (*Health-Self-Chronic Medical Concerns*) contained small to large correlations, and one (*Neighborhood-Home Tranquility*) contained consistently medium correlations.

Corrected item-scale correlations are presented in Tables 55-67. Item-scale correlations were also largely adequate. The majority of subscales/scales (22) contained item-scale

correlations that were either all large or ranged from medium-large to large in size. Of the remaining subscales/scales, two (*Romantic Relationship-Single-Options* and *Health-Self-Chronic Medical Concerns*) contained small-medium to large item-scale correlations, and one (*Neighborhood-Home Tranquility*) contained medium correlations.

Scale Level Results

Hypothesis 1: Internal Consistency Reliability

Hypothesis 1 predicted that the CLSQ scales would demonstrate good internal consistency reliability. Estimates of internal consistency using Cronbach's alpha (α) and McDonald's omega (ω) are presented in Table 68 (Appendix B). Results supported Hypothesis 1 for 24 of the 25 subscales/scales. The average reliability across the 22 subscales and 3 scales using Cronbach's alpha was $\alpha = .73$ ($SD = .08$), with a range from $\alpha = .54$ (Neighborhood-Tranquility subscale) to $\alpha = .89$ (Family Relationships-Immediate Family Closeness subscale and Finances scale). Of the 25 scales/subscales, 24 had alpha values greater than $\alpha = .60$, above which internal consistency for a measure in development is considered acceptable (Nunnally, 1978), and reliability estimates for 17 of the 25 scales/subscales ranged from $\alpha = .70$ to $.89$.

Internal consistency calculated using McDonald's omega were similar to alpha ($M = .75$, $SD = .08$), with a range from $\omega = .55$ (Neighborhood-Tranquility subscale) to $\omega = .89$ (Family Relationships-Immediate Family Closeness subscale and Finances scale). Across the 25 scales/subscales, 24 had omega values greater than $\omega = .65$, 20 of which had values ranging from $\omega = .70$ to $.89$.

Overall, the Neighborhood-Tranquility, Romantic Relationship-Single-Options, and Romantic Relationship-Dating scales/subscales had the lowest reliability estimates ($\alpha = .54$, $.62$, and $.64$, and $\omega = .55$, $.66$, $.68$, respectively), while the Family Relationships-Immediate Family

Closeness, Finances, Romantic Relationship-In Relationship-Closeness, and Close Friendship-Closeness scales/subscales had the highest estimates ($\alpha = .89, .89, .86,$ and $.86,$ and $\omega = .89, .89, .87, .86,$ respectively).

Taken together, the internal consistency reliability of the CLSQ subscales and scales (with the exception of Neighborhood-Tranquility) ranged from acceptable to very good.

Hypothesis 2: Temporal Stability

Hypothesis 2 predicted that the CLSQ scales would demonstrate good temporal stability through high test-retest reliability. The participants included in analyses ($N = 139$) completed the CLSQ a second time after an average of 14 days ($SD = 16$ days), with a range of 4 to 91 days. Test-retest reliabilities were calculated across the 4- to 91-day test-retest interval, and follow-up exploratory analyses evaluated whether time between administrations moderated the relationship between CLSQ scale scores at time 1 and time 2.

Intraclass correlation coefficients (ICC) are presented in Table 68. Results supported Hypothesis 2 for 12 of the 13 scales and 21 of the 22 subscales. Across the 22 subscales, the average ICC was $.75$ ($SD = .10$) with a range from $.49$ (Social Life-Conflict) to $.91$ (Romantic Relationship-In Relationship-Closeness). The average ICC across the 13 scales was $.76$ ($SD = .09$) with a range from $.53$ (Social Life) to $.84$ (Finances and Health-Self). The lower ICC for Social Life appeared driven by the lower ICC of the Social Life-Conflict subscale. The ICC for the overall Romantic Relationship domain (composed of the weighted average of the In Relationship, Dating, and Single scales) was $.87$, and the ICC for the overall Employment domain (the weighted average of the Working and Not Working scales) was $.79$.

Given the extent of variability of the test-retest time interval (4 to 91 days), exploratory regression analyses using the test-retest interval as a moderator were conducted to determine

whether the temporal stability of the 13 CLSQ scales depended on the length of time between CLSQ administrations. Following the protocol described by Kemp, Gross, and Kwapil (2020), hierarchical regression models predicted CLSQ scale score at time 2 by the respective CLSQ scale score at time 1 (mean-centered; Step 1), test-retest interval (mean-centered; Step 2), and the interaction of CLSQ score and test-retest interval (composed of the respective mean-centered variables; Step 3).

Results indicated that for 11 of the 13 scales, the amount of time that passed did not significantly moderate the relationship between CLSQ scores on the first and second administrations ($N = 25 - 139$; $p = .064 - .840$). By contrast, significant interaction effects emerged for the test-retest interval and Romantic Relationship-In Relationship ($N = 55$; $b = -0.015$, $p = .001$) and Neighborhood scales ($N = 139$; $b = -0.008$, $p = .044$). The values for R square change (Romantic Relationship-In Relationship: $.056$; Neighborhood: $.011$) and Cohen's f^2 (a measure of effect size; Romantic Relationship-In Relationship: 0.059 ; Neighborhood: 0.011) associated with each model's interaction term were small. For the Romantic Relationship-In Relationship scale, examination of simple slopes for the Time 1 CLSQ score at one standard deviation above and below the mean of the test-retest interval indicated that the Time 1 CLSQ score significantly predicted the Time 2 score at both time intervals, though the effect was relatively weaker when the interval was longer (At -1 SD: $b = 1.043$, $p < .001$; At +1 SD: $b = 0.563$, $p < .001$). A similar pattern of results emerged for the Neighborhood scale (At -1 SD time interval: $b = 0.927$, $p < .001$; At +1 SD time interval: $b = 0.671$, $p < .001$). Overall, results indicate that the addition of the interaction terms did not appreciably improve either model, and that while the length of the test-retest interval influenced the strength of association between the Time 1 and Time 2 CLSQ scores in the Romantic Relationship-In Relationship and

Neighborhood scales, the respective Time 1 CLSQ scores remained significant predictors even as the time interval increased.

Taken together, the CLSQ scales and subscales (with the exception of Social Life and Social Life-Conflict) demonstrated adequate to excellent temporal stability over the average two-week test-retest interval.

Hypothesis 3: Correlations of Domain Scales

Hypothesis 3 predicted that the ten CLSQ domain scales would correlate significantly with each other with small to medium correlations. Bivariate correlations are presented in Table 69 (Appendix B). Results supported this hypothesis for 40 of the 45 possible correlations. Of the 45 correlations ($N = 709 - 785$), 38 were significant at the $p < .01$ level and two were significant at the $p < .05$ level (Employment with Close Friendship and Romantic Relationship domains, respectively). As predicted, the 40 significant correlations ranged from small to medium in size, with the smallest between the Employment and Close Friendship and Employment and Romantic Relationship domains ($r = .09$) and the largest between the Close Friendship and Social Life domains ($r = .35$). Of the five remaining correlations that were not significant, four were found between the Romantic Relationship domain and non-interpersonal domains of Neighborhood, Finances, Health-Self, and Health-Family ($r = .01 - .06$), and one was found between Close Friendship and Health-Self ($r = .01$).

Overall, results indicate that the large majority of scales correlated with each other as expected, with the Romantic Relationship domain containing fewer significant associations than anticipated.

Hypothesis 4: Confirmatory Factor Analysis

Hypothesis 4 predicted that confirmatory factor analysis (CFA) of the CLSQ using the ten domain scale scores would yield an acceptable two-factor solution representing Interpersonal and Non-Interpersonal composites. Figures 2 and 3 (Appendix C) depict a one- and two-factor model, in which the ten scales load onto one latent factor of Chronic Stress and two latent factors of Interpersonal and Non-Interpersonal Chronic Stress, respectively.

Table 70 (Appendix B) presents fit statistics for CFA models. Results partially supported Hypothesis 4. The model chi-square tests for exact fit were significant in each model (One-Factor: $\chi^2_M = 191.961, p = .0000$; Two-Factor: $\chi^2_M = 158.816, p = .0000$), suggesting fit was imperfect in both. Of note, chi-square tests for exact fit are often significant when sample size is large; therefore, the present findings are not unexpected (Babyak & Green, 2010). The RMSEA and SRMR, two indicators of close fit, were acceptable in both models (One-Factor: RMSEA = .075; SRMR = .052; Two-Factor: RMSEA = .068; SRMR = .047). Conversely the values for CFI and TLI (incremental fit indices) in both one- and two-factor models (One-Factor: CFI = .837; TLI = .791; Two-Factor: CFI = .871; TLI = .829), fell below the cutoff for acceptability (.95), indicating the two models did not provide improved fit compared to the baseline model. Overall, evidence for the fit of both the one- and two-factor solutions was mixed; however, the fit statistics for the two-factor model were descriptively stronger, and the chi square difference test ($\chi^2_{diff} = 33.145; df = 1$) was significant ($p < .05$), indicating the fit of the two-factor model was significantly improved compared to the one-factor model.

In the two-factor model, all pattern coefficients were significant ($p < .001$). However, the factors explained less than 50% of the variance across all indicators, with communalities ranging from $R^2 = .072$ (Romantic Relationship) to $R^2 = .412$ (Family Relationships). Additionally, the

Interpersonal and Non-Interpersonal latent factors were highly correlated ($r = .773, p < .001$). Examination of covariances between standardized residuals indicated that the magnitudes of 20 covariances exceeded $z = |1.96|$, suggesting multiple areas of local misfit. Scrutiny of these patterns, along with the modification indices returned for the two-factor model, suggested that the two-factor model underpredicted the relationship between Family Relationships and the Non-Interpersonal Chronic Stress factor, while it also underpredicted the relationship between Academics and the Interpersonal Chronic Stress factor. Further, the pattern of bivariate correlations presented in Table 69 indicates that both the Family Relationships and Academic scales have significant correlations with all other scales and that the correlation magnitudes are similar across scales (Family Relationships: $r = .24 - .34$, with the exception of $.16$ with Romantic Relationship; Academic: $r = .17 - .31$, with the exception of $.11$ with Health-Family). Overall, these results suggest that the Family Relationships and Academic scales may not demonstrate strong discriminant validity for the Interpersonal and Non-Interpersonal factors, respectively.

Given these findings, exploratory analyses examined a two-factor model allowing the Family Relationships and Academic scales to load onto both Interpersonal and Non-Interpersonal factors. This model (Figure 4, Appendix C) produced a significantly improved fit compared to the original two-factor model without cross-loadings ($\chi^2_{\text{diff}} = 60.967; df = 2$). Model fit statistics were stronger than the original two-factor model (Table 70): RMSEA = $.051$; SRMR = $.035$; CFI = $.932$; TLI = $.904$. All pattern coefficients remained significant ($p < .001$), though the factors continued to explain less than 50% of the variance of all indicators: communalities ranged from $R^2 = .10$ (Romantic Relationship) to $R^2 = .48$ (Social Life). The Interpersonal and Non-Interpersonal latent factors remained correlated ($r = .498, p < .001$), though less so

compared to the original two-factor model. Finally, the extent of local misfit was substantially reduced, with 9 covariances between standardized residuals exceeding $z = |1.96|$ compared to 20 in the original model. Given these findings, subsequent validity analyses were conducted using the Interpersonal and Non-Interpersonal composite scores from the a priori two-factor model, along with the Interpersonal and Non-Interpersonal composites incorporating the Family Relationships and Academic scale scores in both composites as exploratory analyses.

Taken together, CFA results were mixed regarding the fit of the originally proposed two-factor model, while fit was markedly improved in the alternative two-factor model. However, the communalities within each two-factor model were low, indicating that the proportion of each indicator's variance explained by the latent interpersonal and non-interpersonal chronic stress factors was low. Therefore, while it is customary to compute interpersonal and non-interpersonal composite scores with the UCLA LSI, empirical evidence from factor analyses in the present study does not provide strong support for use of analogous composites with the CLSQ using a reflective measurement model. Nonetheless, composite scores are included in validity analyses in the following sections based on a priori predictions about the relationships of composite scores with corresponding composites in the LSI as well as with additional constructs.

Hypothesis 5: Criterion Validity with UCLA Life Stress Interview

Hypothesis 5 predicted that the CLSQ would demonstrate criterion validity through significant, large correlations with the respective scales and composites of the UCLA LSI. Mean scores on the LSI scales ($N = 93$; Table 71; rated on 1 to 5 scale) ranged from 2.00 - 2.48 ($SD = 0.53 - 0.89$). Interrater reliability of the LSI scales was calculated for 15% of the sample (14 interviews); these interviews were rerated by raters who were blind to the original chronic stress

ratings. Intraclass correlation coefficients for the ten scales ranged from .49 (Family Relationships) to Employment (.91), with a mean ICC of .71.

Correlations between the CLSQ and LSI are presented in Table 71 (Appendix B). Results supported Hypothesis 5. All correlations ($N = 91 - 93$) were large and significant ($p < .001$), with a mean of $r = .56$ ($SD = .10$). Correlations between individual CLSQ and LSI scales ranged from $r = .45$ (Health-Self and Neighborhood scales) to $r = .76$ (Family Relationships). At the composite level, the CLSQ and LSI Interpersonal and Non-Interpersonal composites were strongly correlated (both $r = .73$; $p < .001$), as were the total CLSQ and LSI composites ($r = .80$; $p < .001$). Results indicate that the CLSQ scales and composite scores demonstrated sound criterion validity through strong associations with the corresponding scales and composites of the LSI.

Hypothesis 6: Construct Validity with Current Depressive Symptoms

Hypothesis 6 predicted that the CLSQ's individual scale scores and the Interpersonal and Non-Interpersonal composite scores would provide evidence of construct validity through significant, medium to medium-large bivariate correlations with current depressive symptoms, measured by the Diagnostic Inventory for Depression (DID). The internal consistency for the DID was very good ($\alpha = .89$). The mean DID score in the sample ($N = 784$), computed as an item mean and allowing up to 3 items (20%) missing, was 0.81 ($SD = 0.59$; Range = 0.00 - 3.06 on scale with a potential maximum of 4).

Correlations are presented in Table 72 (Appendix B). Results supported Hypothesis 6 for the majority of CLSQ scales. The associations between individual CLSQ scale scores and current depressive symptoms ($N = 737 - 784$) were all significant ($p < .001$), ranging from $r = .17$ (Romantic Relationship) to $r = .46$ (Family Relationships) with a mean correlation of $r = .29$ (SD

= .09). As expected, the Social Life, Family Relationships, Academic, Finances, Health-Self, and Health-Family scales showed medium to medium-large correlations with depression ($r = .27 - .46$), while the Close Friendship, Romantic Relationship, Neighborhood, and Work scales were associated with depression at magnitudes slightly lower than expected ($r = .17 - .25$).¹

As anticipated, correlations between the two CLSQ composites and current depressive symptoms were significant, though slightly larger than anticipated (Interpersonal composite: $r = .46$; Non-Interpersonal composite: $r = .49$; $p < .001$). Correlations between depressive symptoms and the two alternative CLSQ composites—including scores from Family Relationships and Academic scores in each composite—were also large (Interpersonal: $r = .51$; Non-Interpersonal: $r = .54$; $p < .001$).

Regression analyses comparing associations between depressive symptoms and individual scales within the Employment and Romantic Relationship domains are presented in Table 73 (Appendix B). In the Employment domain, 177 participants endorsed being employed and 243 endorsed not working for the duration of the prior 6-month period. The Type x Severity interaction was significant ($b = -0.216$, $SE(b) = 0.080$, $t = -2.684$, $p < .008$), indicating that the relationship between employment stress and current depressive symptoms depended on the subdomain of employment. As represented in Figure 5 (Appendix C), though depressive symptoms increased with employment stress for all participants, symptoms increased more steeply with greater stress among those who were employed over the entire 6 months compared to those who were not working.

¹ Given that both the Health-Self and DID scales included questions about sleep, scores on these questions were omitted in correlational analyses with depressive symptoms, including at the individual scale and composite levels. (Correlations with the sleep items included ($r = .43$ for the Health-Self scale and $r = .53$ for the Non-Interpersonal composite) were inflated by the overlapping content.)

In the Romantic Relationship domain, 212 participants endorsed exclusively being in a relationship, 259 endorsed being single, and 3 endorsed dating over the full 6-month period. Given the small number of participants who were exclusively dating, this subsample was excluded from regression. Similar to results for the Employment domain, the Type x Severity interaction ($b = 0.254$, $SE(b) = 0.096$, $t = 2.640$, $p < .009$) indicated that the relationship between romantic relationship stress and current depressive symptoms was significantly moderated by the relationship subdomain. Although all participants reported increased depression with greater relationship stress, those who were in a committed relationship reported relatively more depression with increasing stress compared to those who were single (Figure 6, Appendix C).

Hypothesis 6 predicted that current depression would be associated with chronic stress with medium to medium-large bivariate correlations, but the analyses including the overall Employment and Romantic Relationship domain scores revealed smaller associations with depression than predicted (Employment: $r = .22$, Romantic Relationship: $r = .17$). Given the results from regression analyses, I examined the correlations between current depressive symptoms and chronic stress separately for the Employment-Working and Employment-Not Working and Romantic Relationship-In Relationship and Romantic Relationship-Single scales in the sample exclusively endorsing one of the life circumstances within either or both domains. Current depressive symptoms correlated significantly with individual scales within the Employment and Romantic Relationship domains (Working: $r = .35$, $p < .001$; Not Working: $r = .20$, $p = .002$; In Relationship: $r = .36$, Single: $r = .34$; both $p < .001$). With the exception of the Employment-Not Working scale, these associations were medium in size, as originally predicted. However, these findings should be compared cautiously with those in the overall sample, as this subsample endorsed one life circumstance within the Employment and/or Romantic Relationship

domains, whereas many participants in the overall sample endorsed multiple life circumstances over the 6-month period.

Taken together, results provide support for the construct validity of the majority of CLSQ scales and composites through significant associations with current depressive symptoms, with associations mostly falling into the medium to medium-large range. The smallest correlations emerged between depressive symptoms and chronic stress in the Romantic Relationship ($r = .17$) and Employment ($r = .22$) domains, and exploratory analyses indicated that computing a weighted mean with the scales composing these domains may obscure different magnitudes of association between depression and the individual chronic stress scales. Although further research is required for replicability—including a parallel analysis with corresponding LSI domains, which has not yet been conducted—findings suggest that scores for component scales within the CLSQ's Romantic Relationship and Employment scales should be reported separately rather than pooled.

Hypothesis 7: Construct Validity with Most Severe Lifetime Depressive Symptoms

Hypothesis 7 predicted that the CLSQ scale scores and Interpersonal and Non-Interpersonal composites would also demonstrate construct validity through significant, medium correlations with depressive symptoms occurring during the most severe week of lifetime symptomatology measured by the DID. The DID assessing lifetime symptomatology (DID-lifetime) was administered to participants in one of the four samples ($N = 93$). The internal consistency was very good ($\alpha = .91$). The average score on the DID-lifetime item mean was 1.45 ($SD = 0.82$; Range = 0.00 - 3.06 on scale with a potential maximum of 4).

Results partially supported Hypothesis 7. Correlations between DID-lifetime score and CLSQ individual scale scores (Table 72; $N = 91 - 93$) ranged from $r = .08$ (Social Life) to $r = .44$

(Family Relationships), with a mean correlation of $r = .25$ ($SD = .11$). As anticipated, the Family Relationships, Neighborhood, Work, Finances, Health-Self, and Health-Family scales correlated significantly with DID-lifetime score ($p < .001 - .02$), with values falling largely within the medium range ($r = .24 - .44$). Conversely, the correlation between the DID-lifetime and Academic scale approached but did not reach significance ($r = .19, p = .07$). Unexpectedly, correlations with the DID-lifetime and Close Friendship, Social Life, and Romantic Relationship scales were not significant ($r = .08 - .16, p = .12 - .44$).

At the composite level, the Interpersonal composite was associated through a medium, significant correlation with DID-lifetime as predicted ($r = .31, p = .003$). The Non-Interpersonal composite showed a descriptively stronger correlation with DID-lifetime ($r = .46, p < .001$). The Interpersonal and Non-Interpersonal CLSQ incorporating the Family Relationships and Academic scales in both composites showed a similar pattern of results (Interpersonal: $r = .31, p = .002$; Non-Interpersonal: $r = .48, p < .001$).

In sum, results indicated that the majority of CLSQ scales and the composites demonstrated construct validity through significant, mostly medium-sized associations with most severe lifetime depressive symptoms. Conversely, four scales—the Close Friendship, Social Life, Romantic Relationship, and Academic scales—did not associate significantly with lifetime depressive symptoms of greatest severity.

Hypothesis 8: Construct Validity with Prospective Depressive Symptoms

Hypothesis 8 postulated that the Interpersonal and Non-Interpersonal CLSQ composite scores, as well as the respective LSI composite scores, would predict depressive symptoms at a three-month follow-up, controlling for current depressive symptoms. Participants ($N = 74$) completed the follow-up depression questionnaire on average 105 days (or approximately 3.5

months) after the initial study session ($SD = 26$ days, Range: 84 - 254 days). Internal consistency of the DID at follow-up was very good ($\alpha = .89$). The mean score on the DID was 0.65 ($SD = 0.53$, Range = 0.00 - 2.65 on scale with a potential maximum of 4).

Path analyses modeled relationships between the chronic stress variable (Interpersonal and Non-Interpersonal composites on the CLSQ and LSI, including the alternative CLSQ composites with Family Relationships and Academic scales incorporated in both composites), current depressive symptoms, and depressive symptoms at follow-up (Figure 7, A-F, Appendix C). For models including Non-Interpersonal CLSQ scales, questions about sleep were excluded on both the CLSQ composite and depressive symptom measures given the content overlap and potential for inflated associations.

Results supported Hypothesis 8, with the exception of one LSI composite. In all six models, depressive symptoms at the initial study session were significantly and positively associated with depressive symptoms at follow-up when controlling for each chronic stress variable ($\gamma = .385 - .512$, $p < .01$). In each of the four models with a CLSQ composite, the composite significantly and positively predicted depression at follow up when controlling for current depressive symptoms (Interpersonal: $\gamma = .263$; Non-Interpersonal: $\gamma = .304$; Interpersonal including Academic scale: $\gamma = .243$; Non-Interpersonal including Family Relationships scale: $\gamma = .302$; all $p < .05$).

To compare findings between the LSI and CLSQ in predicting prospective depressive symptoms, the LSI composites were also included in path analyses. In the two models with an LSI composite, the LSI Non-Interpersonal composite significantly predicted depression at follow-up ($\gamma = .221$, $p < .05$); contrary to expectations, the effect of the LSI Interpersonal composite was not significant ($\gamma = .102$, $p = .314$).

Taken together, the significant prediction of future depressive symptoms by the CLSQ composites provides further support for the CLSQ's construct validity. Findings for the LSI were mixed: While the Non-Interpersonal composite predicted depression as anticipated, the Interpersonal composite did not. Overall, the present findings should be interpreted cautiously given the small analytic sample size.

Hypothesis 9: Discriminant Validity with Neuroticism and Perceived Stress

Hypothesis 9 predicted that the individual CLSQ scales and Interpersonal and Non-Interpersonal composites would demonstrate discriminant validity with perceived stress (measured with the Perceived Stress Scale, PSS) and with trait neuroticism (using the 10-item International Personality Item Pool version of the Revised NEO Personality Inventory's neuroticism domain, IPIP NEO-PI-R) through significant but medium correlations, in contrast to the larger CLSQ-LSI correlations.

Internal consistencies for the PSS ($\alpha = .84$) and the IPIP NEO-PI-R ($\alpha = .86$) were very good.² The mean score for perceived stress item means ($N = 783$) was 1.92 ($SD = 0.59$, Range = 0.29 - 3.86 on scale with a potential maximum of 4), and the average of the item means for neuroticism ($N = 782$) was 2.77 ($SD = 0.87$, Range = 1.00 - 4.80 on a 1 - 5 scale). The correlation between perceived stress and trait neuroticism was large ($r = .72$, $p < .001$).

Results largely supported Hypothesis 9. Correlations are presented in Table 72. All correlations between individual CLSQ scales and the PSS and IPIP NEO-PI-R scales were significant ($p < .001$) and respective associations between each CLSQ scale and the PSS and

² Of note, one PSS item ("In the last month, how often have you dealt successfully with irritating life hassles?") displayed a weakly negative item-scale correlation (-.11) after reverse-scoring. Further inspection indicated this finding was not due to errors in data cleaning, and this item also positively correlated with a similar, reverse-scored PSS item ("In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?"; $r = .31$, $p < .001$).

IPIP NEO-PI-R scales were similar in magnitude. Associations between CLSQ scores and perceived stress ranged from $r = .20$ (Neighborhood) to $r = .43$ (Academic), and those between CLSQ scores and neuroticism ranged from $r = .19$ (Health-Family) to $r = .45$ (Family Relationships). Average correlations were medium in magnitude (CLSQ scales with PSS: $r = .29$, $SD = .09$; CLSQ scales with IPIP NEO-PI-R: $r = .28$, $SD = .08$). Correlations were similar in magnitude to those between the CLSQ scales and current depressive symptoms; this is unsurprising given the large correlations between depressive symptoms and both perceived stress and neuroticism (PSS: $r = .71$, IPIP NEO-PI-R: $r = .67$; both $p < .001$). Similar to the patterns of associations with depression, the Social Life, Family Relationships, Academic, Finances (the latter with PSS only), and Health-Self scales correlated most strongly with perceived stress and neuroticism (with the majority at medium magnitudes), while the Close Friendship, Romantic Relationship, Neighborhood, and Work scale correlations were slightly lower than anticipated. Different from its association with depressive symptoms, the Health-Family scale was also less strongly associated with neuroticism and perceived stress than predicted ($r = .19$ and $.22$, respectively). The Family Relationships scale demonstrated slightly higher than anticipated correlations with perceived stress and neuroticism ($r = .42$ and $.45$, respectively) and the Academic scale was also more highly correlated with perceived stress than expected ($r = .43$).

Correlations between the Interpersonal composite and the PSS ($r = .44$, $p < .001$) and the IPIP NEO-PI-R ($r = .48$, $p < .001$) were significant and slightly larger than expected—though were similar in magnitude to the association between the Interpersonal composite and current depression—as were the correlations with the Non-Interpersonal composite (PSS: $r = .48$; IPIP NEO-PI-R: $r = .44$; both $p < .001$). Finally, correlations between perceived stress, neuroticism, and the CLSQ composites that included scores from the Family Relationships and Academic

scales in both composites were also large (for the Interpersonal composite with PSS, $r = .51$, and with IPIP NEO-PI-R, $r = .50$; for the Non-Interpersonal composite with PSS, $r = .52$, and with IPIP NEO-PI-R, $r = .49$; all $p < .001$).

Overall, the majority of CLSQ scales demonstrated adequate discriminant validity through significant but medium associations—and in some cases smaller associations than predicted—with perceived stress and neuroticism. Exceptions included the Family Relationships and Academic scales, which showed larger associations with perceived stress and neuroticism than anticipated. Finally, while the CLSQ composites were correlated with neuroticism and perceived stress at greater magnitudes than predicted, these correlations were substantially lower compared to the associations of the CLSQ composites with the respective LSI composites. The relative differences in these associations provides evidence for the discriminant validity of the CLSQ composites.

CHAPTER IV: DISCUSSION

Chronic stress contributes to a range of physical and mental health conditions; however, definitions of chronic stress vary substantially, and there are no well-validated questionnaire measures of chronic stress exposure. The resulting limitations on research are particularly evident in the large body of literature establishing stress as critical in the etiology of depression. Over the past 90 years, research has thoroughly demonstrated the importance of adverse life events in pathways to depression and investigated various aspects of these pathways (Vrshek-Schallhorn et al., 2019). Many studies incorporate robust life stress interviews to ascertain assessment of life events rather than the person's reactions to events, which is critical for distinguishing the role of events themselves in depression onset from other depressive risk factors symptoms (Harkness & Monroe, 2016).

By contrast, the literature characterizing pathways from chronic stress to depression most often includes self-report measures that assess chronic stress in a single life domain, which may restrict the measurement range for chronic stress and artificially reduce effect sizes (Mazure, 1998). Further, although many single-domain measures have been described as measures of chronic stress, a review of instruments suggests this may not be the case, and many instruments do not differentiate stress exposure from response.

Life stress interviews, such as the UCLA LSI (Hammen et al., 1987) and LEDS (Brown & Harris, 1978), allow for comprehensive assessment of chronic and acute stress *exposure* across multiple life domains; however, these tools require substantial expertise and investments of time and personnel. In the age of “big data,” researchers increasingly require measurement instruments that are both psychometrically valid and resource-efficient. At present, there are only

several questionnaires available that assess chronic stress more globally than single-domain measures, and these measures are limited in the extent to which they assess stress exposure. Therefore, this study aimed to develop and evaluate a theoretically-informed, comprehensive self-report measure of chronic stress exposure for use in research investigating the roles of chronic stress in mental and physical health.

Strengths of the Chronic Life Stress Questionnaire

Scale Development

The development process for the CLSQ scales followed recommended practices to ensure content validity, including definition of constructs assessed, development of a large pool of items, and review of construct definitions, item content, and response options by expert and non-expert reviewers (Boateng et al., 2018; DeVellis, 2017). Although there is a dearth of well-validated questionnaire measures of chronic stress exposure, life stress interview methods were developed specifically to evaluate stress exposure. The UCLA LSI comprehensively assesses exposure to chronic stress in ten life domains and is based on theoretical definitions of chronic stress as “role” and “ambient”/non-role strains (e.g., Pearlin et al., 1981; Pearlin, 1983, 1989). Therefore, the LSI served as a guide for CLSQ development. LSI items were adapted (with LSI developer Dr. Hammen’s permission) to questionnaire form and Likert-style response options were generated for these questions. Many new questions were also developed for the item pool to ensure adequate construct coverage.

Ensuring a scale’s content validity also includes developing items that are appropriate for the specific population for which the scale is intended (DeVellis, 2017). The present study’s version of the CLSQ is intended for use with young adults ages 18 to 24. Therefore, items and

response options were developed to address the chronic strains present for people in this developmental stage.

Finally, the CLSQ item pool underwent multiple stages of revisions based on feedback by reviewers. A reviewer with expert knowledge of the LSI and the field of stress and depression provided multiple rounds of revisions, and two additional expert reviewers—another researcher with expert knowledge in stress and depression with extensive knowledge of the LSI and a researcher with expert knowledge in scale development—provided feedback on two separate drafts. Three additional reviewers with substantial experience administering and scoring the LSI and a non-expert reviewer all also provided feedback on a draft of the questionnaire.

Sample Characteristics

The present study involved data collection in a large and diverse sample of young adults ages 18 to 24 to increase power and generalizability of findings. To this end, data were collected from participants at three different academic institutions, including a public university (University of North Carolina at Greensboro), a community college (Guilford Technical Community College), and a private university (University of Rochester) in two geographic regions in the United States. Participants were diverse in terms of racial/ethnic identity, socioeconomic status, and nativity status. Of note, females represented the most frequent gender identity across samples, and all participants were enrolled in college courses; the importance of increasing dimensions of diversity in terms of gender identity and academic enrollment status of future samples will be discussed in the following sections. Though the COVID-19 pandemic presented challenges to data collection, the sample size exceeded the a priori size indicated for adequately powered analyses.

Psychometric Properties

Hypotheses 1 and 2: Internal Consistency and Test-Retest Reliability

Results largely supported Hypotheses 1 and 2 regarding internal consistency and test-retest reliabilities of the CLSQ. Internal consistency estimates ranged from acceptable to very good, with the exception of the Neighborhood-Tranquility subscale. Test-retest reliability estimates ranged from adequate to excellent over the average two-week interval (but that varied from 4 to 91 days), with the exception of the Social Life-Conflict subscale and overall Social Life scale. Exploratory analyses indicated that the associations between CLSQ scores at time 1 and time 2 were not dependent on the duration of the test-retest interval for 11 of 13 scales. For the remaining two scales (Romantic Relationship-In Relationship and Neighborhood scales), while the strength of the relationship decreased as interval duration increased, the respective CLSQ scores at time 1 remained significant predictors across the full interval period. Though replication is needed given the size of the sample completing the test-retest study ($N = 139$ overall, but ranging from 25 to 139 based on the specific scale), the CLSQ scales appear to capture a stable phenomenon, as is expected for a measure of chronic stress.

Hypothesis 3: Correlations of CLSQ Scales

As expected based on the phenomenon of stress spillover or contagion (Bolger et al., 1989), in which stress in one domain contributes to stress in other domains, the majority of CLSQ scales were significantly associated with each other through small to medium correlations.

Results may shed also shed further light on stress spillover within the young adult period. In particular, Family Relationship stress showed the strongest and most consistent pattern of associations across all interpersonal and non-interpersonal areas. This finding supports that family relationships are important and influential in the lives of young adults, even while

developmental tasks of this phase emphasize individuation and identity exploration (Arnett, 2000; Tsai et al., 2013). Of this transitional developmental period, Neighbors, Forehand, and Bau (1997, p. 171) write:

[...] many developmental theorists believe that achieving individuation is facilitated by the presence of a close attachment to parents (Allison & Sabatelli, 1988; Bowlby, 1982; Carter & McGoldrick, 1989). That is, both individuation and connectedness are viewed as important to the adaptive functioning of individuals during this developmental stage (Grotevant & Cooper, 1986).

Family relationships are central to the socialization of youth and provide opportunities to learn social, problem-solving, and self-regulatory skills required for adaptive functioning in relationships and contexts such as school (Bush & Peterson, 2013; Martinez-Pons, 2002; Peterson & Hann, 1999). Further, though the nature of the parent-child relationship shifts, research indicates that sense of family identity strengthens during young adulthood after declining in adolescence (Tsai et al., 2013), and parents continue to provide their young adult children with emotional and instrumental support (Vassallo et al., 2009). Indeed, a majority of adults ages 18 to 24 live with their parent(s), and this number increased during the COVID-19 pandemic from 63% in February 2020 to 71% in July 2020 (Fry et al., 2020). This context is particularly relevant when considering the present findings, as 86% of participants completed the study during the pandemic period.

While causation cannot be determined in this study, results may suggest a potential for strain in family relationships to spill over into multiple areas of young adults' lives. For example, stress may be generated in young adults' friendships and romantic relationships through transmission of weaker social skills from parent to child (Burke et al., 2013; Engels et al., 2001),

and/or through reduction of one's attentional and emotional resources in the context of ongoing family stress. Further, family strain may indicate less social support from parents, which has been linked with poorer academic performance (Cutrona et al., 1994) and health (Miczo et al., 2006) in undergraduates. The pandemic context may have amplified the effects of family strain as boundaries between various aspects of life were blurred, particularly as many people worked and studied at home.

Contrary to predictions, chronic Romantic Relationship stress was not associated with stress within Neighborhood, Financial, Health of Self, or Health of Family domains. This finding may reflect that compared to people in middle and older adulthood, romantic relationships represent a more circumscribed aspect of life for emerging adults, most of whom do not reside with their partner and share finances and other responsibilities.

Hypothesis 4: Confirmatory Factor Analysis

It is conventional to create composite scores from the UCLA Life Stress Interview scales representing Interpersonal and Non-Interpersonal chronic stress (Hammen, 2002; Vrshek-Schallhorn et al., 2015), although empirical investigation of this approach is warranted as no published factor analytic studies could be located. Given that the LSI played an important role in the development of the CLSQ, confirmatory factor analyses tested the hypothesis that the CLSQ contained two latent factors of Interpersonal and Non-Interpersonal chronic stress. Results partially supported the proposed two-factor solution, as evidenced by a significantly improved fit over the unidimensional model and favorable values for some model fit indices. However, patterns of local misfit indicated that this model underpredicted the relationships between the Academics scale and Interpersonal factor and between the Family Relationships scale and Non-

Interpersonal factor, respectively. The two-factor model allowing cross-loading of the Family Relationships and Academics scales on both factors produced significantly improved fit.

While unexpected, the loading of chronic stress in Family Relationships onto both factors further supports that family stress may be critical in mechanisms of stress spillover during young adulthood. Additionally, the cross loading of the Academics scale onto both factors may also provide evidence of this domain's importance for young adults. Indeed, in the development of the College Chronic Life Stress Survey (CCLSS, Towbes & Cohen, 1996), the most frequent sources of stress indicated by undergraduates were largely related to academic performance and academic demands. In a large study of Finnish adults ages 20 and 23, the most frequent goals identified were related to education and work, with goals in romantic relationships and other relationships reported less frequently (Ranta et al., 2014). For young adults pursuing postsecondary education goals, such as the participants in the present study, engagement in an academic program may represent a central social role, one that is closely tied with the developmental task of identity exploration during emerging adulthood (Arnett, 2000). Although identity exploration in the context of social relationships—particularly romantic relationships—is also important during this period, young adults tend to prioritize educational and employment pursuits ahead of serious romantic relationships (Mayselless & Keren, 2014). Few studies have investigated the phenomenon of stress spillover in young adults with regard to academic stress, but recent findings suggest the capacity for academic stress to exert negative influences on college students' interpersonal relationships, other tasks and work, and health behaviors (Pedersen & Jodin, 2016).

Overall, findings related to Hypotheses 3 and 4 contribute preliminary evidence that academic and family stress may be critical contributors to overall levels of chronic stress in

young adults, and stress in these areas may be implicated in mechanisms of stress spillover into multiple life domains.

Hypothesis 5: Criterion Validity with UCLA Life Stress Interview

Results supported that the CLSQ scales and composites were strongly related to corresponding LSI scales and composites, providing initial evidence of the CLSQ's validity using the LSI as a criterion of chronic stress exposure.

Hypothesis 6: Construct Validity with Current Depressive Symptoms

The significant and mostly medium to medium-large correlations—indicating association but not complete construct overlap—between CLSQ scales and current depressive symptoms provides initial support for the CLSQ's construct validity. Although correlations between the CLSQ Interpersonal and Non-Interpersonal composites and current depressive symptoms were slightly larger than expected, these associations were substantially smaller than correlations between the CLSQ composites and corresponding LSI chronic stress composites.

Regression analyses examining chronic stress severity, life circumstance (In a Relationship vs. Single; Working vs. Not Working), and their interaction as predictors of depressive symptoms within the Employment and Romantic Relationship domains revealed unanticipated but informative findings. The Romantic Relationship and Employment domains are unique in their scoring. In line with the LSI scoring approach, the CLSQ combines component scales representing different life circumstances (i.e., In a Relationship, Dating, and Single; Working and Not Working) through an average weighted by the proportion of time in each circumstance over the past 6 months. I predicted that the relationship between chronic stress and depression would be similar for participants across life circumstances (i.e., those who were in a romantic relationship and those who were single over the full 6-month period; those who

were employed and those who were not working over the past 6 months). Contrary to predictions, results indicated that the strength of the chronic stress-depression relationship depended on certain life circumstances. While chronic stress and depressive symptoms were positively associated across all four circumstances, the slope of the association between chronic stress and depressive symptoms was more steeply positive for participants who were in a romantic relationship and for those who were employed compared to participants who were single and who were not working, respectively.

There are several possible explanations for these results. One explanation is that strain resulting from role demands during young adulthood may not be equivalent to the strain generated from role absence across all severity levels. For example, it is possible that ongoing conflict and withdrawal of support from a romantic partner may constitute greater stress exposure compared to a chronic lack of relationship options. Relatedly, in the latter case, a young adult may endorse few options for a relationship—and even endorse dissatisfaction with this situation—but may also appraise the situation as temporary or choose to prioritize other goals, which is normative in emerging adulthood (Maysless & Keren, 2014). In turn, chronic stress generated within a romantic relationship may be a stronger predictor of depressive outcomes than chronic stress due to the absence of a relationship.

Previous research is mixed regarding whether the romantic relationship role is particularly potent in depression among young adults. In one study, first-year undergraduates who were dating or in a serious relationship reported more depressive symptoms at a 6-month follow-up compared to those who were single (Davila et al., 2004). However, separate findings indicated that depressive symptoms were significantly higher in single emerging adults who were interested in a romantic relationship, but there was no difference in symptoms between people

who were in a relationship and who were single and not (or only slightly) interested in a relationship (Beckmeyer & Cromwell, 2019). A third study found no significant difference in depressive symptoms between university students who were in a relationship and those who were single (Khawaja & Duncanson, 2008).

In the Employment domain, an analogous scenario to the one postulated for the Romantic Relationship domain might apply: A job with high demands and few rewards may constitute greater stress exposure than a lack of options for employment. This may be specific to the period of young adulthood and for students enrolled in postsecondary education who may be prioritizing their studies and may receive financial support that mitigates stress associated with unemployment.

Another explanation for the present findings may relate to increased strain from participants' simultaneous engagement in multiple roles, for example the roles of student and worker. Prior evidence to support this explanation is mixed. In one study, students who were employed full-time had significantly higher depressive symptoms compared to students who were not working (although no differences were found for part time employment; Khawaja & Duncanson, 2008). Another study found no differences in depression based on undergraduate students' employment status (Mounsey et al., 2013). A third study directly assessed perceptions of conflicts between academic and work demands among employed university students (Cinamon et al., 2016); results indicated that increased role conflict (or mutual interference between the roles of student and employee) was associated with increased depressive symptoms.

Overall, comparison of current study findings to past research is limited by the use of different assessment methods, which address related but distinct questions. In particular, previous work largely assesses role presence or absence rather than stress exposure itself. The

current results extend past work by directly assessing the stressful aspects of the romantic relationship and employment roles as well as the stress associated with their absence. Findings indicate that different circumstances within a certain life domain may have unique associations with other constructs, such as depression. Further investigation is warranted to determine whether these findings are replicable in independent samples of young adults, including young adults who are not engaged in postsecondary studies. Further, a parallel analysis with the LSI, which has not been conducted, would also be useful in examining differences between component scales in the Romantic Relationship and Employment domains in the prediction of depression.

Hypothesis 7: Construct Validity with Most Severe Lifetime Depressive Symptoms

Based on the stress generation model, in which depression contributes to prospective life stress (Liu & Alloy, 2010), I hypothesized that lifetime depressive symptoms of greatest severity would be associated with increased chronic stress as reflected through CLSQ scale and composite scores. Though previous stress generation research largely focuses on life events, a longitudinal study demonstrated that diagnosis with a current depressive disorder (assessed via clinical interview) at baseline predicted increased chronic interpersonal and non-interpersonal life stress (assessed via LSI) one year later (Uliaszek et al., 2012). Current findings supported the hypothesis for the CLSQ composites and six CLSQ scales. However, correlations were not significant for the Academic, Close Friendship, Social Life, and Romantic Relationship scales. The present findings may reflect that lifetime depressive symptoms—particularly those that are subclinical—may not be uniformly significant predictors of chronic stress across domains in a non-clinical sample of young adults. However, another possible explanation is related to the transition to college, which may mark a “discontinuity” in the mechanism of stress generation.

The college transition introduces new challenges and opportunities, and findings here may reflect an attenuating relationship between past depressive symptoms and current stress in peer relationships and in school as more proximal variables gain predictive strength.

Hypothesis 8: Construct Validity with Prospective Depressive Symptoms

Findings that the CLSQ composites predicted depressive symptoms at a three-month follow-up (controlling for baseline depressive symptoms) provide additional evidence of the CLSQ's construct validity, although analyses were exploratory and findings should be considered tentative. Of note, when the LSI was included as a predictor, the Non-Interpersonal LSI composite was significant as expected, but the Interpersonal composite was not. Previous research supports that Interpersonal and Non-Interpersonal (Vrshek-Schallhorn et al., 2015), and total and Interpersonal (Sheets & Craighead, 2014), chronic stress assessed by the LSI predicts prospective depression. Present findings with the CLSQ and LSI should both be interpreted cautiously due to the relatively smaller sample available for prediction of prospective depressive symptoms.

Hypothesis 9: Discriminant Validity with Neuroticism and Perceived Stress

It is important that studies on the role of life stress in depression incorporate measures of stress that capture the particular construct of interest and do not introduce confounds. Specifically, self-report measures of stress tend to assess stress *response*, which is distinct from stress exposure and is influenced by many factors, including depressive risk factors (such as neuroticism) and depression itself (Harkness & Monroe, 2016). Therefore, the present study examined associations between the CLSQ, neuroticism, and perceived stress (a component of the stress response) to investigate the CLSQ's discriminant validity as a stress exposure, rather than response, measure.

Findings in the present study largely supported that the CLSQ assesses distinct constructs from neuroticism and perceived stress. The majority of CLSQ scales were associated through significant but medium correlations with neuroticism and perceived stress as anticipated—and in some cases, correlations were smaller than predicted, providing further evidence of the CLSQ’s discriminant validity. In all cases, the association between the CLSQ scale and corresponding LSI scale was descriptively larger than associations between the CLSQ and neuroticism as well as perceived stress, suggesting that the CLSQ assessed the construct of chronic stress exposure as intended rather than other related, but distinct, constructs.

The correlations between the Family Relationships scale with perceived stress and neuroticism, and between the Academics scale with perceived stress, were higher than anticipated. One explanation is that responses to items on these scales are driven more strongly by a respondent’s level of perceived stress and—in the case of Family Relationships—by neuroticism than responses on the other CLSQ scales. Although this is possible, another reasonable explanation takes into account the overall findings here that implicate Academics and Family Relationships as particularly important contributors of chronic stress in the lives of young adults. Prior work supports that students prioritize academic goals and also that many students experience chronic academic stress (Ranta et al., 2014; Towbes & Cohen, 1996). Additionally, family relationships, support, and identity are vital during the young adult years (Cutrona et al., 1994; Miczo et al., 2006; Neighbors et al., 1997; Tsai et al., 2013). It is therefore possible that out of all CLSQ domains, chronic stress exposure within the Academic and Family Relationships domains contributes most strongly to respondents’ perceptions of their overall stress level. Or, heightened chronic stress in the Academic and Family Relationships domains may result in stress

spillover into multiple domains, which in turn may contribute to the perception of higher overall stress.

Finally, the finding related to the stronger correlation than expected between the Family Relationships scale and trait neuroticism may relate to the shared genetic component of neuroticism between participants and their families (Vukasović, & Bratko, 2015). Unlike in peer relationships, respondents are more likely to share features of neuroticism with their family members, which could generate an overall “proneness to negative social experiences” within the family (Neyer & Lehnart, 2007, p. 540). It is therefore possible that neuroticism plays a stronger role in generating chronic stress in the family system compared to peer relationships. Further, the pandemic context may have amplified this effect, as many participants were likely living at home and in frequent contact with family members—likely much more than with peers—during the study period.

Limitations

Psychometric Properties

Kurtosis and Skew

Of the 107 items retained on the final CLSQ, the response distributions for 21 items were moderately nonnormal as indicated by values of kurtosis and/or skew (Curran et al., 1996): All 21 were leptokurtic, and 6 were also positively skewed. Responses on these 21 items indicated that most participants endorsed exceptional circumstances indicating the absence of chronic stress. These items were found in the interpersonal domains of Close Friendship and Romantic Relationship-In a Relationship, and in the non-interpersonal domains of Neighborhood, Work, Finances, Health-Self, and Health-Family.

One possible explanation is that these questions and/or response options did not allow for adequate discrimination of varying levels of chronic stress experienced by participants, particularly at the end of the scale indicative of low chronic stress. For example, for items on the Close Friendship and Romantic Relationship scales, participants may have had difficulty differentiating between the responses of “Completely” and “Mostly” at the end of the scale indicating low chronic stress, particularly if they held an overall positive view of their close friend and/or romantic partner.

Another explanation for these distributions is that the characteristics of the present sample contributed to the overrepresentation of certain conditions representing an absence of any chronic strain. This is plausible for many of the 21 items. For example, within the Finances domain, relatively few students in the present sample may have had any gaps in their housing or access to food, and many participants and/or their families may have had adequate resources to consistently pay participants’ monthly bills. Similarly, within the Neighborhood domain, it is possible that the majority of participants were not exposed to stressful conditions in or near their residence due to violent crime, problems with their neighbors or roommates, or other illegal activities. And, within the Health-Self domain, item distributions may indicate that chronic health conditions occurred infrequently in this sample. Regarding the use of tobacco products and alcohol, most participants denied tobacco use and heavy drinking in the past 6 months. However, the percentages of students endorsing tobacco use (21.91%) and heavy drinking (21.78%) were substantially higher in the present sample than the percentages of U.S. college students (ages 18 to 22) reporting tobacco (11.4%) and heavy alcohol (7.8%) use in the past month, assessed via survey in 2020 (Substance Abuse and Mental Health Service Administration, 2021). Therefore, it is likely that the response distributions of these CLSQ items

accurately reflected that tobacco use and heavy drinking behaviors were relatively uncommon in the sample (although a substantial minority did endorse tobacco use and heavy drinking).

Inter-Item and Item-Scale Correlations

Correlations between items and between individual items and overall subscales/scales tended to vary in strength. This likely reflects the breadth of the CLSQ's assessment of multiple sources of chronic stress in different life domains, some of which are more closely related than others. Although the majority of items demonstrated inter-item and item-scale correlations of sufficient strength, patterns of correlations suggest that further efforts are needed to ensure that chronic stress is assessed comprehensively in two areas.

Specifically, within the Romantic Relationship-Dating scale (composed of 4 items), two items assessing the extent of opportunities and options for dating were highly correlated with each other and with the overall scale, while the two remaining items assessing the frequency of dating and potential for long-term partnerships each correlated weakly with all other items and with the overall scale. Similarly, within the Romantic Relationship-Single-Options subscale (composed of 3 items), two items assessing satisfaction with being single were correlated highly with each other and the overall scale, while the third item assessing length of time since one's last relationship or dating activity was weakly correlated with the two other items and the overall scale. The variation in strengths of item associations within the Dating scale and Single-Options subscale is particularly important given the short length of each. These varying correlations suggest that the Dating scale and Single-Options subscale may be capturing specific aspects of chronic stress within their respective domain more adequately than others, indicating the need for further item development efforts.

Reliability

Related to the inconsistent patterns of inter-item and item-scale correlations within the Romantic Relationship-Dating scale and Romantic Relationship-Single-Options subscales (and the short length of the scales), the internal consistency reliability estimates for this scale and subscale were low. However, the estimate for the Neighborhood-Home Tranquility subscale was the lowest, which was due to the short length (3 items) and the medium size of all inter-item and item-scale correlations. Although reliability could be increased through development of additional items, the consistent pattern of medium-sized correlations indicate that the Home Tranquility subscale is appropriately assessing multiple aspects of chronic stress exposure within one's residence.

In terms of test-retest reliability estimates, the Social Life-Conflict subscale and the overall Social Life scale demonstrated lower than expected temporal stability over the two-week interval. As a measure of chronic stress, the CLSQ should capture a relatively stable phenomenon over time as indicated through high test-retest reliability. In the case of the Social Life-Conflict subscale and Social Life scale, responses appeared to change substantially in a short time. This may be due to instructions for participants to think about their group of friends when answering the corresponding questions: It is possible that participants with several friend groups based their responses on a different group at each assessment, or that participants considered certain friends when responding on the first administration and different friends on the second. Given the smaller subsample available for this assessment, further evaluation is required before drawing firm conclusions about the adequacy of test-retest reliability. However, solutions may include different wording of instructions or a reminder to participants at the second administration to consider the same friend group when responding.

Dimensionality and Model Specification

Results from confirmatory factor analyses with the CLSQ indicated that model fit was suboptimal for the originally proposed two-factor model representing Interpersonal and Non-Interpersonal chronic stress factors. Model fit was improved, though the evidence was still mixed, for the adequacy of a two-factor model allowing cross-loading of the Academic and Family Relationships domains onto both factors. Factor loadings were significant, but the factors explained less than 50% of the indicators' variances.

Of note, recommendations for scale development include use of EFA to first identify dimensionality, followed by CFA in a separate sample using EFA findings to guide predictions (Rosellini & Brown, 2021). Although a priori predictions for the CFA conducted in this study were based on the scoring conventions of the UCLA LSI, EFA may have indicated an alternative factor structure. Given there is no previously published information about the LSI's factor structure, which the CLSQ should be expected to approximate, further research is needed to identify the overall dimensionality of both the LSI and the CLSQ.

Finally, a different measurement model may be reasonable to consider for the construct of chronic stress exposure assessed on the CLSQ. The factor analyses here specified a reflective model, in which CLSQ scale scores are determined by the latent factors of Interpersonal and Non-Interpersonal chronic stress. By contrast, in a formative measurement model, the latent Interpersonal and Non-Interpersonal chronic stress factors would be determined by the CLSQ scale scores (Bollen & Lennox, 1991). The various sources of chronic stress exposure would combine to form the latent chronic stress factors (MacKenzie et al., 2005). In reflective models, each indicator is considered to be interchangeable because of the unidimensionality of the underlying factor, whereas in formative models, each indicator makes up a distinct component of

the factor (Kline, 2013). Although a reflective model is conceptually reasonable given the relationships between stress across different life domains, evaluating a formative assessment model in future investigations of the CLSQ may be useful.

Assessing Chronic Stress Related to Role Absence

Results comparing the relationships between Romantic Relationship and Employment stress and depression indicated that the strength of associations differed based on the life circumstance—specifically, increasing role stress (as a romantic partner or as a worker) was associated with greater depression compared to increasing stress due to role absence. One interpretation of these findings is that chronic stress resulting from social roles is not equivalent to chronic stress resulting from their absence, and therefore (contrary to predictions) scores in these different circumstances cannot be used interchangeably in the CLSQ.

These results have implications for scoring of the CLSQ that may extend to the Close Friendship and Social Life domains as well. On the LSI, if respondents deny the presence of a close friendship and/or social group (or one acquaintance), they are assigned a score of “5,” representing the highest level of chronic strain. Although the original conceptualization was to follow this approach on the CLSQ, the results in the Romantic Relationship and Employment domains suggest that assigning a score of 5 for the absence of friendships may not accurately capture the chronic stress of role absence. In its current form, the CLSQ does not contain items that assess chronic stress within the circumstances of the absence of peer relationships in a similar manner to the Romantic Relationship-Single and Employment-Not Working domains.

Assessing Chronic Stress Related to Discrimination

The CLSQ was developed to assess chronic stress exposure through questions about role and ambient strains across ten life domains, paralleling the structure of the UCLA LSI. A

dimension that is not included, however, is chronic stress exposure due to “stigma, prejudice, and discrimination [that] create a hostile and stressful social environment” (Meyer, 2003, p. 674). Experiences of discrimination are prevalent and implicated in adverse mental health outcomes (Casey et al., 2019; Kessler et al., 1999; Lee et al., 1999), and the absence of questions regarding experiences of discrimination, stigma, and prejudice based on one’s identity represents a limitation to the comprehensiveness of the CLSQ in its current form.

The multidimensional construct of discrimination is defined and operationalized in numerous ways (Chin et al., 2020). Further, the dimensions of discrimination representing forms of chronic stress are not well characterized (Williams & Mohammed, 2009). Research is needed to clarify the construct of discrimination-related chronic stress and to develop appropriate items for its assessment. These items should be incorporated into the CLSQ as it undergoes iterative development.

Sample Characteristics

This study sought to include a diverse sample of participants through recruitment of young adults at three academic institutions—a public university, private university, and community college—in two geographic locations. This recruitment approach increased some, but not all, dimensions of diversity and representativeness of the sample.

With regard to limitations in representativeness, the sample was exclusively composed of students enrolled in at least one course in a post-secondary institution at the undergraduate level. Certain findings from the present study may or may not hold among young adults who are not students (or who are graduate students). For example, results in the present study indicated that chronic stress within the Academic and Family Relationships domains were associated with chronic stress in most other life domains. One interpretation of these results is that chronic stress

within a person's academic program and family of origin is implicated in stress spillover into other life domains. However, for young adults who are not students, the academic domain is absent. It is plausible that in this circumstance, other sources of chronic stress—for example, within the employment domain—may assume more potent roles. Further, the CLSQ does not assess potentially unique sources of chronic stress associated with absence from the academic role but with plans to return (e.g., for students who have graduated with an undergraduate degree and who plan to pursue higher education in the near future). Finally, it is also unknown whether the present results regarding family of origin relationships would hold among samples of young adults who are employed and who are not students. Outside of the college context, other interpersonal relationships—namely romantic relationships (Bogle, 2008)—may become more central in young adults' lives, and chronic stress within the romantic relationship domain may concurrently begin to exert greater effects on stress spillover and other outcomes, such as depression.

Another limitation in sample representativeness includes the lack of diversity of gender identities within the sample. The majority of the sample (71%) identified as female, followed by male (26.8%), and finally as gender-expansive (1.9%; non-binary, Indigiqueer/third-gender, genderqueer, genderfluid, and agender). Further, sexual orientation was not assessed in the current study. The Minority Stress Model (Hendricks & Testa, 2012; Meyer, 2003) posits that people with diverse sexual orientations and gender identities are exposed to increased stress from distal and proximal sources, which leads to adverse mental health outcomes. It is likely that chronic stress exposure is greater across multiple life domains assessed on the CLSQ for people with expansive gender identities and/or sexual orientations than for people identifying as cisgender and/or heterosexual.

Finally, 86% of participants completed the study during the COVID-19 pandemic. For over two years, the pandemic has had far-reaching and long-lasting effects on the lives of many students. It is likely that pandemic-related circumstances (e.g., completing classes remotely or via hybrid models, living with family, adhering to safety protocols at jobs, modifying patterns of socializing) influenced participants' responses on the CLSQ to some extent. Concurrently, though, hypotheses about the CLSQ (which were not pandemic-dependent) were largely supported in the present study. Therefore, although it is unlikely that the pandemic context rendered the CLSQ ineffective for assessing chronic stress, further investigation is needed to determine whether present findings—particularly those that were unexpected—hold in a post-pandemic environment.

Future Directions

Scale Development Studies

The present study involved the development of the Chronic Life Stress Questionnaire for young adults and initial evaluation of the measure's psychometrics properties. Scale development is iterative, and current findings will guide future efforts to strengthen the CLSQ. For example, further development of items is required for the Romantic Relationships-Dating scale and Romantic Relationships-Single-Options subscale to ensure adequate content coverage in these areas. Additional domains should also be considered for the CLSQ that assess chronic stress related to absence of a close friendship and/or social group, and related to absence from a student role. Further, future versions of the CLSQ should incorporate chronic stress exposure due to discrimination, which will involve identification of specific constructs, generation of an initial item pool, and evaluation by experts and non-experts.

In future studies evaluating the CLSQ, increasing the representativeness of samples is important, specifically through recruitment of young adults who are not enrolled in a postsecondary course of study and young adults who represent a diversity of gender identities and sexual orientations. Administration of the CLSQ to larger and diverse samples will allow for further evaluation of its properties using Item Response Theory and Differential Item Functioning methods. Investigation of the CLSQ's latent structure using a formative measurement model may also prove useful.

The present CLSQ was developed for young adults ages 18 to 24. Future efforts may include developing versions of the CLSQ for various age groups through modification of items within existing domains and/or generation of item pools for new domains. Additionally, once full-scale versions have been validated, shorter versions of the CLSQ may be desirable.

Empirical Studies

In addition to guiding future efforts toward iterative development and validation of the CLSQ, this study raised empirical questions about chronic stress for further study. For example, though causal relationships cannot be determined in the present study, results provided potential clues into mechanisms of chronic stress spillover. Studies investigating spillover mechanisms and that allow for causal interpretations will contribute substantial knowledge regarding the nature of chronic stress and potential avenues by which chronic stress contributes to outcomes such as depression. Longitudinal studies may investigate chronic stress spillover mechanisms as well as chronic stress generation, the latter of which has been noted as an understudied area in stress and depression research (Liu & Alloy, 2010). Present results indicate that the domains of family relationships and academics may be particularly important in the lives of young adults. These domains should be investigated in the context of studies on chronic stress spillover.

Complementing this work, network modeling of the CLSQ may elucidate whether chronic stress in family relationships and academics indeed represent central aspects of chronic stress among young adults.

Overall, the CLSQ holds promise as a comprehensive measure that requires comparatively few resources for administration and that has the potential to advance a finer-grained understanding of chronic stress and its relationships with other constructs, including mental and physical health outcomes.

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APPENDIX A: THE CHRONIC LIFE STRESS QUESTIONNAIRE

General instructions

The following questions are about experiences in different areas of your life over the past 6 months. That would be from XX date until today. There are no right or wrong answers to these questions.

I. Close Friendship

Instructions: The first area is friendships. Think about the person who has been your closest friend over the past 6 months.

Please think of a friend who is **not** your sibling, half-sibling, parent/guardian/caregiver, or romantic partner. We will ask you some questions about these relationships later.

If there are several people who you have been equally close with over the past 6 months, just focus on one of them when you answer these questions. It is OK to choose one of these friends at random if you feel equally close to them. Please answer all of the following questions about the same friend.

1. Do you have a close friend?

1. Yes
2. No

→ If “1. Yes,” proceed to item 4

→ If “2. No,” proceed to item 2

2. Do you have a friend or acquaintance?

1. Yes
2. No

→ If “1. Yes,” proceed to item 4

→ If “2. No,” proceed to item 3

3. Do you have a sibling or half-sibling who you consider to be a friend or acquaintance?

1. Yes
2. No

→ If “1. Yes,” proceed to item 4

→ If “2. No,” proceed to the prompt: “Ok, we will now ask you some different questions. If you would like to leave any further information about your responses to these questions, please type them here.” A text box is provided for responses. The participant will then proceed to Social Life section.

4. In the past 6 months, how often on average have you talked with your friend, including in person or by phone call, video call, text message, email, or any other messaging system?

1. Every day or almost every day
2. Several times a week
3. About once a week
4. Several times a month
5. Once a month or less

5. How much have you felt that your friend would be there for you if you needed them for emotional support?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

6. How much have you felt that you could count on your friend to do the things they say they will do?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

7. How close have you felt toward your friend?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

8. How much have you felt that your friendship is mutual? By mutual, we mean you and your friend are both close and supportive of each other, rather than the friendship being one-sided.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

9. How much personal, private, or sensitive information have you felt that you could share with your friend?

1. Everything
2. Most things
3. Some things
4. Only a few things
5. Nothing

10. How honest have you felt that your friend has been with you?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

11. How much has your friend accepted you for who you are?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

12. How satisfied have you been with this friendship?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

13. How often have you argued with your friend? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.

1. Not at all
2. Less than once a month
3. About once or twice a month
4. About once a week
5. Several times a week

14. Which of the following options best describes how a typical argument (emotional conflict) has gone with your friend? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.

1. We talk and listen to each other calmly and respectfully.
2. One or both of us might get a little upset.
3. We have a heated discussion, and one or both of us use raised voices, insults, and/or sarcasm.
4. We have an intense argument, and one or both of us yell, name-call, and/or make non-violent threats.
5. One or both of us use physical violence or make threats of violence.

15. How often have you and your friend had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

16. To what extent have you and your friend been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

17. How often have you avoided talking with your friend about a problem in your friendship, even though something was wrong?

1. Never or we have not had a problem in our friendship
2. Rarely
3. Sometimes
4. Often
5. Always

Following completion of the Close Friendship domain, participants will complete the Social Life domain.

II. Social Life

Instructions: Now think about your larger group of friends over the past 6 months. If you do not have a larger group of friends, think about an acquaintance or a group of acquaintances over the past 6 months. Please think of friends who are **not** the close friend we asked you about before or a romantic partner.

1. Do you have a social group or several friends or acquaintances? These could be friends or acquaintances you have had contact with at any time in the past 6 months.

1. Yes
2. No

→ If “1. Yes,” proceed to item 3

→ If “2. No,” proceed to item 2

2. Do you have one friend or acquaintance who you have had contact with at any time in the past 6 months, other than a romantic partner and the close friend we already asked you about?

1. Yes
2. No

→ If “1. Yes,” proceed to the prompt: “Ok, please focus on this friend when answering the following questions.” Proceed to item 3.

→ If “2. No,” proceed to the prompt: “Ok, we will now ask you some different questions. If you would like to leave any further information about your responses to these questions, please type them here.” A text box is provided for responses. The participant will then proceed to the Romantic Relationship section.

3. How many people are in that group? Do not count yourself and the close friend we previously asked you about if that person is in your social group.

1. More than 8 people
2. 5 to 8 people
3. 3 to 4 people
4. 2 people
5. 1 person

4. In the past 6 months, how often on average have you talked with your friends, including in person or by phone call, video call, text message, email, or any other messaging system?

1. Every day or almost every day
2. Several times a week
3. About once a week
4. Several times a month
5. Once a month or less

5. How often have you participated in social activities?

1. At least once per week
2. About once every other week
3. About once a month
4. Less than once a month
5. Not at all

6. How mutual has the contact generally been between you and your friends? Select the best option below.

1. I initiate contact with friends as much as they initiate contact with me.
2. I initiate contact with friends occasionally more often than they initiate contact with me.
3. I initiate contact with friends more often than they initiate contact with me.
4. I initiate contact with friends most of the time; they rarely initiate contact with me.
5. I initiate contact with friends all of the time; they never initiate contact with me.

7. How much have your friends accepted you for who you are?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

8. How lonely have you felt because you did not have anyone to socialize with?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

9. How satisfied have you been with your social life?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

10. How often in general have you argued with your friends? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.

1. Not at all
2. Less than once a month
3. About once or twice a month
4. About once a week
5. Several times a week

11. Which of the following options best describes how a typical argument (emotional conflict) has gone with your friends? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.

1. We talk and listen to each other calmly and respectfully.
2. One or more of us might get a little upset.
3. We have a heated discussion, and one or more of us use raised voices, insults, and/or sarcasm.
4. We have an intense argument, and one or more of us yell, name-call, and/or make non-violent threats.
5. One or more of us use physical violence or make threats of violence.

12. How often in general have you and your friends had emotional conflicts during which one or more of you ignore each other (give the “silent treatment”) or are less supportive or available than usual?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

13. To what extent have you and your friends generally been able to resolve arguments or conflicts in a manner that is satisfying to both you and the friend(s) involved? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

14. How often in general have you avoided talking with one or more of your friends about a problem in your friendship, even though something was wrong?

1. Never or we have not had problems in our friendships
2. Rarely
3. Sometimes
4. Often
5. Always

Following completion of the Social Life domain, participants will complete the Romantic Relationships Domain.

III. Romantic Relationship

Instructions: The next questions are about your romantic relationship history in the past 6 months.

1. At any point in the past 6 months, have you been in a committed romantic relationship, including exclusively dating one person or married?

1. Yes
2. No

→If “1. Yes,” prompt: “The next questions will be about your relationship with your romantic partner. If you have been in multiple committed relationships in the past 6 months, please answer the questions about the relationship that lasted the longest **within the past 6 months**. Please focus on the period of time within the past 6 months when you were in this relationship.” Proceed to item 2

→If “2. No,” proceed to item 4

2. How long in total have you been in a relationship with your romantic partner?

1. less than 1 month
2. 1 month to 3 months
3. 3 to 6 months
4. 6 months to 1 year
5. 1 year to 3 years
6. 3 years to 5 years
7. 5 years to 10 years

3. For how many of the past 6 months were you in this committed romantic relationship?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

→ Proceed to item 8 (Committed Romantic Relationship section).

4. At any point in the past 6 months, have you been in a brief or uncommitted relationship? This includes casual dating.

1. Yes
2. No

→If “1. Yes,” Prompt: “The next questions will be about these experiences.” Proceed to item 5

→If “2. No,” proceed to item 6

5. For how many of the past 6 months were you dating or in any brief or uncommitted relationships?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

→ Proceed to item 28 (Single and Dating but Not in a Committed Romantic Relationship section)

6. At any point in the past 6 months, have you been single and NOT dating?

1. Yes
2. No

→If “1. Yes,” Prompt: “The next questions will be about these experiences.” Proceed to item 7

→If “2. No,” Prompt: “Ok, we will now ask you some different questions. If you would like to leave any further information about your responses to these questions, please type them here.” A text box is provided for responses. Proceed to Family Relationships domain

7. For how many of the past 6 months were you single and NOT dating?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

→ Proceed to item 34 (Single and Not Dating section)

A. Committed Romantic Relationship

8. In the past 6 months, how much of the time have you and your romantic partner spent on a break or broken up? If you began your relationship within the past 6 months, base this on the time since the relationship began.

1. No time (0% of the time)
2. A small amount of time (less than 25% of the time)
3. Some of the time (between 25% and less than 50% of the time)
4. Much of the time (between 50% and less than 75% of the time)
5. Almost the entire time (75% or more of the time)

9. How often on average have you talked with your romantic partner, including in person or by phone call, video call, text message, email, or any other messaging system?

1. Every day or almost every day
2. Several times a week
3. About once a week
4. Several times a month
5. Once a month or less

10. How close have you felt toward your romantic partner?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

11. How much have you felt that your relationship is mutual? By mutual, we mean you and your romantic partner are both close and supportive of each other, rather than the relationship being one-sided.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

12. How much personal, private, or sensitive information have you felt that you could share with your romantic partner?

1. Everything
2. Most things
3. Some things
4. Only a few things
5. Nothing

13. How honest have you felt that your romantic partner has been with you?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

14. How supportive has your romantic partner been of you?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

15. How much has your romantic partner accepted you for who you are?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

16. How satisfied have you been with your relationship?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

17. How satisfied have you been with your physical relationship with your partner?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

18. How often have you argued with your romantic partner? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.

1. Less than once a month
2. About once or twice a month
3. About once a week
4. Several times a week
5. Every day

19. Which of the following options best describes how a typical argument (emotional conflict) has gone with your romantic partner? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.

1. We talk and listen to each other calmly and respectfully.
2. One or both of us might get a little upset.
3. We have a heated discussion, and one or both of us use raised voices, insults, and/or sarcasm.
4. We have an intense argument, and one or both of us yell, name-call, and/or make non-violent threats.
5. One or both of us use physical violence or make threats of violence.

20. How often have you and your romantic partner had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

21. To what extent have you and your romantic partner been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

22. How often have you avoided talking with your romantic partner about a problem in your relationship, even though something was wrong?

1. Never or we have not had a problem in our relationship
2. Rarely
3. Sometimes
4. Often
5. Always

23. How much have you felt that your romantic relationship has caused tension in your other close relationships, including with your family and friends?

1. Not at all
2. Slightly
3. Somewhat
4. Very
5. Extremely

24. At any point in the past 6 months, have you been in a brief or uncommitted relationship? This includes casual dating.

1. Yes
2. No

→ If “1. Yes,” Prompt: “The next questions will be about these experiences.” Proceed to item 25

→ If “2. No,” proceed to item 26

25. For how many of the past 6 months were you dating or in any brief or uncommitted relationships?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

→ Proceed to item 28 (Single and Dating but Not in a Committed Romantic Relationship section)

26. At any point in the past 6 months, have you been single and NOT dating?

1. Yes
2. No

→ If “1. Yes,” Prompt: “The next questions will be about these experiences.” Proceed to item 27

→ If “2. No,” Prompt: “Ok, we will now ask you some different questions.” Proceed to Family Relationships domain

27. For how many of the past 6 months were you single and NOT dating?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

→ Proceed to item 34 (Single and Not Dating section)

B. Single and Dating but Not in a Committed Romantic Relationship

28. In the past 6 months, how often in general did you date or were you in brief relationships?

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never

29. Of the people you have dated or had brief romantic relationships with, how much potential did they have to be longer-term partners?

1. Excellent potential
2. Good potential
3. Average potential
4. Poor potential
5. Very poor potential

30. How much have you felt that you have had many opportunities to date people you are interested in?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

31. How much have you felt that you have had many options about whom to date?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

32. At any point in the past 6 months, have you been single and NOT dating?

1. Yes
2. No

→ If “1. Yes,” Prompt: “The next questions will be about these experiences.” Proceed to item 33

→ If “2. No,” Prompt: “Ok, we will now ask you some different questions.” Proceed to Family Relationships domain

33. For how many of the past 6 months were you single and NOT dating?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

→ Proceed to item 34 (Single and Not Dating section)

C. Single and Not Dating

34. How long has it been since your last relationship or since you dated?

1. 6 months or less
2. More than 6 months but less than 1 year
3. 1-2 years
4. 3-4 years
5. 5 or more years or I have never been in a relationship or dated

35. How satisfied have you been with being single and not dating?
1. Completely
 2. Mostly
 3. Somewhat
 4. Slightly
 5. Not at all
36. How much time do you spend wishing you were in a romantic relationship?
1. Never
 2. Rarely
 3. Sometimes
 4. Often
 5. Always
37. How much do you feel that if you wanted to date, you would have opportunities to date people you are interested in?
1. Completely
 2. Mostly
 3. Somewhat
 4. Slightly
 5. Not at all
38. How much do you feel that if you wanted to date, you could easily find someone to date?
1. Completely
 2. Mostly
 3. Somewhat
 4. Slightly
 5. Not at all
39. How many of your friends have been in romantic relationships in the past 6 months?
1. None
 2. A couple
 3. Some
 4. Most
 5. All
40. How much have you felt pressured to date from friends and family?
1. Not at all
 2. Slightly
 3. Somewhat
 4. Very
 5. Extremely
41. How lonely have you felt because you were not dating or in a romantic relationship?
1. Not at all
 2. Slightly
 3. Somewhat
 4. Very
 5. Extremely

Following completion of the Romantic Relationship domain, participants will complete the Family Relationships Domain.

IV. Family Relationships

Instructions: The next questions will be about your immediate family of origin. **Immediate family of origin means your parent(s), guardian(s), or other close caregiver(s), as well as your siblings.**

1. Do you have an immediate family, including parent(s), guardians(s), other close caregivers(s), and/or siblings? Please do not count your friends, romantic partner, spouse, or your children.

1. Yes
2. No

→If “1. Yes,” proceed to Further Instructions and item 2

→If “2. No,” Prompt: “Ok, we will now ask you some different questions.” Proceed to Neighborhood/Dorm Environment domain

Further Instructions: For the next questions, please think about the parent, stepparent, guardian, or caregiver who you have felt closest to in the past 6 months. If you have several parents/guardians/caregivers who you have felt equally close with, it is OK to choose one at random.

2. In the past 6 months, how often on average have you talked with your parent/guardian/caregiver, including in person or by phone call, video call, text message, email, or any other messaging system? Do not count in-person conversations.

1. Several times a week
2. About once a week
3. Several times a month
4. Once a month or less
5. Not at all

3. How much have you felt that your parent/guardian/caregiver would be there for you if you needed them for emotional support?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

4. How much have you felt that you could count on your parent/guardian/caregiver to do the things they say they will do?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

5. How close have you felt toward your parent/guardian/caregiver?
 1. Extremely
 2. Very
 3. Somewhat
 4. Slightly
 5. Not at all

6. How much personal, private, or sensitive information have you felt that you could share with your parent/guardian/caregiver?
 1. Everything
 2. Most things
 3. Some things
 4. Only a few things
 5. Nothing

7. How honest have you felt that your parent/guardian/caregiver has been with you?
 1. Completely
 2. Mostly
 3. Somewhat
 4. Slightly
 5. Not at all

8. How much has your parent/guardian/caregiver accepted you for who you are?
 1. Completely
 2. Mostly
 3. Somewhat
 4. Slightly
 5. Not at all

9. How often have you argued with your parent/guardian/caregiver? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.
 1. Not at all
 2. Less than once a month
 3. About once or twice a month
 4. About once a week
 5. Several times a week

10. Which of the following options best describes how a typical argument (emotional conflict) has gone with your parent/guardian/caregiver? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.
 1. We talk and listen to each other calmly and respectfully.
 2. One or both of us might get a little upset.
 3. We have a heated discussion, and one or both of us use raised voices, insults, and/or sarcasm.
 4. We have an intense argument, and one or both of us yell, name-call, and/or make non-violent threats.
 5. One or both of us use physical violence or make threats of violence.

11. How often have you and your parent/guardian/caregiver had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

12. To what extent have you and your parent/guardian/caregiver been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

13. How often have you avoided talking with your parent/guardian/caregiver about a problem in your relationship, even though something was wrong?

1. Never or we have not had a problem in our relationship
2. Rarely
3. Sometimes
4. Often
5. Always

Further Instructions: The next questions are based on your immediate family in general (all parents/caregivers and siblings).

14. In the past 6 months, how much have you felt that other members of your immediate family would be there for you if you needed them for emotional support?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

15. How much personal, private, or sensitive information have you felt that you could share with other members of your immediate family?

1. Everything
2. Most things
3. Some things
4. Only a few things
5. Nothing

16. How honest have you felt that other members of your immediate family have been with you?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

17. How much have other members of your immediate family accepted you for who you are?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

18. How often have you had problems with other members of your immediate family, for example, serious conflicts or arguments?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

19. Have you purposefully stopped having any contact with an immediate family member due to serious tension or conflict?

1. Not at all
2. For a few days
3. For at least a week
4. For at least 1 month
5. For at least 2 months

Following completion of the Family Relationships domain, participants will complete the Neighborhood/Dorm Environment domain

V. Neighborhood/Dorm Environment

Instructions: The next questions will be about your living situation in the past 6 months. If you have lived in several different residences, please answer the next questions about the one you lived in for the longest amount of time within the past 6 months. Please focus on the period of time within the last 6 months when you lived in that residence.

1. What type of residence have you lived in for the longest amount of time within the past 6 months?

1. House
2. Apartment or duplex
3. Dorm
4. Other; please specify: _____

2. Do you have your own room at that residence?

1. Yes
2. No

3. In the past 6 months, how satisfied have you been with the amount of personal space you have had at that residence?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

4. How satisfied have you been with the amount of privacy you have had at that residence?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

5. How often have violent crimes been committed near that residence, that you are aware of? Examples include armed robbery, homicide, physical and sexual assault.

1. Never
2. Less than once a month
3. Once or twice a month
4. About once a week
5. Several times a week

6. How often have non-violent crimes been committed near that residence, that you are aware of? Examples include theft, possessing drugs, selling drugs, prostitution.

1. Never
2. Less than once a month
3. Once or twice a month
4. About once a week
5. Several times a week

7. How often have your neighbors or the people you live with engaged in unsafe or illegal activities in your neighborhood or residence, that you are aware of?

1. Never
2. Less than once a month
3. Once or twice a month
4. About once a week
5. Several times a week

8. How often has noise gotten in the way of your studying and/or sleep?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

9. How well have you known your neighbors and/or roommate(s)?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

10. How often have you had problems with your neighbors or roommate(s)?

1. Never
2. Less than once a month
3. Once or twice a month
4. About once a week
5. Several times a week

Following completion of the Neighborhood/Dorm Environment domain, participants will complete the School/Academic Experiences domain

VI. School/Academic Experiences

Instructions: The next questions will be about school in the past 6 months.

1. Have you been in school at any time in the past 6 months?

1. Yes
2. No

→ If “1. Yes,” proceed to item 2

→ If “2. No,” Prompt, “Ok, we will now ask you some different questions.” Proceed to Work domain

2. Please select the academic setting where you spent the longest amount of time within the past 6 months.

1. High school
2. Community college
3. Vocational-technical or career college
4. Four-year college or university
5. Graduate or professional school

Further Instructions: Please answer the following questions about the school where you spent the longest amount of time within the past 6 months. Please focus on the period of time within the last 6 months when you attended that school.

3. In the past 6 months, which best describes the grades you have received at that school?

1. A average
2. B average
3. C average
4. D average
5. F average

4. How often have you had serious academic problems, for example received failing grades, been placed on academic probation, needed to complete remedial coursework?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

5. To what extent have you had positive relationships with your instructors?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

6. How effective have your study skills been for meeting your school's demands?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

7. How often have the resources you needed to learn and progress in your program been available to you? These include course materials like books and other library resources, as well as meetings with instructors, tutoring or workshops on campus, and accommodations in classes.

1. Always
2. Often
3. Sometimes
4. Rarely
5. Never

8. To what extent has your schoolwork felt too challenging to manage?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

9. How satisfied in general have you been with your school?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

10. How well has your school prepared you to achieve your future educational and/or career goals?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

Following completion of the School/Academic Experiences domain, participants will complete the Work domain

VII. Work

Instructions: The next questions will be about your work history in the past 6 months.

1. Have you been employed in a paid position for any length of time in the past 6 months? Paid internships may be counted.

1. Yes
2. No

→ If “1. Yes,” proceed to A. Currently Working and Further Instructions

→ If “2. No,” proceed to item 18

A. Currently Working

Further Instructions: If you have held more than one paid position in the past 6 months, choose your main job or the one you have held for the longest time within the last 6 months. Please focus on the period of time within the last 6 months when you were working at that job.

2. For how many of the past 6 months were you employed at this job?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

3. In the past 6 months, how safe have you felt at your job?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

4. How manageable has the workload been at your job?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

5. How adequately have you been able to perform all the duties of your job?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

6. To what extent have you been given the responsibilities you wanted at work?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

7. How many hours have you worked each week when you had a job?
 1. Less than 10 hours
 2. More than 10 hours, but less than 20 hours
 3. 20 hours or more, but less than 40 hours
 4. 40 hours or more, but less than 50 hours
 5. 50 hours or more

8. How much has your work interfered with other parts of your life, for example, your education, hobbies, relationships?
 1. Not at all
 2. Slightly
 3. Somewhat
 4. Mostly
 5. Completely

9. Has the pay at your job been satisfactory?
 1. Extremely
 2. Very
 3. Somewhat
 4. Slightly
 5. Not at all

10. How much have you felt that your supervisors, co-workers, and/or customers have appreciated your work?
 1. Extremely
 2. Very
 3. Somewhat
 4. Slightly
 5. Not at all

11. How often have you received negative feedback or evaluations at work?
 1. Never
 2. Rarely
 3. Sometimes
 4. Often
 5. Always

12. To what extent have you had a positive relationship with your supervisor(s)?
 1. Completely
 2. Mostly
 3. Somewhat
 4. Slightly
 5. Not at all

13. To what extent have you had positive relationships with your co-workers?
 1. Completely
 2. Mostly
 3. Somewhat
 4. Slightly
 5. Not at all

14. How much have you felt pressured to work, for example by your family for financial reasons?

1. Extremely
2. Very
3. Somewhat
4. Slightly
5. Not at all

15. How much have you felt that if you wanted to quit your job, you could find a job somewhere else?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

16. How much have you felt that your job was (or is) secure, in other words that the position will exist in the future?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

17. How often have you had to change jobs for any reason?

1. Never
2. Rarely
3. A few times
4. Many times
5. Almost constantly

18. Have you been unemployed for any length of time in the past 6 months? By unemployed, we mean that you did not have a paying job.

1. Yes
2. No

→ If “1. Yes,” proceed to B. Not Currently Working section and Further Instructions

→ If “2. No,” prompt, “Ok, we will now ask you some different questions.” Proceed to Financial domain

B. Currently Not Working

Further Instructions: When answering these next questions, please focus on the period of time within the last 6 months when you were unemployed.

19. For how many of the past 6 months were you unemployed?

1. About 6 months
2. About 5 months
3. About 4 months
4. About 3 months
5. About 2 months or less

20. In the past 6 months, how much have you needed a job?

1. Not at all
2. Slightly
3. Somewhat
4. Very much
5. Extremely

21. How much have you wanted a job?

1. Not at all
2. Slightly
3. Somewhat
4. Very much
5. Extremely

22. How many jobs were available that you would be qualified to do?

1. Very many
2. Many
3. Some
4. Very few
5. None

23. How difficult has it been to obtain a job?

1. Not at all or I am not looking for a job
2. Slightly
3. Somewhat
4. Very
5. Extremely

Following completion of the Work domain, participants will complete the Finances domain.

VIII. Finances

Instructions: The next questions are about your finances in the past 6 months.

1. What is the yearly income of the person who is responsible for your bills? This could be your income or the combined income of your parents/caregivers.

1. \$130,000 or more
2. \$80,000 or more, but less than \$130,000
3. \$50,000 or more, but less than \$80,000
4. \$25,000 or more, but less than \$50,000
5. Less than \$25,000

2. In the past 6 months, to what extent have you been able to afford housing, food, and household items?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

3. To what extent have you been able to afford clothing?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

4. To what extent have you been able to afford medical care?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

5. To what extent have you been able to afford transportation?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

6. To what extent could you afford to do leisure activities, for example, go out to eat at a sit-down restaurant, or go to the movies or a concert? If you chose not to do leisure activities, answer based on whether you could afford to do them if you wanted to.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

7. To what extent could you afford to go on a vacation where you would stay in a hotel? If you have not gone on vacation in the past 6 months, answer based on whether you could afford to if you wanted to.

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

8. To what extent have you or the person who supports you financially been able to pay your monthly bills?

1. Completely
2. Mostly
3. Somewhat
4. Slightly
5. Not at all

9. To what extent have you had to budget?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

10. To what extent has money been “tight” just before getting paid, for example, you lived paycheck-to-paycheck or relied on payday loans?

1. Not at all
2. Slightly
3. Somewhat
4. Very
5. Extremely

11. To what extent have you experienced financial hardship during which you have had gaps in housing or access to food?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

Following completion of the Finances domain, participants will complete the Health domain.

IX. Health

A. Health – Self

Instructions: The next questions will be about your health in the past 6 months.

1. In the past 6 months, how many times have you gotten sick with mild illnesses, infections, or injuries, like the common cold, a stomach bug, or a mild sprain?

1. Never
2. 1 or 2 times
3. 3 or 4 times
4. 5 or 6 times
5. I have been sick with a mild illness almost all the time

2. Have you had chronic medical conditions or chronic injuries, NOT including mental health difficulties?

Chronic medical conditions and chronic injuries include **but are not limited to**: heart conditions, high blood pressure, asthma, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, life-threatening allergies, Crohn's disease, thyroid disorders, sickle cell anemia, autoimmune disorders, cancer, arthritis, chronic pain, fibromyalgia, psoriasis, periodontal disease, sleep apnea, endometriosis, polycystic ovarian syndrome, lasting injuries like broken bones or torn ligaments.

1. None at all
2. One chronic problem that affects me less than every day
3. One chronic problem that affects me daily or several chronic problems that affect me less than every day
4. Several chronic problems that affect me daily
5. Many chronic problems that affect me daily

→ If "1. None at all," proceed to item 6

→ If "2, 3, 4, or 5," proceed to item 3

3. How many times have you gone to the doctor's office, an outpatient facility, or a hospital to receive treatment for chronic conditions/injuries?

1. Zero times
2. 1 to 2 times
3. 3 to 5 times
4. 6 to 10 times
5. More than 10 times

4. How much have chronic health conditions/injuries prevented you from completing daily activities and/or attaining goals that are personally important to you?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

5. To what extent do chronic health conditions/injuries threaten your life?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

6. How much have difficulties with your weight, including weighing more or less than recommended, interfered with your physical health and/or your daily activities?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

7. How often have you used tobacco or nicotine products, for example cigarettes, e-cigarettes, cigars, dip, chew?

1. Never
2. Less than once a month
3. At least once a month
4. At least once a week
5. Every day

8. For the next question, please read and answer the question that best applies to you regarding alcohol consumption.

For people who identify as men, how often have you had more than 4 drinks on any day?

For people who identify as women, how often have you had more than 3 drinks on any day?

1. Never
2. Less than once a month
3. At least once a month
4. At least once a week
5. Every day

9. For the next question, please read and answer the question that best applies to you regarding alcohol consumption.

For people who identify as men, how often have you had 14 or more drinks per week?

For people who identify as women, how often have you had 7 or more drinks per week?

1. Never
2. Less than one week a month
3. About one week a month
4. More than one week a month
5. Every week

10. How often have you exercised on average?

1. Almost every day
2. 3 to 4 times a week
3. 1 to 2 times a week
4. Several times a month
5. Less than once a month

11. How often have you had trouble falling asleep within 30 minutes?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

12. How often have you woken up in the middle of the night or early morning?

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

13. How would you rate your sleep quality overall?

1. Excellent
2. Good
3. Fair
4. Poor
5. Very poor

14. How often have you had troublesome side effects from medications you regularly take for medical or psychiatric conditions?

1. Never or I do not take medications
2. Rarely
3. Sometimes
4. Often
5. Always

B. Health – Family

Instructions: The next questions are about the health of the members of your immediate family of origin, including your parents/caregivers and siblings.

15. Do you have an immediate family, including parent(s), guardians(s), other close caregivers(s), and/or siblings?

1. Yes
2. No

→ If “1. Yes,” proceed to item 16

→ If “2. No,” the questionnaire is completed

16. In the past 6 months, how concerned have you been about the health of your immediate family members?

1. Not at all
2. Slightly
3. Somewhat
4. Very
5. Extremely

17. On average per person, how many times have members of your immediate family gotten sick with mild illnesses, infections, or injuries, like the common cold, a stomach bug, or a mild sprain?

1. Never
2. 1 or 2 times
3. 3 or 4 times
4. 5 or 6 times
5. They have been sick with mild illnesses almost all the time

18. Have any members of your immediate family (parents/caregivers or siblings) had chronic medical conditions or chronic injuries, including mental health difficulties?

Chronic conditions and chronic injuries include **but are not limited to**: heart conditions, high blood pressure, asthma, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, life-threatening allergies, Crohn's disease, thyroid disorders, sickle cell anemia, autoimmune disorders, cancer, arthritis, chronic pain, fibromyalgia, psoriasis, periodontal disease, sleep apnea, endometriosis, polycystic ovarian syndrome, lasting injuries like broken bones or torn ligaments, and mental health conditions such as depression, anxiety bipolar disorder, and schizophrenia.

1. Yes
2. No

→ If "1. Yes," proceed to Further Instructions and item 19

→ If "2. No," proceed to item 24

Further Instructions: For the next questions, think about the most serious medical condition or injury that has affected a member of your immediate family in the past 6 months.

19. How many times has this family member gone to the doctor's office, an outpatient facility, or a hospital to receive treatment for this chronic health condition/injury?

1. None
2. 1 to 2 times
3. 3 to 5 times
4. 6 to 10 times
5. More than 10 times

20. How much has this chronic health condition/injury prevented this family member from completing daily activities?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

21. To what extent does this chronic health condition/injury threaten the life of this family member?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

Further Instructions: When answering the next two questions, think about all the chronic health conditions/injuries among members of your immediate family in the past 6 months.

22. Due to chronic health conditions/injuries, how often have you generally needed to provide care for members of your immediate family? By care, we mean helping this person with daily activities and responsibilities and/or supporting them financially.

1. Not at all
2. Rarely
3. Sometimes
4. Often
5. Always

23. How much have immediate family members' chronic health conditions/injuries prevented you from completing daily activities and/or attaining goals that are personally important to you?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

24. How concerned have you been about use of tobacco or nicotine, for example cigarettes, e-cigarettes, cigars, dip, chew, etc., among members of your immediate family?

1. Not at all
2. Slightly
3. Somewhat
4. Very
5. Extremely

25. How concerned have you been about drinking problems among members of your immediate family?

1. Not at all
2. Slightly
3. Somewhat
4. Very
5. Extremely

26. How concerned have you been about problems with illegal or recreational substance use among members of your immediate family?

1. Not at all
2. Slightly
3. Somewhat
4. Very
5. Extremely

27. How much have difficulties with weight interfered with the health and/or daily activities of members of your immediate family?

1. Not at all
2. Slightly
3. Somewhat
4. Mostly
5. Completely

28. How concerned have you been about lack of exercise among members of your immediate family?

1. Not at all
2. Slightly
3. Somewhat
4. Very
5. Extremely

APPENDIX B: TABLES

Table 1. Questionnaire Administrations and Exclusions

Dates	Sample ^b	Total Sample Size	Dropped Age	Dropped Missing	Dropped Inattention	Final Sample Size
Fall 2019 Spring 2020 Fall 2020	UNCG (Lab; Virtual) ^c	97	N/A	0	4	93
Spring 2020 Fall 2020 Winter 2020-2021	UNCG (Online)	367	N/A	10	18	339
Fall 2019 Spring 2020 Fall 2020 Spring 2021 ^a	GTCC	247	86	31	3	127
Fall 2020	UR	243	N/A	2	13	228
	Overall Sample	954	86	43	38	787

^aData collected through February 2021 were included in analyses.

^bSample: UNCG: University of North Carolina at Greensboro, GTCC: Guilford Technical Community College, UR: University of Rochester.

^cData were collected during in-lab sessions up to March 2020 and following during virtual videoconference sessions due to the COVID-19 pandemic.

Table 2. Demographic Characteristics

	Total Sample	UNCG (Lab, Virtual)	UNCG (Online)	GTCC	UR
Gender Identity					
Female	559 (71.0%)	69 (74.2%)	240 (70.8%)	83 (65.4%)	167 (73.2%)
Male	211 (26.8%)	23 (24.7%)	89 (26.3%)	43 (33.9%)	56 (24.6%)
Other identity (free response)	15 (1.9%)	1 (1.1%)	10 (2.9%)	0 (0.0%)	4 (1.8%)
Prefer not to answer	2 (0.3%)	0 (0.0%)	0 (0.0%)	1 (0.8%)	1 (0.4%)
Age (years), M (SD)	19.4 (1.6)	18.8 (1.2)	18.9 (1.4)	19.9 (1.9)	20.0 (1.4)
Age Range (years)	18-24	18-24	18-24	18-24	18-24
Race/Ethnicity					
American Indian or Alaska Native	3 (0.38%)	0 (0.0%)	2 (0.6%)	1 (0.8%)	0 (0.0%)
Asian or Asian American	107 (13.6%)	4 (4.3%)	20 (5.9%)	9 (7.1%)	74 (32.5%)
Black or African American	182 (23.1%)	31 (33.3%)	101 (29.8%)	32 (25.2%)	18 (7.9%)
Hispanic, Latino, or Spanish Origin	68 (8.6%)	9 (9.7%)	31 (9.1%)	15 (11.8%)	13 (5.7%)
Middle Eastern, Arab, or North African	8 (1.0%)	1 (1.1%)	3 (0.9%)	1 (0.8%)	3 (1.3%)
Native Hawaiian or Other Pacific Islander	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
White	319 (40.5%)	37 (39.8%)	119 (35.1%)	63 (49.6)	100 (43.9%)
Endorsing multiple races/ethnicities	72 (9.1%)	10 (10.8%)	45 (13.3%)	N/A	17 (7.5%)
Other identity (free response)	11 (1.4%)	1 (1.1%)	1 (0.3%)	6 (4.7%)	3 (1.3%)
Missing	17 (2.2%)	0 (0.0%)	17 (5.0%)	0 (0.0%)	0 (0.0%)
Country of Origin (free response)					
United States	640 (81.3%)	87 (93.5%)	295 (87.0%)	114 (89.8%)	144 (63.2%)
Outside United States	140 (17.8%)	6 (6.5%)	41 (12.1%)	13 (10.2%)	80 (35.1%)
Missing	7 (0.9%)	0 (0.0%)	3 (0.9%)	0 (0.0%)	4 (1.8%)
Yearly Income (U.S. Dollars)					
≥ \$130,000	158 (20.1%)	9 (9.7%)	56 (16.5%)	12 (9.4%)	81 (35.5%)
≥ \$80,000, < \$130,000	161 (20.5%)	25 (26.9%)	70 (20.6%)	18 (14.2%)	48 (21.1%)
≥ \$50,000, < \$80,000	123 (15.6%)	25 (26.9%)	52 (15.3%)	15 (11.8%)	31 (13.6%)
≥ \$25,000, < \$50,000	180 (22.9%)	16 (17.2%)	88 (26.0%)	51 (40.2%)	25 (11.0%)
< \$25,000	153 (19.4%)	18 (19.4%)	69 (20.4%)	30 (23.6%)	36 (15.8%)
Missing	12 (1.5%)	0 (0.0%)	4 (1.2%)	1 (0.8%)	7 (3.1%)

Table 3. Statistics for Close Friendship Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. CF_Talk. In the past 6 months, how often on average have you talked with your friend, including in person or by phone call, video call, text message, email, or any other messaging system?	784	1.80	1.10	1-5	1.35	.93	0.29
+2. CF_Emo. How much have you felt that your friend would be there for you if you needed them for emotional support?	784	1.55	.83	1-5	1.61	2.27	0.63
+3. CF_Count. How much have you felt that you could count on your friend to do the things they say they will do?	784	1.73	.81	1-5	1.17	1.80	0.60
+4. CF_Close. How close have you felt toward your friend?	784	1.73	.80	1-5	1.07	1.20	0.60
+5. CF_Mut. How much have you felt that your friendship is mutual? By mutual, we mean you and your friend are both close and supportive of each other, rather than the friendship being one-sided.	784	1.46	.74	1-5	1.84	3.92	0.69
+6. CF_Share. How much personal, private, or sensitive information have you felt that you could share with your friend?	784	1.80	.79	1-5	1.03	1.34	0.56
+7. CF_Hon. How honest have you felt that your friend has been with you?	784	1.62	.70	1-5	1.03	1.07	0.61
8. CF_Acc. How much has your friend accepted you for who you are?	784	1.23	.49	1-3	2.01	3.27	0.48
+9. CF_Satis. How satisfied have you been with this friendship?	784	1.46	.67	1-5	1.65	3.77	0.70
++10. CF_OftAr. How often have you argued with your friend? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	784	1.69	.77	1-5	1.33	2.61	0.24

++11. CF_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your friend? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	784	1.67	.71	1-4	.69	-.25	0.23
++12. CF_Ign. How often have you and your friend had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?	784	1.73	.83	1-5	1.07	.91	0.42
13. CF_Res. To what extent have you and your friend been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	784	1.54	.79	1-5	1.84	4.21	0.44
++14. CF_Avoid. How often have you avoided talking with your friend about a problem in your friendship, even though something was wrong?	784	2.00	.96	1-5	.78	.11	0.45

+ Closeness subscale

++ Conflict subscale

Table 4. Descriptive Statistics for Social Life Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
1. SL_NumPl. How many people are in that group? Do not count yourself and the close friend we previously asked you about if that person is in your social group.	761	2.64	.94	1-5	.38	.18	0.11
+2. SL_Talk. In the past 6 months, how often on average have you talked with your friends, including in person or by phone call, video call, text message, email, or any other messaging system?	761	2.36	1.33	1-5	.70	-.72	0.34
+3. SL_Part. How often have you participated in social activities?	761	2.28	1.30	1-5	.64	-.81	0.33
4. SL_Mut. How mutual has the contact generally been between you and your friends? Select the best option below.	761	1.51	.88	1-5	1.96	3.70	0.31
5. SL_Acc. How much have your friends accepted you for who you are?	761	1.56	.72	1-5	1.25	1.75	0.43
6. SL_Lone. How lonely have you felt because you did not have anyone to socialize with?	761	2.76	1.28	1-5	.27	-.98	0.28
+7. SL_Satis. How satisfied have you been with your social life?	761	2.65	1.11	1-5	.45	-.51	0.51
++8. SL_OftAr. How often in general have you argued with your friends? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	761	1.66	.76	1-5	1.14	1.49	0.18
++9. SL_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your friends? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	760	1.80	.79	1-5	.80	.47	0.34
++10. SL_Ign. How often in general have you and your friends had emotional conflicts during which one or more of you ignore each other (give the “silent treatment”) or are less supportive or available than usual?	761	1.78	.87	1-5	1.09	1.10	0.42

++11. SL_Res. To what extent have you and your friends generally been able to resolve arguments or conflicts in a manner that is satisfying to both you and the friend(s) involved? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	761	1.76	.91	1-5	1.35	1.85	0.45
++12. SL_Avoid. How often in general have you avoided talking with one or more of your friends about a problem in your friendship, even though something was wrong?	761	2.18	1.06	1-5	.57	-.50	0.46

+ Participation subscale

++ Conflict subscale

Table 5. Descriptive Statistics for Romantic Relationship-In Relationship Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
1. RR_BrkUp. In the past 6 months, how much of the time have you and your romantic partner spent on a break or broken up? If you began your relationship within the past 6 months, base this on the time since the relationship began.	394	1.63	1.04	1-5	1.76	2.34	0.53
2. RR_Talk. How often on average have you talked with your romantic partner, including in person or by phone call, video call, text message, email, or any other messaging system?	394	1.21	0.69	1-5	4.04	17.08	0.41
+3. RR_Close. How close have you felt toward your romantic partner?	394	1.54	0.82	1-5	1.59	2.35	0.64
+4. RR_Mut. How much have you felt that your relationship is mutual? By mutual, we mean you and your romantic partner are both close and supportive of each other, rather than the relationship being one-sided.	394	1.70	1.00	1-5	1.50	1.62	0.77
+5. RR_Share. How much personal, private, or sensitive information have you felt that you could share with your romantic partner?	394	1.56	0.76	1-5	1.45	2.13	0.46
+6. RR_Hon. How honest have you felt that your romantic partner has been with you?	394	1.70	0.96	1-5	1.60	2.43	0.68
+7. RR_Sup. How supportive has your romantic partner been of you?	394	1.59	0.86	1-5	1.41	1.38	0.76
8. RR_Acc. How much has your romantic partner accepted you for who you are?	394	1.40	0.76	1-5	2.35	6.06	0.70
9. RR_Satis. How satisfied have you been with your relationship?	394	1.90	1.09	1-5	1.27	0.97	0.83
+10. RR_Phys. How satisfied have you been with your physical relationship with your partner?	394	1.69	1.02	1-5	1.65	2.32	0.58
++11. RR_OftAr. How often have you argued with your romantic partner? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	394	1.89	1.02	1-5	1.05	0.44	0.58

++12. RR_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your romantic partner? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	394	2.05	0.90	1-5	0.66	0.07	0.53
++13. RR_Ign. How often have you and your romantic partner had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?	394	2.15	1.03	1-5	0.67	-0.16	0.59
14. RR_Res. To what extent have you and your romantic partner been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	394	1.85	1.00	1-5	1.24	1.15	0.78
15. RR_Avoid. How often have you avoided talking with your romantic partner about a problem in your relationship, even though something was wrong?	394	2.31	1.04	1-5	0.51	-0.38	0.67
++16. RR_Tens. How much have you felt that your romantic relationship has caused tension in your other close relationships, including with your family and friends?	394	1.84	1.06	1-5	1.18	0.62	0.48

+ Closeness subscale

++ Conflict subscale

Table 6. Descriptive Statistics for Romantic Relationship-Dating Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. RR_OftDt. In the past 6 months, how often in general did you date or were you in brief relationships?	199	3.29	.96	1-5	-.68	.10	0.31
+2. RR_Potl. Of the people you have dated or had brief romantic relationships with, how much potential did they have to be longer-term partners?	199	3.16	1.20	1-5	-.01	-.92	0.29
+3. RR_Opprt. How much have you felt that you have had many opportunities to date people you are interested in?	199	2.97	1.19	1-5	.22	-.91	0.58
+4. RR_Optns. How much have you felt that you have had many options about whom to date?	199	3.02	1.29	1-5	.12	-1.10	0.51

+ Represent items retained in final scale

Table 7. Descriptive Statistics for Romantic Relationship-Single Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. RR_Long. How long has it been since your last relationship or since you dated?	520	2.97	1.60	1-5	.08	-1.53	0.14
++2. RR_S_Satis. How satisfied have you been with being single and not dating?	521	2.54	1.15	1-5	.55	-.47	0.51
++3. RR_Wish. How much time do you spend wishing you were in a romantic relationship?	521	3.00	.95	1-5	-.10	-.16	0.46
+4. RR_Opps. How much do you feel that if you wanted to date, you would have opportunities to date people you are interested in?	521	2.91	1.21	1-5	.02	-.88	0.49
+5. RR_Eas. How much do you feel that if you wanted to date, you could easily find someone to date?	520	3.32	1.33	1-5	-.34	-1.02	0.52
6. RR_Frnds. How many of your friends have been in romantic relationships in the past 6 months?	521	2.69	.97	1-5	.44	-.41	0.12
7. RR_Presd. How much have you felt pressured to date from friends and family?	521	1.69	.98	1-5	1.44	1.51	0.11
++8. RR_Lone. How lonely have you felt because you were not dating or in a romantic relationship?	521	2.61	1.18	1-5	.36	-.64	0.49

+ Options subscale

++ Isolation subscale

Table 8. Descriptive Statistics for Family Relationships Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
1. FR_Talk. In the past 6 months, how often on average have you talked with your parent/guardian/caregiver, including in person or by phone call, video call, text message, email, or any other messaging system?	785	1.34	.71	1-5	2.39	6.01	0.29
2. FR_Emo. How much have you felt that your parent/guardian/caregiver would be there for you if you needed them for emotional support?	785	1.69	1.03	1-5	1.50	1.47	0.75
+3. FR_Count. How much have you felt that you could count on your parent/guardian/caregiver to do the things they say they will do?	785	1.69	.95	1-5	1.50	1.92	0.70
+4. FR_Close. How close have you felt toward your parent/guardian/caregiver?	785	1.93	1.01	1-5	.96	.38	0.71
+5. FR_Share. How much personal, private, or sensitive information have you felt that you could share with your parent/guardian/caregiver?	785	2.54	1.03	1-5	.51	-.22	0.66
+6. FR_Hon. How honest have you felt that your parent/guardian/caregiver has been with you?	785	1.90	.89	1-5	.96	.83	0.68
+7. FR_Acc. How much has your parent/guardian/caregiver accepted you for who you are?	785	1.69	.93	1-5	1.43	1.72	0.73
++8. FR_OftAr. How often have you argued with your parent/guardian/caregiver? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	785	2.39	.99	1-5	.60	.14	0.40
++9. FR_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your parent/guardian/caregiver? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	785	2.29	.87	1-5	.27	-.20	0.51

++10. FR_Ign. How often have you and your parent/guardian/caregiver had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?	785	2.12	1.05	1-5	.65	-.22	0.53
+11. FR_Res. To what extent have you and your parent/guardian/caregiver been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	785	2.12	1.11	1-5	.89	.12	0.69
+12. FR_Avoid. How often have you avoided talking with your parent/guardian/caregiver about a problem in your relationship, even though something was wrong?	785	2.61	1.24	1-5	.32	-.90	0.67
13. FR_O_Emo. In the past 6 months, how much have you felt that other members of your immediate family would be there for you if you needed them for emotional support?	785	1.88	1.06	1-5	1.12	.47	0.67
+++14. FR_O_Share. How much personal, private, or sensitive information have you felt that you could share with other members of your immediate family?	785	2.70	1.00	1-5	.32	-.37	0.58
+++15. FR_O_Hon. How honest have you felt that other members of your immediate family have been with you?	785	2.17	.89	1-5	.67	.42	0.59
+++16. FR_O_Acc. How much have other members of your immediate family accepted you for who you are?	784	1.78	.93	1-5	1.18	.97	0.67
+++17. FR_O_Prob. How often have you had problems with other members of your immediate family, for example, serious conflicts or arguments?	785	2.27	.91	1-5	.39	-.17	0.43
+++18. FR_Stop. Have you purposefully stopped having any contact with an immediate family member due to serious tension or conflict?	785	1.99	1.34	1-5	1.23	.22	0.35

+ Immediate Family Closeness subscale

++ Immediate Family Conflict subscale

+++ Broader Family Relationship Quality subscale

Table 9. Descriptive Statistics for Neighborhood Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. NB_Space. In the past 6 months, how satisfied have you been with the amount of personal space you have had at that residence?	786	2.13	1.13	1-5	.89	.13	0.54
2. NB_Priv. How satisfied have you been with the amount of privacy you have had at that residence?	786	2.22	1.16	1-5	.73	-.26	0.52
++3. NB_Viol. How often have violent crimes been committed near that residence, that you are aware of? Examples include armed robbery, homicide, physical and sexual assault.	786	1.51	.75	1-5	1.59	2.84	0.37
++4. NB_NViol. How often have non-violent crimes been committed near that residence, that you are aware of? Examples include theft, possessing drugs, selling drugs, prostitution.	785	1.84	1.12	1-5	1.34	1.01	0.40
++5. NB_Unsafe. How often have your neighbors or the people you live with engaged in unsafe or illegal activities in your neighborhood or residence, that you are aware of?	785	1.52	1.02	1-5	2.05	3.29	0.41
+6. NB_Noise. How often has noise gotten in the way of your studying and/or sleep?	786	2.18	1.08	1-5	.62	-.37	0.37
7. NB_Know. How well have you known your neighbors and/or roommate(s)?	786	3.03	1.33	1-5	-.03	-1.10	0.02
+8. NB_PrNb. How often have you had problems with your neighbors or roommate(s)?	786	1.56	.88	1-5	1.78	3.09	0.35

+ Home Tranquility subscale

++ Safety Subscale

Table 10. Descriptive Statistics for Academic Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. AC_Grades. In the past 6 months, which best describes the grades you have received at that school?	738	1.71	.70	1-5	.73	.41	0.43
+2. AC_Probs. How often have you had serious academic problems, for example received failing grades, been placed on academic probation, needed to complete remedial coursework?	739	1.63	.90	1-5	1.40	1.42	0.47
3. AC_Relshps. To what extent have you had positive relationships with your instructors?	738	2.14	.92	1-5	.85	.54	0.55
+4. AC_Skills. How effective have your study skills been for meeting your school's demands?	738	2.48	1.01	1-5	.70	.19	0.64
++5. AC_Res. How often have the resources you needed to learn and progress in your program been available to you? These include course materials like books and other library resources, as well as meetings with instructors, tutoring or workshops on campus, and accommodations in classes.	738	1.89	.86	1-5	.75	.01	0.42
6. AC_Chall. To what extent has your schoolwork felt too challenging to manage?	738	2.77	1.01	1-5	.35	-.26	0.55
++7. AC_Satis. How satisfied in general have you been with your school?	738	2.43	.98	1-5	.62	.20	0.63
++8. AC_Prep. How well has your school prepared you to achieve your future educational and/or career goals?	738	2.44	.95	1-5	.53	.28	0.52

+ Competency subscale

++ Preparation subscale

Table 11. Descriptive Statistics for Employment-Working Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. WK_Safe. In the past 6 months, how safe have you felt at your job?	483	1.61	.82	1-5	1.44	2.14	.48
+2. WK_Manage. How manageable has the workload been at your job?	483	1.64	.81	1-5	1.21	1.03	.49
+3. WK_Perform. How adequately have you been able to perform all the duties of your job?	483	1.35	.57	1-4	1.50	1.60	.43
+4. WK_Resps. To what extent have you been given the responsibilities you wanted at work?	483	1.70	.83	1-5	1.07	.86	.52
+5. WK_Interf. How much has your work interfered with other parts of your life, for example, your education, hobbies, relationships?	483	2.29	1.04	1-5	.56	-.24	.40
++6. WK_Pay. Has the pay at your job been satisfactory?	483	2.63	1.12	1-5	.45	-.34	.40
++7. WK_Apprec. How much have you felt that your supervisors, co-workers, and/or customers have appreciated your work?	482	2.13	1.07	1-5	.78	-.01	.62
8. WK_NegFb. How often have you received negative feedback or evaluations at work?	482	1.68	.71	1-5	.89	.98	.32
++9. WK_SupRelship. To what extent have you had a positive relationship with your supervisor(s)?	482	1.73	.90	1-5	1.20	.95	.58
++10. WK_CoRelship. To what extent have you had positive relationships with your co-workers?	483	1.63	.77	1-4	1.21	1.25	.50
11. WK_Press. How much have you felt pressured to work, for example by your family for financial reasons?	482	2.56	1.37	1-5	.35	-1.13	.30
12. WK_FndJb. How much have you felt that if you wanted to quit your job, you could find a job somewhere else?	483	2.66	1.34	1-5	.30	-1.06	.01
13. WK_Secure. How much have you felt that your job was (or is) secure, in other words that the position will exist in the future?	482	1.96	1.08	1-5	1.09	.49	.33
14. Wk_Change. How often have you had to change jobs for any reason?	482	1.67	.82	1-5	1.06	.66	.20

+ Demands subscale

++ Rewards subscale

Table 12. Descriptive Statistics for Employment-Not Working Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. WK_NeedJb. In the past 6 months, how much have you needed a job?	499	2.62	1.28	1-5	.33	-.95	.51
+2. WK_WantJb. How much have you wanted a job?	500	3.14	1.22	1-5	-.18	-.83	.47
3. WK_Qualif. How many jobs were available that you would be qualified to do?	499	2.86	.87	1-5	-.13	-.03	.06
+4. WK_DiffObt. How difficult has it been to obtain a job?	499	2.31	1.32	1-5	.52	-1.03	.54

+ Represent items retained in final scale

Table 13. Descriptive Statistics for Finances Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. FI_Housing. In the past 6 months, to what extent have you been able to afford housing, food, and household items?	783	1.63	.91	1-5	1.52	1.92	0.71
2. FI_Clothes. To what extent have you been able to afford clothing?	785	1.75	1.03	1-5	1.36	1.15	0.76
+3. FI_Medical. To what extent have you been able to afford medical care?	783	1.73	1.13	1-5	1.53	1.32	0.67
+4. FI_Transprt. To what extent have you been able to afford transportation?	784	1.52	.92	1-5	1.89	2.98	0.65
+5. FI_Leisure. To what extent could you afford to do leisure activities, for example, go out to eat at a sit-down restaurant, or go to the movies or a concert? If you chose not to do leisure activities, answer based on whether you could afford to do them if you wanted to.	785	2.19	1.13	1-5	.65	-.49	0.73
6. FI_Vacation. To what extent could you afford to go on a vacation where you would stay in a hotel? If you have not gone on vacation in the past 6 months, answer based on whether you could afford to if you wanted to.	785	2.88	1.45	1-5	.10	-1.35	0.70
+7. FI_PayBills. To what extent have you or the person who supports you financially been able to pay your monthly bills?	785	1.50	.84	1-5	1.96	3.97	0.57
8. FI_Budget. To what extent have you had to budget?	784	3.05	1.17	1-5	.00	-.79	0.47
+9. FI_Tight. To what extent has money been “tight” just before getting paid, for example, you lived paycheck-to-paycheck or relied on payday loans?	784	2.32	1.34	1-5	.63	-.85	0.66
+10. FI_Gaps. To what extent have you experienced financial hardship during which you have had gaps in housing or access to food?	784	1.44	.86	1-5	2.09	4.07	0.56

+ Represent items retained in final scale

Table 14. Descriptive Statistics for Health-Self Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
+1. HS_MildIll. In the past 6 months, how many times have you gotten sick with mild illnesses, infections, or injuries, like the common cold, a stomach bug, or a mild sprain?	785	1.82	.79	1-5	1.05	1.69	.31
+2. HS_ChronCnds. Have you had chronic medical conditions or chronic injuries, NOT including mental health difficulties? Chronic medical conditions and chronic injuries include but are not limited to: heart conditions, high blood pressure, asthma, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, life-threatening allergies, Crohn's disease, thyroid disorders, sickle cell anemia, autoimmune disorders, cancer, arthritis, chronic pain, fibromyalgia, psoriasis, periodontal disease, sleep apnea, endometriosis, polycystic ovarian syndrome, lasting injuries like broken bones or torn ligaments.	785	1.36	.78	1-5	2.33	5.08	.46
+3. HS_Treatment. How many times have you gone to the doctor's office, an outpatient facility, or a hospital to receive treatment for chronic conditions/injuries?	167	2.56	1.27	1-5	.72	-.42	.43
+4. HS_PrevAct. How much have chronic health conditions/injuries prevented you from completing daily activities and/or attaining goals that are personally important to you?	167	2.26	1.00	1-5	.60	.08	.51
+5. HS_Threaten. To what extent do chronic health conditions/injuries threaten your life?	167	1.73	1.00	1-5	1.41	1.53	.40
6. HS_WghtDiff. How much have difficulties with your weight, including weighing more or less than recommended, interfered with your physical health and/or your daily activities?	785	1.87	1.16	1-5	1.16	.33	.37

++7. HS_Tobacco. How often have you used tobacco or nicotine products, for example cigarettes, e-cigarettes, cigars, dip, chew?	785	1.58	1.24	1-5	2.01	2.48	.20
++8. HS_DrnkDy. For the next question, please read and answer the question that best applies to you regarding alcohol consumption. For people who identify as men, how often have you had more than 4 drinks on any day? For people who identify as women, how often have you had more than 3 drinks on any day?	785	1.69	.93	1-4	1.14	.18	.17
++9. HS_DrnkWk. For the next question, please read and answer the question that best applies to you regarding alcohol consumption. For people who identify as men, how often have you had 14 or more drinks per week? For people who identify as women, how often have you had 7 or more drinks per week?	785	1.35	.79	1-5	2.64	7.02	.25
10. HS_Exercise. How often have you exercised on average?	785	3.22	1.41	1-5	-.12	-1.29	.08
+++11. HS_FallAslp. How often have you had trouble falling asleep within 30 minutes?	785	3.07	1.20	1-5	-.01	-.89	.28
+++12. HS_Wake. How often have you woken up in the middle of the night or early morning?	785	3.11	1.06	1-5	-.04	-.63	.32
+++13. HS_SlpQual. How would you rate your sleep quality overall?	785	2.66	.92	1-5	.31	-.06	.50
+14. HS_SideEff. How often have you had troublesome side effects from medications you regularly take for medical or psychiatric conditions?	785	1.48	.91	1-5	2.00	3.45	.47

+ Chronic Medical Concerns subscale

++ Substance Use subscale

+++ Sleep Quality subscale

Table 15. Descriptive Statistics for Health-Family Scale (Before Removal of Items)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
1. HF_Concern. In the past 6 months, how concerned have you been about the health of your immediate family members?	777	2.57	1.22	1-5	.36	-.83	.48
2. HF_MildIll. On average per person, how many times have members of your immediate family gotten sick with mild illnesses, infections, or injuries, like the common cold, a stomach bug, or a mild sprain?	777	2.02	.82	1-5	1.02	1.92	.36
+3. HF_Treatment. How many times has this family member gone to the doctor's office, an outpatient facility, or a hospital to receive treatment for this chronic health condition/injury?	439	2.54	1.17	1-5	.64	-.31	.43
+4. HF_PrevAct. How much has this chronic health condition/injury prevented this family member from completing daily activities?	439	2.44	1.09	1-5	.39	-.50	.54
+5. HF_Threaten. To what extent does this chronic health condition/injury threaten the life of this family member?	439	2.20	1.11	1-5	.78	-.02	.47
+6. HF_Care. Due to chronic health conditions/injuries, how often have you generally needed to provide care for members of your immediate family? By care, we mean helping this person with daily activities and responsibilities and/or supporting them financially.	439	1.85	1.01	1-5	1.01	.23	.54
+7. HF_PrevYou. How much have immediate family members' chronic health conditions/injuries prevented you from completing daily activities and/or attaining goals that are personally important to you?	439	1.48	.85	1-5	1.89	3.29	.53
++8. HF_Tobacco. How concerned have you been about use of tobacco or nicotine, for example cigarettes, e-cigarettes, cigars, dip, chew, etc., among members of your immediate family?	777	1.68	1.19	1-5	1.64	1.46	.39

++9. HF_Drinking. How concerned have you been about drinking problems among members of your immediate family?	777	1.63	1.13	1-5	1.81	2.21	.40
10. HF_SubstUse. How concerned have you been about problems with illegal or recreational substance use among members of your immediate family?	777	1.24	.75	1-5	3.49	12.14	.33
++11. HF_WghtDiff. How much have difficulties with weight interfered with the health and/or daily activities of members of your immediate family?	777	1.85	1.04	1-5	1.00	.07	.48
++12. HF_Exercise. How concerned have you been about lack of exercise among members of your immediate family?	777	2.10	1.14	1-5	.76	-.37	.47

+ Chronic Medical Concerns subscale

++ Health Behaviors subscale

Table 16. Inter-item Correlations in Close Friendship Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
+1. CF_Talk														
+2. CF_Emo	.37**													
+3. CF_Count	.30**	.57**												
+4. CF_Close	.44**	.61**	.46**											
+5. CF_Mut	.32**	.57**	.52**	.57**										
+6. CF_Share	.35**	.50**	.39**	.55**	.47**									
+7. CF_Hon	.20**	.42**	.42**	.42**	.51**	.49**								
8. CF_Acc	.13**	.32**	.28**	.33**	.41**	.39**	.41**							
+9. CF_Satis	.28**	.54**	.49**	.53**	.60**	.47**	.55**	.49**						
++10. CF_OftAr	-.17**	0.02	.13**	-0.04	.14**	0.02	.16**	.18**	.17**					
++11. CF_TypAr	-0.02	0.06	.12**	0.01	.09**	0.06	.15**	.11**	.12**	.39**				
++12. CF_Ign	-0.02	.16**	.27**	.12**	.27**	.10**	.29**	.21**	.32**	.45**	.36**			
13. CF_Res	.08*	.29**	.28**	.28**	.35**	.21**	.33**	.24**	.31**	.24**	.18**	.35**		
++14. CF_Avoid	0.02	.25**	.28**	.19**	.33**	.24**	.32**	.27**	.37**	.33**	.23**	.42**	.30**	

+ Closeness subscale

++ Conflict subscale

* $p < .05$

** $p < .01$

Table 17. Inter-item Correlations in Social Life Scale

	1	2	3	4	5	6	7	8	9	10	11	12
1. SL_NumPl												
+2. SL_Talk	.16**											
+3. SL_PartI	.22**	.48**										
4. SL_Mut	-0.03	.21**	.15**									
5. SL_Acc	0.00	.25**	.17**	.26**								
6. SL_Lone	0.03	.17**	.12**	.23**	.14**							
+7. SL_Satis	.16**	.34**	.41**	.23**	.30**	.39**						
++8. SL_OftAr	-.09*	-.12**	-.14**	0.03	.15**	0.00	-0.04					
++9. SL_TypAr	-0.06	0.01	0.03	.12**	.19**	0.06	.10**	.41**				
++10. SL_Ign	0.00	0.00	0.02	.15**	.27**	.07*	.13**	.51**	.43**			
++11. SL_Res	0.02	.12**	.08*	.15**	.28**	.11**	.24**	.28**	.39**	.48**		
++12. SL_Avoid	0.03	.07*	0.03	.17**	.33**	.14**	.25**	.32**	.39**	.54**	.45**	

167

+ Participation subscale

++ Conflict subscale

* $p < .05$

** $p < .01$

Table 18. Inter-item Correlations in Romantic Relationship-In Relationship Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. RR_BrkUp																
2. RR_Talk	.40**															
+3. RR_Close	.35**	.39**														
+4. RR_Mut	.47**	.39**	.66**													
+5. RR_Share	.21**	.23**	.54**	.45**												
+6. RR_Hon	.38**	.33**	.51**	.60**	.42**											
+7. RR_Sup	.44**	.34**	.58**	.67**	.41**	.65**										
8. RR_Acc	.39**	.32**	.49**	.61**	.37**	.59**	.70**									
9. RR_Satis	.47**	.32**	.61**	.72**	.48**	.62**	.66**	.60**								
+10. RR_Phys	.27**	.27**	.50**	.56**	.37**	.42**	.45**	.48**	.64**							
++11. RR_OftAr	.37**	.15**	.24**	.39**	.14**	.32**	.47**	.39**	.52**	.26**						
++12. RR_TypArg	.27**	.14**	.25**	.31**	.15**	.35**	.39**	.31**	.43**	.24**	.57**					
++13. RR_Ign	.36**	.17**	.29**	.41**	.21**	.37**	.44**	.36**	.49**	.25**	.59**	.58**				
14. RR_Res	.49**	.26**	.51**	.63**	.34**	.58**	.62**	.63**	.70**	.48**	.53**	.46**	.55**			
15. RR_Avoid	.35**	.32**	.45**	.53**	.34**	.51**	.50**	.48**	.59**	.44**	.49**	.43**	.50**	.55**		
++16. RR_Tens	.27**	.20**	.25**	.38**	.11*	.31**	.38**	.35**	.42**	.31**	.40**	.40**	.38**	.42**	.30**	

+ Closeness subscale

++ Conflict subscale

* $p < .05$

** $p < .01$

Table 19. Inter-item Correlations in Romantic Relationship-Dating Scale

	1	2	3	4
+1. RR_OftDt				
+2. RR_Potl	.20**			
+3. RR_Opprt	.26**	.28**		
+4. RR_Optns	.25**	.19**	.62**	

+ Represent items retained in final scale

** $p < .01$

Table 20. Inter-item Correlations in Romantic Relationship-Single Scale

	1	2	3	4	5	6	7	8
+1. RR_Long								
++2. RR_S_Satis	.06							
+3. RR_Wish	.00	.57**						
+4. RR_Opps	.20**	.31**	.19**					
+5. RR_Eas	.23**	.34**	.25**	.71**				
6. RR_Frnds	-.04	.09*	.09*	.08	.00			
7. RR_Presd	.10*	.01	.02	.01	.04	.14**		
++8. RR_Lone	-.05	.58**	.64**	.23**	.28**	.18**	.11*	

+ Options subscale

++ Isolation subscale

* $p < .05$

** $p < .01$

Table 21. Inter-item Correlations in Family Relationships Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. FR_Talk																		
2. FR_Emo	.36**																	
+3. FR_Count	.30**	.69**																
+4. FR_Close	.34**	.69**	.62**															
+5. FR_Share	.27**	.61**	.52**	.66**														
+6. FR_Hon	.27**	.58**	.60**	.61**	.55**													
+7. FR_Acc	.25**	.65**	.57**	.62**	.58**	.55**												
++8. FR_OftAr	-.08*	.22**	.26**	.25**	.23**	.31**	.29**											
++9. FR_TypAr	.13**	.38**	.38**	.35**	.32**	.34**	.42**	.45**										
+++10. FR_Ign	.07*	.39**	.40**	.36**	.30**	.37**	.40**	.45**	.44**									
+11. FR_Res	.21**	.59**	.55**	.56**	.46**	.49**	.57**	.38**	.49**	.51**								
+12. FR_Avoid	.16**	.51**	.47**	.54**	.49**	.50**	.57**	.38**	.41**	.49**	.55**							
13. FR_O_Emo	.20**	.61**	.49**	.47**	.44**	.44**	.52**	.18**	.24**	.32**	.44**	.42**						
+++14. FR_O_Share	.18**	.45**	.36**	.43**	.62**	.37**	.38**	.17**	.22**	.21**	.34**	.39**	.63**					
+++15. FR_O_Hon	.18**	.41**	.39**	.37**	.39**	.50**	.38**	.23**	.23**	.26**	.38**	.36**	.61**	.59**				
+++16. FR_O_Acc	.19**	.50**	.46**	.44**	.41**	.42**	.65**	.24**	.28**	.30**	.43**	.45**	.70**	.52**	.61**			
+++17. FR_O_Prob	.09*	.24**	.25**	.24**	.19**	.22**	.25**	.37**	.30**	.27**	.28**	.29**	.34**	.25**	.32**	.36**		
+++18. FR_Stop	.13**	.24**	.28**	.18**	.18**	.23**	.22**	.11**	.18**	.25**	.22**	.24**	.31**	.22**	.27**	.29**	.37**	

171

+ Immediate Family Closeness subscale

++ Immediate Family Conflict subscale

+++ Broader Family Relationship Quality subscale

* $p < .05$

** $p < .01$

Table 22. Inter-item Correlations in Neighborhood Scale

	1	2	3	4	5	6	7	8
+1. NB_Space								
2. NB_Priv	.85**							
++3. NB_Viol	.14**	.12**						
++4. NB_NViol	.16**	.15**	.62**					
++5. NB_Unsafe	.18**	.16**	.39**	.52**				
+6. NB_Noise	.30**	.28**	.15**	.19**	.20**			
7. NB_Know	.10**	.11**	-.08*	-.09**	.01	.08*		
+8. NB_PrNb	.28**	.28**	.20**	.24**	.27**	.27**	-.09**	

+ Home Tranquility subscale

++ Safety Subscale

* $p < .05$

** $p < .01$

Table 23. Inter-item Correlations in Academic Scale

	1	2	3	4	5	6	7	8
+1. AC_Grades								
+2. AC_Probs	.46**							
3. AC_Relshps	.28**	.33**						
+4. AC_Skills	.45**	.42**	.48**					
++5. AC_Res	.15**	.21**	.30**	.26**				
6. AC_Chall	.28**	.31**	.37**	.47**	.30**			
++7. AC_Satis	.23**	.28**	.40**	.45**	.44**	.44**		
++8. AC_Prep	.17**	.22**	.36**	.39**	.33**	.34**	.59**	

+ Competency subscale

++ Preparation subscale

** $p < .01$

Table 24. Inter-item Correlations in Employment-Working Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
+1. WK_Safe														
+2. WK_Manage	.39**													
+3. WK_Perform	.29**	.40**												
+4. WK_Resps	.35**	.40**	.47**											
+5. WK_Interf	.31**	.37**	.15**	.23**										
++6. WK_Pay	.34**	.28**	.15**	.27**	.22**									
++7. WK_Apprec	.36**	.36**	.29**	.44**	.29**	.46**								
8. WK_NegFb	.22**	.17**	.21**	.21**	.23**	.09*	.24**							
++9. WK_SupRelship	.33**	.34**	.27**	.39**	.31**	.33**	.64**	.31**						
++10. WK_CoRelship	.31**	.29**	.29**	.33**	.23**	.19**	.46**	.27**	.48**					
11. WK_Press	.19**	.19**	.08	.09	.31**	.10*	.23**	.18**	.22**	.15**				
12. WK_FndJb	-.08	-.07	.13**	.06	-.02	-.02	-.04	-.07	-.11*	.03	.07			
13. WK_Secure	.14**	.16**	.23**	.28**	.00	.20**	.31**	.09*	.28**	.24**	.05	.15**		
14. Wk_Change	.13**	.10*	.02	.07	.05	.13**	.11*	.15**	.12*	.10*	.14**	.02	.18**	

+ Demands subscale

++ Rewards subscale

* $p < .05$

** $p < .01$

Table 25. Inter-item Correlations in Employment-Not Working Scale

	1	2	3	4
+1. WK_NeedJb				
+2. WK_WantJb	.53**			
3. WK_Qualif	-.01	-.08		
+4. WK_DiffObt	.43**	.41**	.22**	

+ Represent items retained in final scale

** $p < .01$

Table 26. Inter-item Correlations in Finances Scale

	1	2	3	4	5	6	7	8	9	10
+1. FI_Housing										
2. FI_Clothes	.73**									
+3. FI_Medical	.63**	.64**								
+4. FI_Transprt	.61**	.61**	.57**							
+5. FI_Leisure	.52**	.60**	.49**	.52**						
6. FI_Vacation	.49**	.58**	.48**	.47**	.72**					
+7. FI_PayBills	.55**	.47**	.45**	.47**	.40**	.39**				
8. FI_Budget	.25**	.32**	.28**	.25**	.44**	.46**	.24**			
+9. FI_Tight	.46**	.50**	.46**	.39**	.55**	.54**	.43**	.50**		
+10. FI_Gaps	.47**	.47**	.42**	.45**	.37**	.36**	.48**	.26**	.49**	

+ Represent items retained in final scale

** $p < .01$

Table 27. Inter-item Correlations in Health-Self Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
+1. HS_MildIll														
+2. HS_ChronCnds	.25**													
+3. HS_Treatment	0.09	.45**												
+4. HS_PrevAct	.27**	.45**	.39**											
+5. HS_Threaten	.16*	.43**	.28**	.33**										
6. HS_WghtDiff	.13**	.10**	.22**	.18*	.33**									
++7. HS_Tobacco	.08*	0.02	0.13	0.06	0.01	0.06								
++8. HS_DrnkDy	.09*	0.01	0.14	.17*	0.00	0.04	.38**							
++9. HS_DrnkWk	.10**	0.04	.18*	.17*	0.03	0.05	.31**	.72**						
10. HS_Exercise	0.02	-0.01	0.05	0.13	.17*	.15**	0.04	-.10**	-.09**					
+++11. HS_FallAslp	.10**	.14**	0.11	0.13	-0.02	.09*	.07*	0.01	0.03	.11**				
+++12. HS_Wake	.09*	.12**	0.14	.30**	0.13	.08*	0.05	-0.02	-0.03	.08*	.40**			
+++13. HS_SlpQual	.14**	.19**	.16*	.30**	.19*	.16**	.07*	0.02	0.04	.11**	.57**	.41**		
+14. HS_SideEff	.25**	.33**	.33**	.28**	.39**	.21**	0.07	0.03	0.04	0.03	.17**	.16**	.19**	

+ Chronic Medical Concerns subscale

++ Substance Use subscale

+++ Sleep Quality subscale

* $p < .05$

** $p < .01$

Table 28. Inter-item Correlations in Health-Family Scale

	1	2	3	4	5	6	7	8	9	10	11	12
1. HF_Concern												
2. HF_MildIll	.31**											
+3. HF_Treatment	.31**	.27**										
+4. HF_PrevAct	.32**	.26**	.49**									
+5. HF_Threaten	.36**	.19**	.46**	.52**								
+6. HF_Care	.32**	.25**	.39**	.50**	.40**							
+7. HF_PrevYou	.25**	.15**	.28**	.44**	.38**	.55**						
++8. HF_Tobacco	.18**	.14**	.12*	.11*	.12*	.19**	.22**					
++9. HF_Drinking	.21**	.13**	.07	.17**	.11*	.19**	.24**	.45**				
10. HF_SubstUse	.10**	.14**	.04	.10*	.05	.14**	.21**	.37**	.37**			
++11. HF_WghtDiff	.31**	.23**	.15**	.24**	.18**	.24**	.28**	.24**	.28**	.23**		
++12. HF_Exercise	.32**	.20**	.12*	.24**	.19**	.21**	.27**	.27**	.26**	.17**	.62**	

178

+ Chronic Medical Concerns subscale

++ Health Behaviors subscale

* $p < .05$

** $p < .01$

Table 29. Close Friendship Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3-14
Eigenvalues	5.1	2.1	<1.0
	Model		
Statistic	One-factor	Two-factor	Three-factor
χ^2_M	674.824, $p = 0.0000$	152.361, $p = 0.0000$	85.989, $p = 0.0021$
df_M	77	64	52
RMSEA [90% CI]	0.100 [0.093-0.106]	0.042 [0.033, 0.051]	0.029 [0.017, 0.039]
CFI	0.782	0.968	0.988
TLI	0.743	0.954	0.978
SRMR	0.093	0.027	0.018
Two-factor Model Factor Loadings (Completely Standardized)			
	1	2	
+1. CF_Talk	0.552*	-0.244*	
+2. CF_Emo	0.764*	-0.005	
+3. CF_Count	0.596*	0.170*	
+4. CF_Close	0.804*	-0.098*	
+5. CF_Mut	0.707*	0.177*	
+6. CF_Share	0.678*	-0.010	
+7. CF_Hon	0.546*	0.269*	
8. CF_Acc	0.425*	0.236*	
+9. CF_Satis	0.657*	0.258*	
++10. CF_OftAr	-0.161	0.698*	
++11. CF_TypAr	-0.076	0.500*	
++12. CF_Ign	0.034	0.696*	
13. CF_Res	0.265*	0.371*	
++14. CF_Avoid	0.192*	0.515*	

+ Closeness subscale

++ Conflict subscale

* $p < .05$

Table 30. Close Friendship Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)

Statistic	Two-factor	
χ^2_M	102.594, $p = 0.0000$	
df_M	43	
RMSEA [90% CI]	0.042 [0.032, 0.053]	
CFI	0.976	
TLI	0.963	
SRMR	0.023	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+1. CF_Talk	0.527*	-0.236*
+2. CF_Emo	0.769*	-0.008
+3. CF_Count	0.623*	0.168*
+4. CF_Close	0.795*	-0.104*
+5. CF_Mut	0.728*	0.165*
+6. CF_Share	0.673*	-0.013
+7. CF_Hon	0.574*	0.251*
+9. CF_Satis	0.684*	0.247*
++10. CF_OftAr	-0.078	0.685*
++11. CF_TypAr	-0.014	0.494*
++12. CF_Ign	0.121	0.676*
++14. CF_Avoid	0.255*	0.500*

+ Closeness subscale

++ Conflict subscale

* $p < .05$

Table 31. Social Life Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3	4-12
Eigenvalues	3.2	2.1	1.1	<1.0
	Model			
Statistic	One-factor	Two-factor	Three-factor	
χ^2_M	735.130, $p = 0.0000$	164.209, $p = 0.0000$	89.700, $p = 0.0000$	
df_M	54	43	33	
RMSEA [90% CI]	0.129 [0.121-0.137]	0.061 [0.051, 0.071]	0.048 [0.036, 0.059]	
CFI	0.564	0.922	0.964	
TLI	0.467	0.881	0.927	
SRMR	0.112	0.035	0.025	
Two-factor Model Factor Loadings (Completely Standardized)				
	1	2		
1. SL_NumPl	0.248*	-0.049		
+2. SL_Talk	0.620*	-0.011		
+3. SL_Part	0.632*	-0.031		
4. SL_Mut	0.312*	0.188*		
5. SL_Acc	0.344*	0.361*		
6. SL_Lone	0.352*	0.115*		
+7. SL_Satis	0.647*	0.182*		
++8. SL_OftAr	-0.242*	0.614*		
++9. SL_TypAr	-0.003	0.586*		
++10. SL_Ign	-0.015	0.786*		
++11. SL_Res	0.172*	0.601*		
++12. SL_Avoid	0.143*	0.669*		

+ Participation subscale

++ Conflict subscale

* $p < .05$

**Table 32. Social Life Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings
(After Item Removal)**

Statistic	Two-factor	
χ^2_M	57.385, $p = 0.0000$	
df_M	13	
RMSEA [90% CI]	0.067 [0.050, 0.085]	
CFI	0.961	
TLI	0.916	
SRMR	0.024	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+2. SL_Talk	0.644*	0.001
+3. SL_Part	0.711*	-0.009
+7. SL_Satis	0.564*	0.191*
++8. SL_OftAr	-0.240*	0.605*
++9. SL_TypAr	0.003	0.586*
++10. SL_Ign	-0.021	0.795*
++11. SL_Res	0.157*	0.608*
++12. SL_Avoid	0.103*	0.666*

+ Participation subscale

++ Conflict subscale

* $p < .05$

**Table 33. Romantic Relationship-In Relationship Scale: Exploratory Factor Analysis
Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)**

Factors	1	2	3-16
Eigenvalues	7.5	1.6	<1.0
	Model		
Statistic	One-factor	Two-factor	Three-factor
χ^2_M	393.667, $p = 0.0000$	161.758, $p = 0.0000$	128.255, $p = 0.0001$
df_M	104	89	75
RMSEA [90% CI]	0.084 [0.075-0.093]	0.046 [0.034, 0.057]	0.042 [0.030, 0.055]
CFI	0.865	0.966	0.975
TLI	0.845	0.954	0.960
SRMR	0.068	0.031	0.027
Two-factor Model Factor Loadings (Completely Standardized)			
	1	2	
1. RR_BrkUp	0.404*	0.213*	
2. RR_Talk	0.490*	-0.081	
+3. RR_Close	0.856*	-0.178*	
+4. RR_Mut	0.845*	0.000	
+5. RR_Share	0.684*	-0.206*	
+6. RR_Hon	0.702*	0.055	
+7. RR_Sup	0.705*	0.154*	
8. RR_Acc	0.686*	0.095	
9. RR_Satis	0.730*	0.203*	
+10. RR_Phys	0.695*	-0.061	
++11. RR_OftAr	0.004	0.795*	
++12. RR_TypArg	-0.020	0.728*	
++13. RR_Ign	0.057	0.729*	
14. RR_Res	0.537*	0.374*	
15. RR_Avoid	0.440*	0.342*	
++16. RR_Tens	0.190*	0.405*	

+ Closeness subscale

++ Conflict subscale

* $p < .05$

Table 34. Romantic Relationship-In Relationship Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)

Statistic	Two-factor	
χ^2_M	45.453, $p = 0.0105$	
df_M	26	
RMSEA [90% CI]	0.044 [0.021, 0.064]	
CFI	0.983	
TLI	0.970	
SRMR	0.024	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+3. RR_Close	0.841*	-0.112
+4. RR_Mut	0.805*	0.072
+5. RR_Share	0.666*	-0.152
+6. RR_Hon	0.652*	0.12
+7. RR_Sup	0.663*	0.229*
+10. RR_Phys	0.631*	-0.002
++11. RR_OftAr	0.001	0.781*
++12. RR_TypArg	-0.02	0.746*
++13. RR_Ign	0.061	0.725*
++16. RR_Tens	0.167*	0.440*

+ Closeness subscale

++ Conflict subscale

* $p < .05$

Table 35. Romantic Relationship-Dating Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings

Factors	1	2-4
Eigenvalues	1.9	<1.0
	Model	
Statistic	One-factor	
χ^2_M	3.572, $p = 0.1677$	
df_M	2	
RMSEA [90% CI]	0.063 [0.000-0.167]	
CFI	0.984	
TLI	0.953	
SRMR	0.030	
One-factor Model Factor Loadings (Completely Standardized)		
	1	
1. RR_OfDt	0.321*	
2. RR_Potl	0.315*	
3. RR_Opprt	0.853*	
4. RR_Optns	0.723*	

* $p < .05$

Table 36. Romantic Relationship-Single Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3	4-8
Eigenvalues	2.7	1.4	1.1	<1.0

Statistic	Model		
	One-factor	Two-factor	Three-factor
χ^2_M	375.538, $p = 0.0000$	45.003, $p = 0.0000$	716.815, $p = 0.0000$
df_M	20	13	7
RMSEA [90% CI]	0.185 [0.169-0.201]	0.069 [0.047, 0.091]	0.441 [0.414, 0.469]
CFI	0.619	0.966	0.239
TLI	0.467	0.926	0.000
SRMR	0.101	0.032	0.021

Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+1. RR_Long	-0.122*	0.304*
++2. RR_S_Satis	0.662*	0.144*
++3. RR_Wish	0.789*	-0.019
+4. RR_Opps	-0.014	0.805*
+5. RR_Eas	0.017	0.875*
6. RR_Frnds	0.180*	-0.033
7. RR_Presd	0.065	0.011
++8. RR_Lone	0.822*	0.003

+ Options subscale

++ Isolation subscale

* $p < .05$

Table 37. Romantic Relationship-Single Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)

Statistic	Two-factor	
χ^2_M	6.175, $p = 0.1865$	
df_M	4	
RMSEA [90% CI]	0.032 [0.000, 0.079]	
CFI	0.997	
TLI	0.991	
SRMR	0.011	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+1. RR_Long	-0.117*	0.302*
++2. RR_S_Satis	0.670*	0.138*
++3. RR_Wish	0.805*	-0.031
+4. RR_Opps	-0.015	0.819*
+5. RR_Eas	0.032	0.856*
++8. RR_Lone	0.807*	0.004

+ Options subscale

++ Isolation subscale

* $p < .05$

Table 38. Family Relationships Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3	4	5-18
Eigenvalues	7.7	1.6	1.4	1.0	<1.0
	Model				
Statistic	One-factor	Two-factor	Three-factor		
χ^2_M	1569.321, <i>p</i> = 0.0000	1123.532, <i>p</i> = 0.0000	687.974, <i>p</i> = 0.0000		
<i>df</i> _M	135	118	102		
RMSEA [90% CI]	0.116 [0.111-0.122]	0.104 [0.099, 0.110]	0.086 [0.080, 0.092]		
CFI	0.753	0.827	0.899		
TLI	0.720	0.776	0.849		
SRMR	0.075	0.059	0.034		
	Three-factor Model Factor Loadings (Completely Standardized)				
	1	2	3		
1. FR_Talk	0.449*	-0.06	-0.210*		
2. FR_Emo	0.803*	0.064	-0.047		
+3. FR_Count	0.764*	-0.005	0.062		
+4. FR_Close	0.921*	-0.12	-0.016		
+5. FR_Share	0.720*	0.045	-0.064		
+6. FR_Hon	0.676*	0.048	0.088		
+7. FR_Acc	0.647*	0.147	0.118		
++8. FR_OftAr	0.249	0.014	0.635*		
++9. FR_TypAr	0.488*	-0.09	0.481*		
++10. FR_Ign	0.435*	-0.005	0.498*		
+11. FR_Res	0.669*	-0.004	0.317*		
+12. FR_Avoid	0.575*	0.073	0.297*		
13. FR_O_Emo	0.016	0.854*	-0.084		
+++14. FR_O_Share	0.065	0.679*	-0.126*		
+++15. FR_O_Hon	-0.083	0.807*	0.007		
+++16. FR_O_Acc	0.005	0.804*	0.04		

+++17. FR_O_Prob	-0.026	0.396*	0.329*
+++18. FR_Stop	0.022	0.334*	0.127*

+ Immediate Family Closeness subscale

++ Immediate Family Conflict subscale

+++ Broader Family Relationship Quality subscale

* $p < .05$

Table 39. Family Relationships Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)

Statistic	Three-factor		
χ^2_M	527.325, $p = 0.0000$		
df_M	63		
RMSEA [90% CI]	0.097 [0.089, 0.105]		
CFI	0.894		
TLI	0.823		
SRMR	0.034		
Three-factor Model Factor Loadings (Completely Standardized)			
	1	2	3
+3. FR_Count	0.717*	0.116*	-0.016
+4. FR_Close	0.951*	-0.023	-0.172*
+5. FR_Share	0.813*	-0.168	0.006
+6. FR_Hon	0.664*	0.057	0.076
+7. FR_Acc	0.707*	0.129*	0.052
++8. FR_OftAr	0.203	0.522*	0.078
++9. FR_TypAr	0.399*	0.471*	-0.029
++10. FR_Ign	0.376*	0.513*	0.008
+11. FR_Res	0.632*	0.341*	-0.014
+12. FR_Avoid	0.596*	0.265*	0.046
+++14. FR_O_Share	0.255*	-0.243*	0.574*
+++15. FR_O_Hon	-0.003	-0.076	0.829*
+++16. FR_O_Acc	0.191*	0.028	0.620*
+++17. FR_O_Prob	-0.017	0.308*	0.395*
+++18. FR_Stop	0.025	0.154*	0.328*

+ Immediate Family Closeness subscale

++ Immediate Family Conflict subscale

+++ Broader Family Relationship Quality subscale

* $p < .05$

Table 40. Neighborhood Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3	4-8
Eigenvalues	2.7	1.6	1.0	<1.0
Model				
Statistic	One-factor	Two-factor		
χ^2_M	567.750, $p = 0.0000$	50.770, $p = 0.0000$		
df_M	20	13		
RMSEA [90% CI]	0.187 [0.174-0.200]	0.061 [0.044, 0.079]		
CFI	0.606	0.973		
TLI	0.448	0.941		
SRMR	0.144	0.032		
Two-factor Model Factor Loadings (Completely Standardized)				
	1	2		
+1. NB_Space	0.932*	0.005		
2. NB_Priv	0.908*	-0.008		
++3. NB_Viol	0.005	0.696*		
++4. NB_NViol	-0.011	0.889*		
++5. NB_Unsafe	0.076*	0.574*		
+6. NB_Noise	0.287*	0.178*		
7. NB_Know	0.140*	-0.128*		
+8. NB_PrNb	0.258*	0.244*		

+ Home Tranquility subscale

++ Safety Subscale

* $p < .05$

Table 41. Neighborhood Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)

Statistic	Two-factor	
χ^2_M	2.220, $p = 0.6953$	
df_M	4	
RMSEA [90% CI]	0.000 [0.000-0.041]	
CFI	1.000	
TLI	1.000	
SRMR	0.008	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+1. NB_Space	-0.042	0.560*
++3. NB_Viol	0.660*	0.041
++4. NB_NViol	0.927*	-0.009*
++5. NB_Unsafe	0.489*	0.207*
+6. NB_Noise	0.004	0.536*
+8. NB_PrNb	0.075	0.494*

+ Home Tranquility subscale

++ Safety Subscale

* $p < .05$

Table 42. Academic Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3-8
Eigenvalues	3.5	1.2	<1.0
	Model		
Statistic	One-factor	Two-factor	Three-factor
χ^2_M	210.693, $p = 0.0000$	30.320, $p = 0.0042$	9.939, $p = 0.1920$
df_M	20	13	7
RMSEA [90% CI]	0.114 [0.100-0.128]	0.042 [0.023, 0.062]	0.024 [0.000, 0.055]
CFI	0.852	0.987	0.998
TLI	0.793	0.971	0.991
SRMR	0.061	0.018	0.010
	Two-factor Model Factor Loadings (Completely Standardized)		
	1	2	
+1. AC_Grades	0.718*	-0.108	
+2. AC_Probs	0.632*	0.005	
3. AC_Relshps	0.361*	0.330*	
+4. AC_Skills	0.583*	0.259*	
++5. AC_Res	0.034	0.494*	
6. AC_Chall	0.324*	0.367*	
++7. AC_Satis	0.002	0.831*	
++8. AC_Prep	-0.014	0.700*	

+ Competency subscale

++ Preparation subscale

* $p < .05$

**Table 43. Academic Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings
(After Item Removal)**

Statistic	Two-factor	
χ^2_M	4.081, $p = 0.3952$	
df_M	4	
RMSEA [90% CI]	0.005 [0.000-0.056]	
CFI	1.000	
TLI	1.000	
SRMR	0.009	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+1. AC_Grades	0.739*	-0.02
+2. AC_Probs	0.593*	0.104
+4. AC_Skills	0.488*	0.346*
++5. AC_Res	0.033	0.488*
++7. AC_Satis	-0.004	0.862*
++8. AC_Prep	0.001	0.682*

+ Competency subscale

++ Preparation subscale

* $p < .05$

Table 44. Employment-Working Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3	4	5-14
Eigenvalues	4.1	1.3	1.1	1.1	<1.0
	Model				
Statistic	One-factor	Two-factor	Three-factor		
χ^2_M	284.416, <i>p</i> = 0.0000	212.912, <i>p</i> = 0.0000	127.778, <i>p</i> = 0.0000		
<i>df</i> _M	77	64	52		
RMSEA [90% CI]	0.075 [0.066- 0.084]	0.069 [0.059, 0.080]	0.055 [0.043, 0.067]		
CFI	0.825	0.874	0.936		
TLI	0.793	0.821	0.888		
SRMR	0.058	0.049	0.036		
Two-factor Model Factor Loadings (Completely Standardized)					
	1	2			
+1. WK_Safe	0.236	0.380*			
+2. WK_Manage	0.384*	0.302			
+3. WK_Perform	0.745*	-0.003			
+4. WK_Resps	0.508*	0.276*			
+5. WK_Interf	0.077	0.382*			
++6. WK_Pay	0.01	0.489*			
++7. WK_Apprec	0.000	0.806*			
8. WK_NegFb	0.099	0.315*			
++9. WK_SupRelship	-0.036	0.794*			
++10. WK_CoRelship	0.134	0.508*			
11. WK_Press	-0.027	0.315*			
12. WK_FndJb	0.225*	-0.185*			
13. WK_Secure	0.177*	0.258*			
14. Wk_Change	-0.014	0.186*			

+ Demands subscale

++ Rewards subscale

* $p < .05$

Table 45. Employment-Working Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)

Statistic	Two-factor	
χ^2_M	72.525, $p = 0.0000$	
df_M	19	
RMSEA [90% CI]	0.076 [0.058-0.095]	
CFI	0.937	
TLI	0.881	
SRMR	0.036	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+1. WK_Safe	0.463*	0.144
+2. WK_Manage	0.668*	0.001
+3. WK_Perform	0.670*	-0.092
+4. WK_Resps	0.565*	0.136
+5. WK_Interf	0.318	0.159
++6. WK_Pay	0.102	0.430*
++7. WK_Apprec	-0.016	0.874*
++9. WK_SupRelship	0.056	0.713*
++10. WK_CoRelship	0.194	0.427*

+ Demands subscale

++ Rewards subscale

* $p < .05$

Table 46. Employment-Not Working Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3-4
Eigenvalues	1.9	1.1	<1.0
Model			
Statistic	One-factor		
χ^2_M	43.973, $p = 0.0000$		
df_M	2		
RMSEA [90% CI]	0.205 [0.155-0.260]		
CFI	0.847		
TLI	0.542		
SRMR	0.061		
One-factor Model Factor Loadings (Completely Standardized)			
	1		
+1. WK_NeedJb	0.746*		
+2. WK_WantJb	0.711*		
3. WK_Qualif	0.020		
+4. WK_DiffObt	0.578*		

+ Represent items retained in final scale

* $p < .05$

Table 47. Employment-Not Working Scale: Exploratory Factor Analysis Factor Loadings

(After Item Removal)

One-factor Model Factor Loadings (Completely Standardized)	
	1
1. WK_NeedJb	0.746*
2. WK_WantJb	0.713*
4. WK_DiffObt	0.575*

* $p < .05$

Table 48. Finances Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3-10
Eigenvalues	5.3	1.1	<1.0
	Model		
Statistic	One-factor	Two-factor	Three-factor
χ^2_M	354.615, $p = 0.0000$	124.162, $p = 0.0000$	36.205, $p = 0.0066$
df_M	35	26	18
RMSEA [90% CI]	0.108 [0.098-0.118]	0.069 [0.057, 0.082]	0.036 [0.018, 0.053]
CFI	0.865	0.958	0.992
TLI	0.826	0.928	0.981
SRMR	0.060	0.032	0.014
One-factor Model Factor Loadings (Completely Standardized)			
	1		
+1. FI_Housing	0.797*		
2. FI_Clothes	0.835*		
+3. FI_Medical	0.740*		
+4. FI_Transprt	0.722*		
+5. FI_Leisure	0.736*		
6. FI_Vacation	0.714*		
+7. FI_PayBills	0.614*		
8. FI_Budget	0.449*		
+9. FI_Tight	0.654*		
+10. FI_Gaps	0.591*		

+ Represent items retained in final scale

* $p < .05$

**Table 49. Finances Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings
(After Item Removal)**

Statistic	One-factor
χ^2_M	82.073, $p = 0.0000$
df_M	14
RMSEA [90% CI]	0.079 [0.063, 0.096]
CFI	0.941
TLI	0.911
SRMR	0.039
One-factor Model Factor Loadings (Completely Standardized)	
	1
1. FI_Housing	0.805*
3. FI_Medical	0.747*
4. FI_Transprt	0.740*
5. FI_Leisure	0.672*
7. FI_PayBills	0.653*
9. FI_Tight	0.631*
10. FI_Gaps	0.619*

* $p < .05$

Table 50. Health-Self Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3	4	5-14
Eigenvalues	3.1	2.0	1.6	1.1	<1.0

Statistic	Model		
	One-factor	Two-factor	Three-factor
χ^2_M	940.983, <i>p</i> = 0.0000	288.334, <i>p</i> = 0.0000	75.946, <i>p</i> = 0.0168
<i>df</i> _M	77	64	52
RMSEA [90% CI]	0.120 [0.113-0.126]	0.067 [0.059, 0.075]	0.024 [0.011, 0.035]
CFI	0.390	0.842	0.983
TLI	0.279	0.775	0.970
SRMR	0.142	0.112	0.044

Three-factor Model Factor Loadings (Completely Standardized)			
	1	2	3
+1. HS_MildIll	0.384*	0.079	0.03
+2. HS_ChronCnds	0.630*	-0.01	0.000
+3. HS_Treatment	0.526*	0.139	-0.033
+4. HS_PrevAct	0.510*	0.164*	0.106
+5. HS_Threaten	0.642*	-0.043	-0.144
6. HS_WghtDiff	0.238*	0.036	0.085
++7. HS_Tobacco	0.01	0.400*	0.088
++8. HS_DrnkDy	-0.019	0.938*	-0.008
++9. HS_DrnkWk	0.02	0.765*	0.000
10. HS_Exercise	0.009	-0.105*	0.151*
+++11. HS_FallAslp	-0.084	-0.001	0.774*
+++12. HS_Wake	0.026	-0.038	0.534*
+++13. HS_SlpQual	0.015	0.001	0.756*
+14. HS_SideEff	0.523*	0.006	0.065

+ Chronic Medical Concerns subscale

++ Substance Use subscale

+++ Sleep Quality subscale

* $p < .05$

**Table 51. Health-Self Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings
(After Item Removal)**

Statistic	Three-factor		
χ^2_M	33.099, $p = 0.4624$		
df_M	33		
RMSEA [90% CI]	0.002 [0.000-0.026]		
CFI	1.000		
TLI	1.000		
SRMR	0.032		
Three-factor Model Factor Loadings (Completely Standardized)			
	1	2	3
+1. HS_MildIll	0.358*	0.078	0.049
+2. HS_ChronCnds	0.696*	-0.018	0.000
+3. HS_Treatment	0.546*	0.137	-0.024
+4. HS_PrevAct	0.538*	0.163*	0.111
+5. HS_Threaten	0.617*	-0.037	-0.115
++7. HS_Tobacco	0.000	0.401*	0.088*
++8. HS_DrnkDy	-0.015	0.939*	-0.01
++9. HS_DrnkWk	0.024	0.763*	0.001
+++11. HS_FallAslp	-0.072	0.000	0.769*
+++12. HS_Wake	0.024	-0.038	0.537*
+++13. HS_SlpQual	0.017	0.001	0.753*
+14. HS_SideEff	0.469*	0.006	0.095

+ Chronic Medical Concerns subscale

++ Substance Use subscale

+++ Sleep Quality subscale

* $p < .05$

Table 52. Health-Family Scale: Exploratory Factor Analysis Eigenvalues, Fit Statistics, and Factor Loadings (Before Item Removal)

Factors	1	2	3	4-12
Eigenvalues	3.9	1.7	1.1	<1.0

Statistic	Model		
	One-factor	Two-factor	Three-Factor
χ^2_M	560.017, $p = 0.0000$	315.291, $p = 0.0000$	83.663, $p = 0.0000$
df_M	54	43	33
RMSEA [90% CI]	0.110 [0.102-0.118]	0.090 [0.081, 0.100]	0.044 [0.033, 0.056]
CFI	0.642	0.807	0.964
TLI	0.562	0.704	0.928
SRMR	0.093	0.055	0.029

Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
1. HF_Concern	0.385*	0.261*
2. HF_MildIll	0.285*	0.183*
+3. HF_Treatment	0.670*	-0.088
+4. HF_PrevAct	0.752*	0.003
+5. HF_Threaten	0.686*	-0.034
+6. HF_Care	0.643*	0.074
+7. HF_PrevYou	0.514*	0.177
++8. HF_Tobacco	0.023	0.427*
++9. HF_Drinking	0.038	0.437*
10. HF_SubstUse	-0.017	0.368
++11. HF_WghtDiff	0.005	0.750*
++12. HF_Exercise	-0.014	0.748*

+ Chronic Medical Concerns subscale

++ Health Behaviors subscale

* $p < .05$

Table 53. Health-Family Scale: Exploratory Factor Analysis Fit Statistics and Factor Loadings (After Item Removal)

Statistic	Two-factor	
χ^2_M	150.996, $p = 0.0000$	
df_M	19	
RMSEA	0.095	
[90% CI]	[0.081-0.109]	
CFI	0.877	
TLI	0.767	
SRMR	0.052	
Two-factor Model Factor Loadings (Completely Standardized)		
	1	2
+3. HF_Treatment	0.641*	-0.085
+4. HF_PrevAct	0.752*	0.003
+5. HF_Threaten	0.666*	-0.027
+6. HF_Care	0.666*	0.046
+7. HF_PrevYou	0.558*	0.146*
++8. HF_Tobacco	0.111	0.333*
++9. HF_Drinking	0.117	0.344*
++11. HF_WghtDiff	0.009	0.768*
++12. HF_Exercise	-0.017	0.794*

+ Chronic Medical Concerns subscale

++ Health Behaviors subscale

* $p < .05$

Table 54. Items Excluded from Final CLSQ Scales

Item	Reason(s) for Exclusion
<i>Close Friendship</i>	
8. CF_Acc. How much has your friend accepted you for who you are?	Low mean (1.23); constricted range (1-3); skew (2.011) and kurtosis (3.270) > 2
13. CF_Res. To what extent have you and your friend been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	High cross-loadings in two-factor EFA model
<i>Social Life</i>	
1. SL_NumPl. How many people are in that group? Do not count yourself and the close friend we previously asked you about if that person is in your social group.	Low item-scale correlation (.11); low inter-item correlations
4. SL_Mut. How mutual has the contact generally been between you and your friends? Select the best option below.	Low factor loading in two-factor EFA model
5. SL_Acc. How much have your friends accepted you for who you are?	High cross-loadings in two-factor EFA model
6. SL_Lone. How lonely have you felt because you did not have anyone to socialize with?	Low factor loadings in two-factor EFA model
<i>Romantic Relationship – In Relationship</i>	
1. RR_BrkUp. In the past 6 months, how much of the time have you and your romantic partner spent on a break or broken up? If you began your relationship within the past 6 months, base this on the time since the relationship began.	High cross-loadings in two-factor EFA model
2. RR_Talk. How often on average have you talked with your romantic partner, including in person or by phone call, video call, text message, email, or any other messaging system?	Low mean (1.21); skew (4.044) and kurtosis (17.082) > 2
8. RR_Acc. How much has your romantic partner accepted you for who you are?	Low mean (1.40); skew (2.349) and kurtosis (6.062) > 2
9. RR_Satis. How satisfied have you been with your relationship?	High inter-item correlations (up to .72), suggesting item redundancy
14. RR_Res. To what extent have you and your romantic partner been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	High cross-loadings in two-factor EFA model
15. RR_Avoid. How often have you avoided talking with your romantic partner about a problem in your relationship, even though something was wrong?	High cross-loadings in two-factor EFA model
<i>Romantic Relationship - Single</i>	

6. RR_Frnds. How many of your friends have been in romantic relationships in the past 6 months?	Low item-scale correlation (.12); low inter-item correlations
7. RR_Presd. How much have you felt pressured to date from friends and family?	Low item-scale correlation (.11); low inter-item correlations
Family Relationships	
1. FR_Talk. In the past 6 months, how often on average have you talked with your parent/guardian/caregiver, including in person or by phone call, video call, text message, email, or any other messaging system?	Low mean (1.34); skew (2.39) and kurtosis (6.01) > 2
2. FR_Emo. How much have you felt that your parent/guardian/caregiver would be there for you if you needed them for emotional support?	High inter-item correlations (up to .69), suggesting item redundancy
13. FR_O_Emo. In the past 6 months, how much have you felt that other members of your immediate family would be there for you if you needed them for emotional support?	High inter-item correlations (up to .70), suggesting item redundancy
Neighborhood	
2. NB_Priv. How satisfied have you been with the amount of privacy you have had at that residence?	High inter-item correlation with similar item (.85), suggesting item redundancy
7. NB_Know. How well have you known your neighbors and/or roommate(s)?	Low item-scale correlation (.02); low inter-item correlations
Academic	
3. AC_Relshps. To what extent have you had positive relationships with your instructors?	High cross-loadings in two-factor EFA model
6. AC_Chall. To what extent has your schoolwork felt too challenging to manage?	High cross-loadings in two-factor EFA model
Employment - Working	
8. WK_NegFb. How often have you received negative feedback or evaluations at work?	Low factor loadings in two-factor EFA model
11. WK_Press. How much have you felt pressured to work, for example by your family for financial reasons?	Low factor loadings in two-factor EFA model
12. WK_FndJb. How much have you felt that if you wanted to quit your job, you could find a job somewhere else?	Low item-scale correlation (.01); low inter-item correlations
13. WK_Secure. How much have you felt that your job was (or is) secure, in other words that the position will exist in the future?	Low factor loadings in two-factor EFA model
14. Wk_Change. How often have you had to change jobs for any reason?	Low factor loadings in two-factor EFA model
Employment – Not Working	
3. WK_Qualif. How many jobs were available that you would be qualified to do?	Low item-scale correlation (.06); low inter-item correlations
Finances	
2. FI_Clothes. To what extent have you been able to afford clothing?	High inter-item correlation with similar item (.73), suggesting item redundancy

6. FI_Vacation. To what extent could you afford to go on a vacation where you would stay in a hotel? If you have not gone on vacation in the past 6 months, answer based on whether you could afford to if you wanted to.	High inter-item correlation with similar item (.72), suggesting item redundancy
8. FI_Budget. To what extent have you had to budget?	Low factor loading in one-factor EFA model

Health – Self

6. HS_WghtDiff. How much have difficulties with your weight, including weighing more or less than recommended, interfered with your physical health and/or your daily activities?	Low factor loadings in two-factor EFA model
10. HS_Exercise. How often have you exercised on average?	Low item-scale correlation (.08); low inter-item correlations

Health – Family

1. HF_Concern. In the past 6 months, how concerned have you been about the health of your immediate family members?	Low factor loadings in two-factor EFA model
2. HF_MildIll. On average per person, how many times have members of your immediate family gotten sick with mild illnesses, infections, or injuries, like the common cold, a stomach bug, or a mild sprain?	Low factor loadings in two-factor EFA model
10. HF_SubstUse. How concerned have you been about problems with illegal or recreational substance use among members of your immediate family?	Low mean (1.24); skew (3.49) and kurtosis (12.14) > 2

Table 55. Descriptive Statistics of Items in Close Friendship Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Close Friendship scale	784	1.71	0.47	1-3.94	1.00	1.47	--
<i>Closeness subscale</i>	784	1.64	0.58	1-4.50	1.38	2.37	--
1. CF_Talk. In the past 6 months, how often on average have you talked with your friend, including in person or by phone call, video call, text message, email, or any other messaging system?	784	1.80	1.10	1-5	1.35	0.93	.43
2. CF_Emo. How much have you felt that your friend would be there for you if you needed them for emotional support?	784	1.55	0.83	1-5	1.61	2.27	.71
3. CF_Count. How much have you felt that you could count on your friend to do the things they say they will do?	784	1.73	0.81	1-5	1.17	1.80	.61
4. CF_Close. How close have you felt toward your friend?	784	1.73	0.80	1-5	1.07	1.20	.71
5. CF_Mut. How much have you felt that your friendship is mutual? By mutual, we mean you and your friend are both close and supportive of each other, rather than the friendship being one-sided.	784	1.46	0.74	1-5	1.84	3.92	.69
6. CF_Share. How much personal, private, or sensitive information have you felt that you could share with your friend?	784	1.80	0.79	1-5	1.03	1.34	.62
7. CF_Hon. How honest have you felt that your friend has been with you?	784	1.62	0.70	1-5	1.03	1.07	.57
9. CF_Satis. How satisfied have you been with this friendship?	784	1.46	0.67	1-5	1.65	3.77	.67
<i>Conflict subscale</i>	784	1.77	0.59	1-4.25	0.74	0.43	--
10. CF_OftAr. How often have you argued with your friend? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	784	1.69	0.77	1-5	1.33	2.61	.51
11. CF_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your friend? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	784	1.67	0.71	1-4	.69	-.25	.41

12. CF_Ign. How often have you and your friend had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?	784	1.73	0.83	1-5	1.07	.91	.56
14. CF_Avoid. How often have you avoided talking with your friend about a problem in your friendship, even though something was wrong?	784	2.00	0.96	1-5	.78	.11	.43

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 56. Descriptive Statistics of Items in Social Life Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Social Life scale	761	2.07	0.54	1-4.10	0.67	0.53	--
Participation subscale	761	2.43	0.97	1-5	0.57	-0.55	--
2. SL_Talk. In the past 6 months, how often on average have you talked with your friends, including in person or by phone call, video call, text message, email, or any other messaging system?	761	2.36	1.33	1-5	.70	-.72	.49
3. SL_Part. How often have you participated in social activities?	761	2.28	1.30	1-5	.64	-.81	.55
7. SL_Satis. How satisfied have you been with your social life?	761	2.65	1.11	1-5	.45	-.51	.43
Conflict subscale	761	1.84	0.64	1-4.20	0.70	0.18	--
8. SL_OftAr. How often in general have you argued with your friends? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	761	1.66	0.76	1-5	1.14	1.49	.49
9. SL_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your friends? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	760	1.80	0.79	1-5	.80	.47	.53
10. SL_Ign. How often in general have you and your friends had emotional conflicts during which one or more of you ignore each other (give the “silent treatment”) or are less supportive or available than usual?	761	1.78	0.87	1-5	1.09	1.10	.67
11. SL_Res. To what extent have you and your friends generally been able to resolve arguments or conflicts in a manner that is satisfying to both you and the friend(s) involved? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	761	1.76	0.91	1-5	1.35	1.85	.53
12. SL_Avoid. How often in general have you avoided talking with one or more of your friends about a problem in your friendship, even though something was wrong?	761	2.18	1.06	1-5	.57	-.50	.57

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

**Table 57. Descriptive Statistics of Items in Romantic Relationship-In Relationship Scale
(Final Scale)^a**

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Romantic Relationship- In Relationship scale	394	1.81	0.64	1-4.58	1.11	1.13	--
<i>Closeness subscale</i>	394	1.63	0.70	1-4.67	1.49	2.00	--
3. RR_Close. How close have you felt toward your romantic partner?	394	1.54	0.82	1-5	1.59	2.35	.72
4. RR_Mut. How much have you felt that your relationship is mutual? By mutual, we mean you and your romantic partner are both close and supportive of each other, rather than the relationship being one-sided.	394	1.70	1.00	1-5	1.50	1.62	.77
5. RR_Share. How much personal, private, or sensitive information have you felt that you could share with your romantic partner?	394	1.56	0.76	1-5	1.45	2.13	.54
6. RR_Hon. How honest have you felt that your romantic partner has been with you?	394	1.70	0.96	1-5	1.60	2.43	.66
7. RR_Sup. How supportive has your romantic partner been of you?	394	1.59	0.86	1-5	1.41	1.38	.72
10. RR_Phys. How satisfied have you been with your physical relationship with your partner?	394	1.69	1.02	1-5	1.65	2.32	.58
<i>Conflict subscale</i>	394	1.98	0.78	1-4.75	0.92	0.52	--
11. RR_OftAr. How often have you argued with your romantic partner? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	394	1.89	1.02	1-5	1.05	0.44	.65
12. RR_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your romantic partner? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	394	2.05	0.90	1-5	0.66	0.07	.64
13. RR_Ign. How often have you and your romantic partner had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?	394	2.15	1.03	1-5	0.67	-0.16	.64

16. RR_Tens. How much have you felt that your romantic relationship has caused tension in your other close relationships, including with your family and friends?	394	1.84	1.06	1-5	1.18	0.62	.47
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^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 58. Descriptive Statistics of Items in Romantic Relationship-Dating Scale (Final Scale)

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Romantic Relationship-Dating scale	199	3.11	0.80	1-5	0.03	-0.41	--
1. RR_OfiDt. In the past 6 months, how often in general did you date or were you in brief relationships?	199	3.29	0.96	1-5	-.68	.10	.31
2. RR_Potl. Of the people you have dated or had brief romantic relationships with, how much potential did they have to be longer-term partners?	199	3.16	1.20	1-5	-.01	-.92	.29
3. RR_Opprt. How much have you felt that you have had many opportunities to date people you are interested in?	199	2.97	1.19	1-5	.22	-.91	.58
4. RR_Optns. How much have you felt that you have had many options about whom to date?	199	3.02	1.29	1-5	.12	-1.10	.51

Table 59. Descriptive Statistics of Items in Romantic Relationship-Single Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Romantic Relationship-Single scale	521	2.89	0.79	1-5	0.01	-0.17	--
<i>Options subscale</i>	521	3.07	1.05	1-5	-0.10	-0.71	--
1. RR_Long. How long has it been since your last relationship or since you dated?	520	2.97	1.60	1-5	.08	-1.53	.23
4. RR_Opps. How much do you feel that if you wanted to date, you would have opportunities to date people you are interested in?	521	2.91	1.21	1-5	.02	-.88	.55
5. RR_Eas. How much do you feel that if you wanted to date, you could easily find someone to date?	520	3.32	1.33	1-5	-.34	-1.02	.56
<i>Isolation subscale</i>	521	2.72	0.93	1-5	0.29	-0.35	--
2. RR_S_Satis. How satisfied have you been with being single and not dating?	521	2.54	1.15	1-5	.55	-.47	.64
3. RR_Wish. How much time do you spend wishing you were in a romantic relationship?	521	3.00	0.95	1-5	-.10	-.16	.68
8. RR_Lone. How lonely have you felt because you were not dating or in a romantic relationship?	521	2.61	1.18	1-5	.36	-.64	.69

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 60. Descriptive Statistics of Items in Family Relationships Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Family Relationships scale	785	2.17	0.64	1-4.43	0.69	0.40	--
<i>Immediate Family Closeness subscale</i>	785	2.07	0.80	1-4.86	1.03	0.73	--
3. FR_Count. How much have you felt that you could count on your parent/guardian/caregiver to do the things they say they will do?	785	1.69	0.95	1-5	1.50	1.92	.69
4. FR_Close. How close have you felt toward your parent/guardian/caregiver?	785	1.93	1.01	1-5	.96	.38	.77
5. FR_Share. How much personal, private, or sensitive information have you felt that you could share with your parent/guardian/caregiver?	785	2.54	1.03	1-5	.51	-.22	.68
6. FR_Hon. How honest have you felt that your parent/guardian/caregiver has been with you?	785	1.90	0.89	1-5	.96	.83	.69
7. FR_Acc. How much has your parent/guardian/caregiver accepted you for who you are?	785	1.69	0.93	1-5	1.43	1.72	.73
11. FR_Res. To what extent have you and your parent/guardian/caregiver been able to resolve arguments or conflicts in a manner that is satisfying to both of you? If you have not had to resolve an argument in the past 6 months, make your best guess based on how you imagine it would be.	785	2.12	1.11	1-5	.89	.12	.67
12. FR_Avoid. How often have you avoided talking with your parent/guardian/caregiver about a problem in your relationship, even though something was wrong?	785	2.61	1.24	1-5	.32	-.90	.65
<i>Immediate Family Conflict subscale</i>	785	2.27	0.77	1-5	0.43	-0.08	--
8. FR_OftAr. How often have you argued with your parent/guardian/caregiver? By “argued” we mean that you had an emotional conflict, not just a debate or discussion.	785	2.39	0.99	1-5	.60	.14	.53
9. FR_TypAr. Which of the following options best describes how a typical argument (emotional conflict) has gone with your parent/guardian/caregiver? If you have not argued in the past 6 months, choose the option that reflects how you imagine it would be.	785	2.29	0.87	1-5	.27	-.20	.52

10. FR_Ign. How often have you and your parent/guardian/caregiver had emotional conflicts during which one or both of you ignore the other (give the “silent treatment”) or are less supportive or available than usual?	785	2.12	1.05	1-5	.65	-.22	.52
<i>Broader Family Relationship Quality subscale</i>	785	2.18	0.71	1-4.80	0.72	0.37	--
14. FR_O_Share. How much personal, private, or sensitive information have you felt that you could share with other members of your immediate family?	785	2.70	1.00	1-5	.32	-.37	.52
15. FR_O_Hon. How honest have you felt that other members of your immediate family have been with you?	785	2.17	0.89	1-5	.67	.42	.62
16. FR_O_Acc. How much have other members of your immediate family accepted you for who you are?	784	1.78	0.93	1-5	1.18	.97	.61
17. FR_O_Prob. How often have you had problems with other members of your immediate family, for example, serious conflicts or arguments?	785	2.27	0.91	1-5	.39	-.17	.45
18. FR_Stop. Have you purposefully stopped having any contact with an immediate family member due to serious tension or conflict?	785	1.99	1.34	1-5	1.24	.22	.38

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 61. Descriptive Statistics of Items in Neighborhood Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Neighborhood scale	785	1.79	0.63	1-4.33	1.15	1.40	
<i>Tranquility subscale</i>	786	1.96	0.75	1-5	0.93	0.89	--
1. NB_Space. In the past 6 months, how satisfied have you been with the amount of personal space you have had at that residence?	786	2.13	1.13	1-5	.89	.13	.36
6. NB_Noise. How often has noise gotten in the way of your studying and/or sleep?	786	2.18	1.08	1-5	.62	-.37	.36
8. NB_PrNb. How often have you had problems with your neighbors or roommate(s)?	786	1.56	0.88	1-5	1.78	3.09	.34
<i>Safety subscale</i>	785	1.62	0.79	1-5	1.49	1.86	--
3. NB_Viol. How often have violent crimes been committed near that residence, that you are aware of? Examples include armed robbery, homicide, physical and sexual assault.	786	1.51	0.75	1-5	1.59	2.84	.59
4. NB_NViol. How often have non-violent crimes been committed near that residence, that you are aware of? Examples include theft, possessing drugs, selling drugs, prostitution.	785	1.84	1.12	1-5	1.34	1.01	.68
5. NB_Unsafe. How often have your neighbors or the people you live with engaged in unsafe or illegal activities in your neighborhood or residence, that you are aware of?	785	1.52	1.02	1-5	2.05	3.29	.52

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 62. Descriptive Statistics of Items in Academic Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Academic scale	738	2.10	0.61	1-4.67	0.79	0.71	--
Competency subscale	738	1.94	0.69	1-4.67	1.09	1.11	--
1. AC_Grades. In the past 6 months, which best describes the grades you have received at that school?	738	1.71	0.70	1-5	.73	.41	.54
2. AC_Probs. How often have you had serious academic problems, for example received failing grades, been placed on academic probation, needed to complete remedial coursework?	739	1.63	0.90	1-5	1.40	1.42	.51
4. AC_Skills. How effective have your study skills been for meeting your school's demands?	738	2.48	1.01	1-5	.70	.19	.51
Preparation subscale	738	2.25	0.74	1-5	0.55	0.23	--
5. AC_Res. How often have the resources you needed to learn and progress in your program been available to you? These include course materials like books and other library resources, as well as meetings with instructors, tutoring or workshops on campus, and accommodations in classes.	738	1.89	0.86	1-5	.75	.01	.43
7. AC_Satis. How satisfied in general have you been with your school?	738	2.43	0.98	1-5	.62	.20	.63
8. AC_Prep. How well has your school prepared you to achieve your future educational and/or career goals?	738	2.44	0.95	1-5	.53	.28	.55

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 63. Descriptive Statistics of Items in Employment-Working (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Employment-Working scale	482	1.87	0.58	1-3.70	0.69	0.08	--
<i>Demands subscale</i>	483	1.72	0.56	1-3.40	0.83	0.22	--
1. WK_Safe. In the past 6 months, how safe have you felt at your job?	483	1.61	0.82	1-5	1.44	2.14	.48
2. WK_Manage. How manageable has the workload been at your job?	483	1.64	0.81	1-5	1.21	1.03	.56
3. WK_Perform. How adequately have you been able to perform all the duties of your job?	483	1.35	0.57	1-4	1.50	1.60	.45
4. WK_Resps. To what extent have you been given the responsibilities you wanted at work?	483	1.70	0.83	1-5	1.07	.86	.49
5. WK_Interf. How much has your work interfered with other parts of your life, for example, your education, hobbies, relationships?	483	2.29	1.04	1-5	.56	-.24	.37
<i>Rewards subscale</i>	482	2.03	0.73	1-4.75	0.78	0.29	--
6. WK_Pay. Has the pay at your job been satisfactory?	483	2.63	1.12	1-5	.45	-.34	.41
7. WK_Apprec. How much have you felt that your supervisors, co-workers, and/or customers have appreciated your work?	482	2.13	1.07	1-5	.78	-.01	.70
9. WK_SupRelship. To what extent have you had a positive relationship with your supervisor(s)?	482	1.73	0.90	1-5	1.20	.95	.63
10. WK_CoRelship. To what extent have you had positive relationships with your co-workers?	483	1.63	0.77	1-4	1.21	1.25	.46

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 64. Descriptive Statistics of Items in Employment-Not Working (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Employment-Not Working scale	499	2.69	1.02	1-5	0.17	-0.85	--
1. WK_NeedJb. In the past 6 months, how much have you needed a job?	499	2.62	1.28	1-5	.33	-.95	.57
2. WK_WantJb. How much have you wanted a job?	500	3.14	1.22	1-5	-.18	-.83	.56
4. WK_DiffObt. How difficult has it been to obtain a job?	499	2.31	1.32	1-5	.52	-1.03	.48

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 65. Descriptive Statistics of Items in Finances Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Finances scale	783	1.76	0.76	1-4.57	1.10	0.66	--
1. FI_Housing. In the past 6 months, to what extent have you been able to afford housing, food, and household items?	783	1.63	0.91	1-5	1.52	1.92	.75
3. FI_Medical. To what extent have you been able to afford medical care?	783	1.73	1.13	1-5	1.53	1.32	.69
4. FI_Transprt. To what extent have you been able to afford transportation?	784	1.52	0.92	1-5	1.89	2.98	.68
5. FI_Leisure. To what extent could you afford to do leisure activities, for example, go out to eat at a sit-down restaurant, or go to the movies or a concert? If you chose not to do leisure activities, answer based on whether you could afford to do them if you wanted to.	785	2.19	1.13	1-5	.65	-.49	.65
7. FI_PayBills. To what extent have you or the person who supports you financially been able to pay your monthly bills?	785	1.50	0.84	1-5	1.96	3.97	.60
9. FI_Tight. To what extent has money been “tight” just before getting paid, for example, you lived paycheck-to-paycheck or relied on payday loans?	784	2.32	1.34	1-5	.63	-.85	.61
10. FI_Gaps. To what extent have you experienced financial hardship during which you have had gaps in housing or access to food?	784	1.44	0.86	1-5	2.09	4.07	.59

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 66. Descriptive Statistics of Items in Health-Self Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Health-Self scale	785	2.01	0.48	1-3.94	0.69	0.48	--
<i>Chronic Medical Concerns subscale</i>	785	1.54	0.58	1-4.83	1.66	3.66	--
1. HS_MildIll. In the past 6 months, how many times have you gotten sick with mild illnesses, infections, or injuries, like the common cold, a stomach bug, or a mild sprain?	785	1.82	0.79	1-5	1.05	1.69	.25
2. HS_ChronCnds. Have you had chronic medical conditions or chronic injuries, NOT including mental health difficulties? Chronic medical conditions and chronic injuries include but are not limited to: heart conditions, high blood pressure, asthma, chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, life-threatening allergies, Crohn's disease, thyroid disorders, sickle cell anemia, autoimmune disorders, cancer, arthritis, chronic pain, fibromyalgia, psoriasis, periodontal disease, sleep apnea, endometriosis, polycystic ovarian syndrome, lasting injuries like broken bones or torn ligaments.	785	1.36	0.78	1-5	2.33	5.08	.56
3. HS_Treatment. How many times have you gone to the doctor's office, an outpatient facility, or a hospital to receive treatment for chronic conditions/injuries?	167	2.56	1.27	1-5	.72	-.42	.46
4. HS_PrevAct. How much have chronic health conditions/injuries prevented you from completing daily activities and/or attaining goals that are personally important to you?	167	2.26	1.00	1-5	.60	.08	.52
5. HS_Threaten. To what extent do chronic health conditions/injuries threaten your life?	167	1.73	1.00	1-5	1.41	1.53	.47
14. HS_SideEff. How often have you had troublesome side effects from medications you regularly take for medical or psychiatric conditions?	785	1.48	0.91	1-5	2.00	3.45	.47
<i>Substance Use subscale</i>	785	1.54	0.79	1-4.67	1.61	1.99	--
7. HS_Tobacco. How often have you used tobacco or nicotine products, for example cigarettes, e-cigarettes, cigars, dip, chew?	785	1.58	1.24	1-5	2.01	2.48	.37

8. HS_DrnkDy. For the next question, please read and answer the question that best applies to you regarding alcohol consumption. For people who identify as men, how often have you had more than 4 drinks on any day? For people who identify as women, how often have you had more than 3 drinks on any day?	785	1.69	0.93	1-4	1.14	.18	.62
9. HS_DrnkWk. For the next question, please read and answer the question that best applies to you regarding alcohol consumption. For people who identify as men, how often have you had 14 or more drinks per week? For people who identify as women, how often have you had 7 or more drinks per week?	785	1.35	0.79	1-5	2.64	7.02	.58
<i>Sleep Quality subscale</i>	785	2.94	0.85	1-5	0.15	-0.39	--
11. HS_FallAslp. How often have you had trouble falling asleep within 30 minutes?	785	3.07	1.20	1-5	-.01	-.89	.57
12. HS_Wake. How often have you woken up in the middle of the night or early morning?	785	3.11	1.06	1-5	-.04	-.63	.46
13. HS_SlpQual. How would you rate your sleep quality overall?	785	2.66	0.92	1-5	.31	-.06	.59

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 67. Descriptive Statistics of Items in Health-Self Scale (Final Scale)^a

	N	Mean	Standard Deviation	Range	Skewness	Kurtosis	Item-Scale Correlation
Health-Family scale	777	1.85	0.71	1-4.5	0.93	0.54	--
<i>Chronic Medical Conditions subscale</i>	439	2.10	0.78	1-5	0.82	0.61	--
3. HF_Treatment. How many times has this family member gone to the doctor's office, an outpatient facility, or a hospital to receive treatment for this chronic health condition/injury?	439	2.54	1.17	1-5	.64	-.31	.53
4. HF_PrevAct. How much has this chronic health condition/injury prevented this family member from completing daily activities?	439	2.44	1.09	1-5	.39	-.50	.66
5. HF_Threaten. To what extent does this chronic health condition/injury threaten the life of this family member?	439	2.20	1.11	1-5	.78	-.02	.58
6. HF_Care. Due to chronic health conditions/injuries, how often have you generally needed to provide care for members of your immediate family? By care, we mean helping this person with daily activities and responsibilities and/or supporting them financially.	439	1.85	1.01	1-5	1.01	.23	.60
7. HF_PrevYou. How much have immediate family members' chronic health conditions/injuries prevented you from completing daily activities and/or attaining goals that are personally important to you?	439	1.48	0.85	1-5	1.89	3.29	.53
<i>Health Behaviors subscale</i>	777	1.81	0.81	1-5	1.22	1.16	--
8. HF_Tobacco. How concerned have you been about use of tobacco or nicotine, for example cigarettes, e-cigarettes, cigars, dip, chew, etc., among members of your immediate family?	777	1.68	1.19	1-5	1.64	1.46	.42
9. HF_Drinking. How concerned have you been about drinking problems among members of your immediate family?	777	1.63	1.13	1-5	1.81	2.21	.44
11. HF_WghtDiff. How much have difficulties with weight interfered with the health and/or daily activities of members of your immediate family?	777	1.85	1.04	1-5	1.00	.07	.51
12. HF_Exercise. How concerned have you been about lack of exercise among members of your immediate family?	777	2.10	1.14	1-5	.76	-.37	.51

^aItem numbers correspond to order of appearance on original scale. A missing number indicates the item was dropped from the final scale.

Table 68. Internal Consistency Reliability and Test-Retest Reliability

Scales and Subscales	<i>N</i>	Internal Consistency (α)	Internal Consistency (ω)	<i>N</i>	Test-Retest Reliability (ICC)	
Interpersonal Domain						
Close Friendship						
				139	.68	
	Closeness	784	.86	.86	139	.71
	Conflict	784	.69	.70	139	.68
Social Life						
				134	.53	
	Participation	761	.67	.69	134	.66
	Conflict	760	.78	.79	134	.49
Romantic Relationship (Overall)^a						
Romantic Relationship-In Relationship						
				55	.82	
	Closeness	394	.86	.87	55	.91
	Conflict	394	.79	.79	55	.67
Romantic Relationship-Dating						
		199	.64	.68	25	.73
Romantic Relationship-Single						
				99	.83	
	Options	519	.62	.66	99	.80
	Isolation	521	.81	.82	99	.86
Family Relationships						
				139	.84	
	Immediate Family Closeness	785	.89	.89	139	.81
	Immediate Family Conflict	785	.71	.71	139	.77
	Broader Family Relationship Quality	784	.73	.73	139	.78
Non-Interpersonal Domain						
Neighborhood						
				139	.77	
	Tranquility	786	.54	.55	139	.65
	Safety	785	.75	.79	139	.76
Academic						
				134	.77	
	Competency	738	.69	.70	134	.81
	Preparation	738	.71	.74	134	.68
Employment (Overall)^a						
Employment-Working						
				75	.78	
	Demands	483	.70	.70	75	.72
	Rewards	482	.74	.77	75	.70
Employment-Not Working						
		499	.72	.72	90	.81
Finances						
		783	.89	.89	138	.84
Health-Self						
				139	.84	
	Chronic Medical Concerns	167	.71	.72	139	.81
	Substance Use	785	.68	.70	139	.90
	Sleep Quality	785	.71	.72	139	.81
Health-Family						
				138	.68	
	Chronic Medical Concerns	439	.79	.80	72	.60

^aRomantic Relationship (Overall) and Employment (Overall) Scales represent weighted means of the scales within each domain (Romantic Relationship: In Relationship, Dating, Single; Employment: Working, Not Working), weighted by the proportion of time over the past six months in each circumstance.

Table 69. Pearson Correlations of CLSQ Domain Scales

	1	2	3	4	5	6	7	8	9	10
1. Close Friendship										
2. Social Life	.38**									
3. Romantic Relationship	.15**	.22**								
4. Family Relationships	.24**	.34**	.16**							
5. Neighborhood	.14**	.16**	0.06	.27**						
6. Academic	.22**	.24**	.17**	.31**	.18**					
7. Employment	.09*	.11**	.09*	.25**	.19**	.24**				
8. Finances	.26**	.22**	.02	.32**	.27**	.26**	.35**			
9. Health-Self	.03	.10**	.01	.26**	.26**	.24**	.16**	.17**		
10. Health-Family	.14**	.20**	.03	.25**	.25**	.11**	.13**	.29**	.24**	

* $p < .05$

** $p < .01$

Table 70. Values of Fit Statistics for One- and Two-Factor CLSQ Models

Statistic	Model		
	One-factor	Two-factor	Two-factor with cross-loadings ^a
χ^2_M	191.961, $p = .0000$	158.816, $p = .0000$	97.849, $p = .0000$
df_M	35	34	32
RMSEA [90% CI]	.075 [.065, .086]	.068 [.058, .079]	.051 [.040, .063]
CFI	.837	.871	.932
TLI	.791	.829	.904
SRMR	.052	.047	.035

Note. CI: Confident interval. Two-factor model includes latent factors of Interpersonal and Non-Interpersonal Chronic Stress.

^aTwo-factor model allowing cross-loadings of Family Relationships and Academic scales on both Interpersonal and Non-Interpersonal Chronic Stress factors.

Table 71. Descriptive Statistics of LSI Scales and Pearson Correlations with CLSQ Scales

	<i>M (SD)</i>	Range	<i>r</i>
LSI Close Friendship	2.05 (0.87)	1-4.5	.63
LSI Social Life	2.37 (0.89)	1-4.5	.51
LSI Romantic Relationship	2.37 (0.74)	1-4	.60
LSI Family Relationships	2.48 (0.82)	1-4.5	.76
LSI Neighborhood	2.17 (0.68)	1-4.5	.45
LSI Academic	2.14 (0.53)	1-3.5	.49
LSI Employment	2.16 (0.66)	1-4	.51
LSI Finances	2.08 (0.70)	1-4	.68
LSI Health-Self	2.00 (0.58)	1-4	.45
LSI Health-Family	2.48 (0.64)	1-4.5	.53
LSI Interpersonal Composite	2.32 (0.58)	1.13-3.63	.73
LSI Non-Interpersonal Composite	2.17 (0.42)	1.25-3.42	.73
LSI Total Composite	2.23 (0.43)	1.30-3.15	.80

Note. All bivariate correlations between LSI and CLSQ scales and composites (r ; $N = 91 - 93$) were significant, $p < .001$.

Table 72. Pearson Correlations of CLSQ Scales and Composites with Depressive Symptoms, Perceived Stress, and Neuroticism

	Current Depression	Lifetime Depression	Perceived Stress	Neuroticism
Sample Size (<i>N</i>)	737 - 784	91 - 93	736 - 783	735 - 782
Close Friendship	0.25**	0.11	0.23**	0.23**
Social Life	0.34**	0.08	0.30**	0.33**
Romantic Relationship	0.17**	0.16	0.22**	0.26**
Family Relationships	0.46**	0.44**	0.42**	0.45**
Neighborhood	0.24**	0.35**	0.20**	0.22**
Academic	0.39**	0.19	0.43**	0.33**
Work	0.22**	0.28*	0.23**	0.23**
Finances	0.32**	0.24*	0.27**	0.24**
Health-Self	0.27**	0.33**	0.38**	0.37**
Health-Family	0.28**	0.27*	0.22**	0.19**
Interpersonal Composite	0.46**	0.31*	0.44**	0.48**
Non-Interpersonal Composite	0.49**	0.46**	0.48**	0.44**
Interpersonal Composite (Alternative) ^a	0.51**	0.31*	0.51**	0.50**
Non-Interpersonal Composite (Alternative) ^a	0.54**	0.48**	0.52**	0.49**

Note. Current and lifetime depressive symptoms were measured with the Diagnostic Inventory for Depression, perceived stress was measured with the Perceived Stress Scale, and trait neuroticism was measured with the 10-item International Personality Item Pool version of the Revised NEO Personality Inventory's neuroticism domain.

^aBased on results from confirmatory factor analyses, the Alternative Interpersonal and Non-Interpersonal composites include the Family Relationships and Academic scale scores in both composites.

* $p < .05$

** $p < .001$

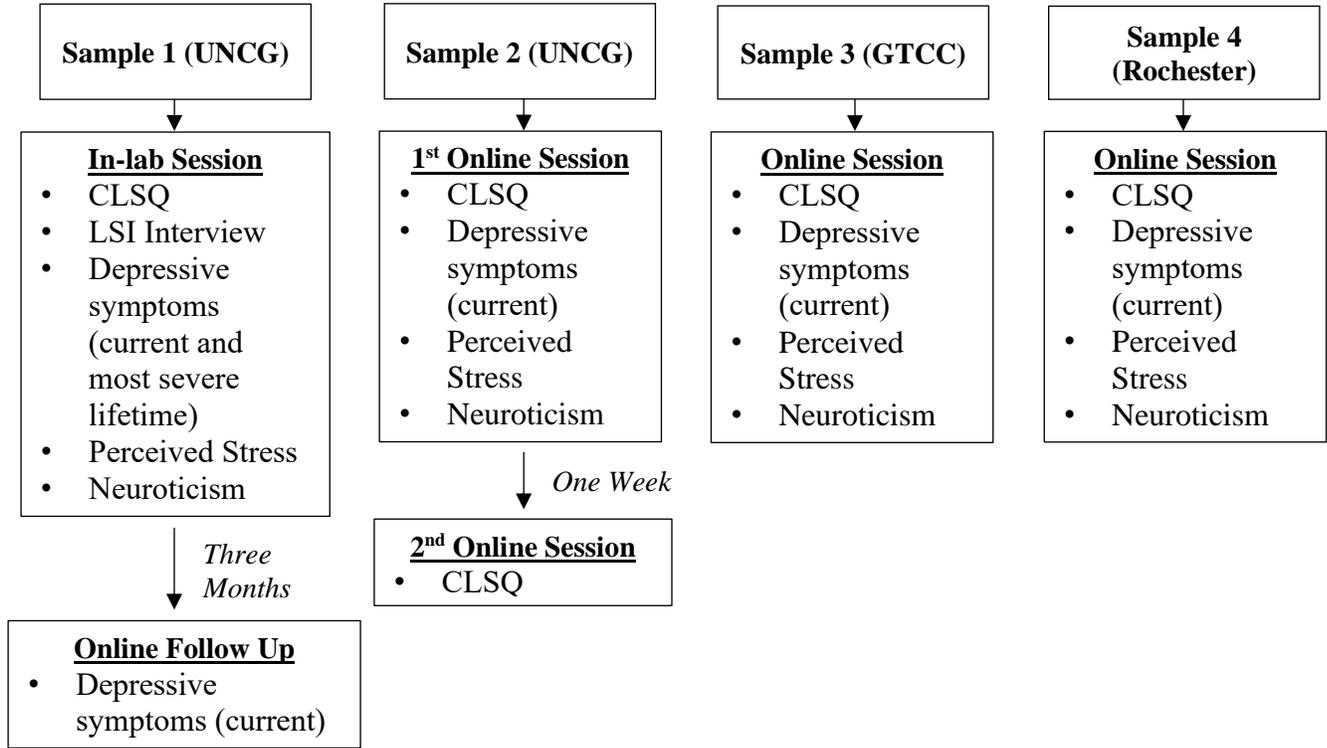
Table 73. Main and Interactive Effects within Employment and Romantic Relationship Domains on Current Depressive Symptoms

Employment Domain	<i>b</i>	SE(<i>b</i>)	<i>t</i>	<i>p</i>-value
Constant	0.899	0.048	18.745	< .001
Work Category	-0.163	0.060	-2.694	.007
Work Stress Severity	0.330	0.072	4.568	< .001
Work Category x Work Stress Severity	-0.216	0.080	-2.684	.008
Romantic Relationship Domain	<i>b</i>	SE(<i>b</i>)	<i>t</i>	<i>p</i>-value
Constant	0.615	0.048	12.734	< .001
Relationship Category	0.651	0.092	7.080	< .001
Relationship Stress Severity	0.252	0.049	5.124	< .001
Relationship Category x Relationship Stress Severity	0.254	0.096	2.640	.009

Note. The subsample for the regression analysis with Employment (Work) variables comprised participants who endorsed being exclusively employed or not working over the full 6-month CLSQ assessment period. The subsample for the analysis with Romantic Relationship variables comprised those who endorsed being exclusively in a committed relationship or single over the past 6 months. Work Category: 0 = Employed, 1 = Not Working; Work Stress Severity: Mean-centered average scores for CLSQ Employment-Working and Employment-Not Working scales, respectively. Romantic Relationship Category: 0 = Single, 1 = In Relationship; Romantic Relationship Stress Severity: Mean-centered average scores for CLSQ Romantic Relationship-In Relationship and Romantic Relationship-Single scales, respectively.

APPENDIX C: FIGURES

Figure 1. Measures Administered and Hypotheses Addressed in Each Sample



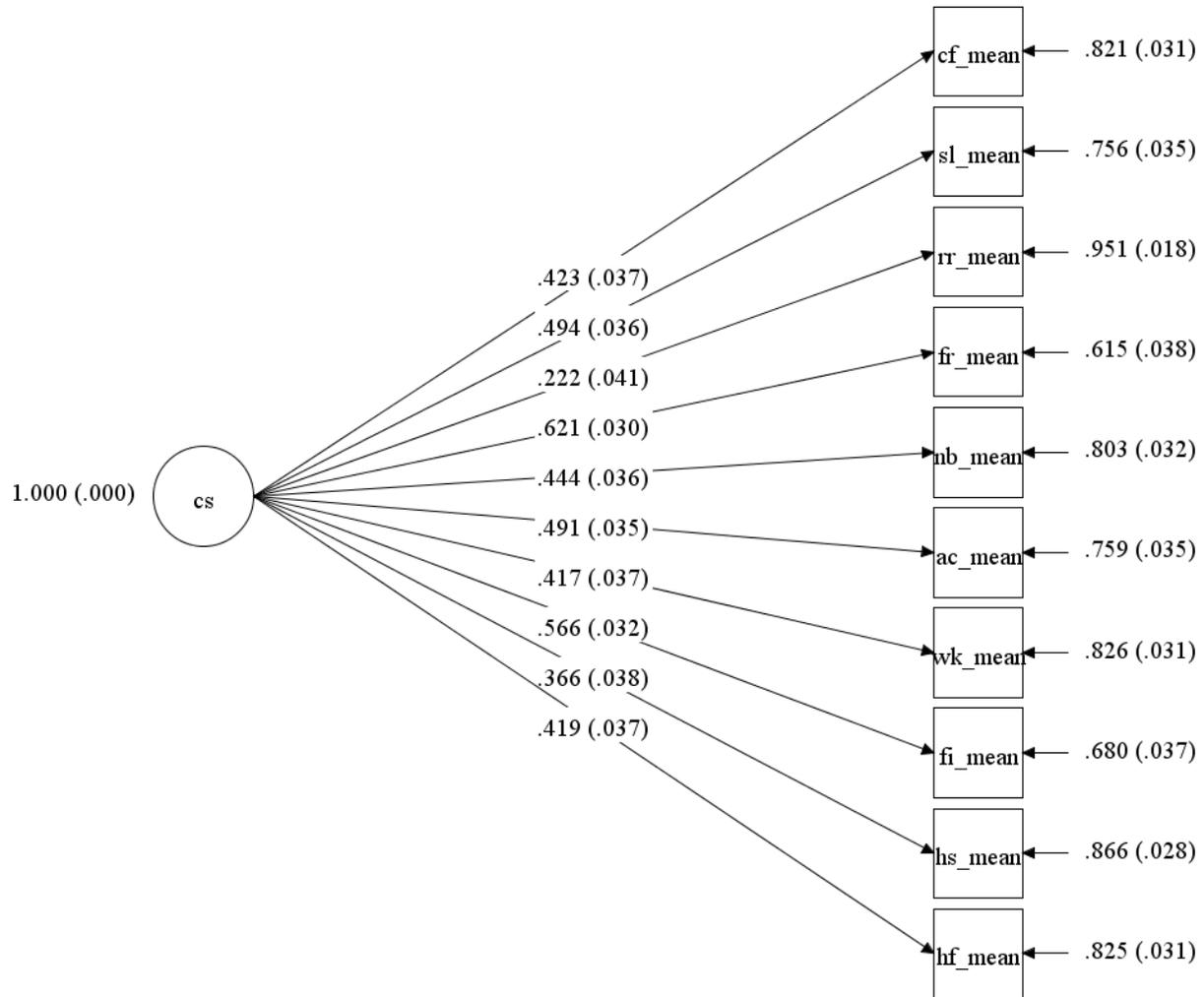
Hypothesis	Sample(s)
1. The CLSQ scales will each demonstrate good internal consistency reliability.	1, 2, 3, 4
2. The CLSQ scales will demonstrate good temporal stability over a one-week period through high test-retest reliability.	2
3. The CLSQ domain scales will correlate significantly with each other, with correlations ranging from small to medium in size.	1, 2, 3, 4
4. Confirmatory factor analysis using domain scores will support a two-factor solution representing the Interpersonal and Non-Interpersonal composites.	1, 2, 3, 4
5. The CLSQ will demonstrate strong criterion validity through significant, large correlations with the UCLA LSI, including between the individual domain scores, Interpersonal and Non-Interpersonal composites, and overall (total) score.	1
6. The CLSQ's Interpersonal and Non-Interpersonal composite scores, as well as the individual domain scales, will demonstrate construct validity through significant, medium to medium-large correlations with current depressive symptoms.	1, 2, 3, 4
7. Lifetime depressive symptoms during the most severe week of symptomatology will correlate with chronic stress through significant, medium correlations with the CLSQ composites and individual domains to further support construct validity of the CLSQ.	1

8. In exploratory analyses, the CLSQ composites and LSI composites will both predict prospective depressive symptoms at a three-month follow-up.	1
9. The CLSQ Interpersonal and Non-Interpersonal composites, as well as the individual domains, will demonstrate discriminant validity with stress appraisals and trait neuroticism through significant but medium correlations with perceived stress as well as neuroticism, in contrast to the larger predicted CLSQ-LSI correlations.	1, 2, 3, 4

Note. UNCG: University of North Carolina at Greensboro; GTCC: Guilford Technical

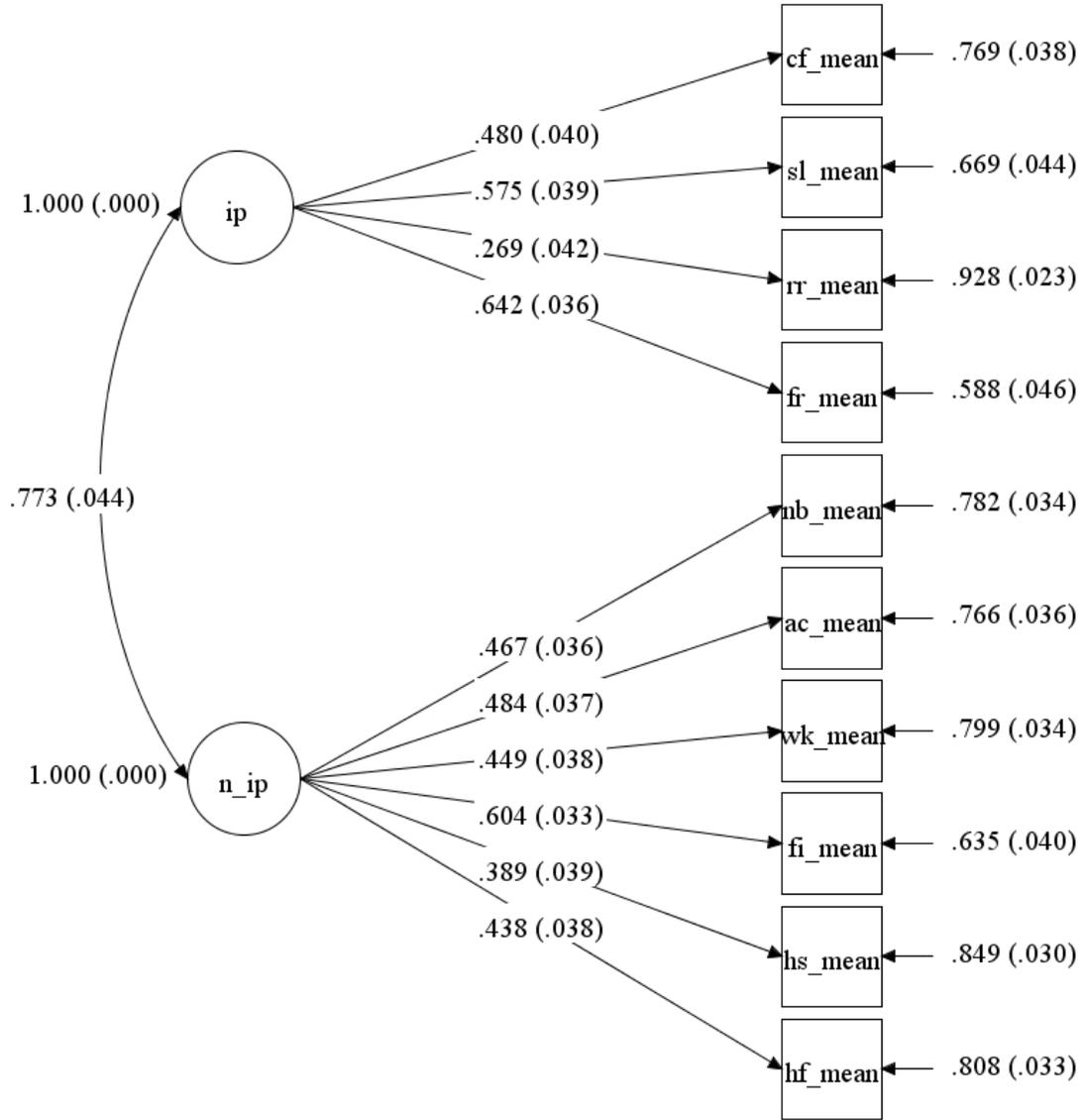
Community College; Rochester: University of Rochester.

Figure 2. Confirmatory Factor Analysis: One-Factor CLSQ Model



Note. Factor loadings are completely standardized. cs: Chronic Stress; cf_mean: Close Friendship; sl_mean: Social Life; rr_mean: Romantic Relationship; fr_mean: Family Relationships; nb_mean: Neighborhood; ac_mean: Academic; wk_mean: Employment; fi_mean: Finances; hs_mean: Health-Self; hf_mean: Health-Family.

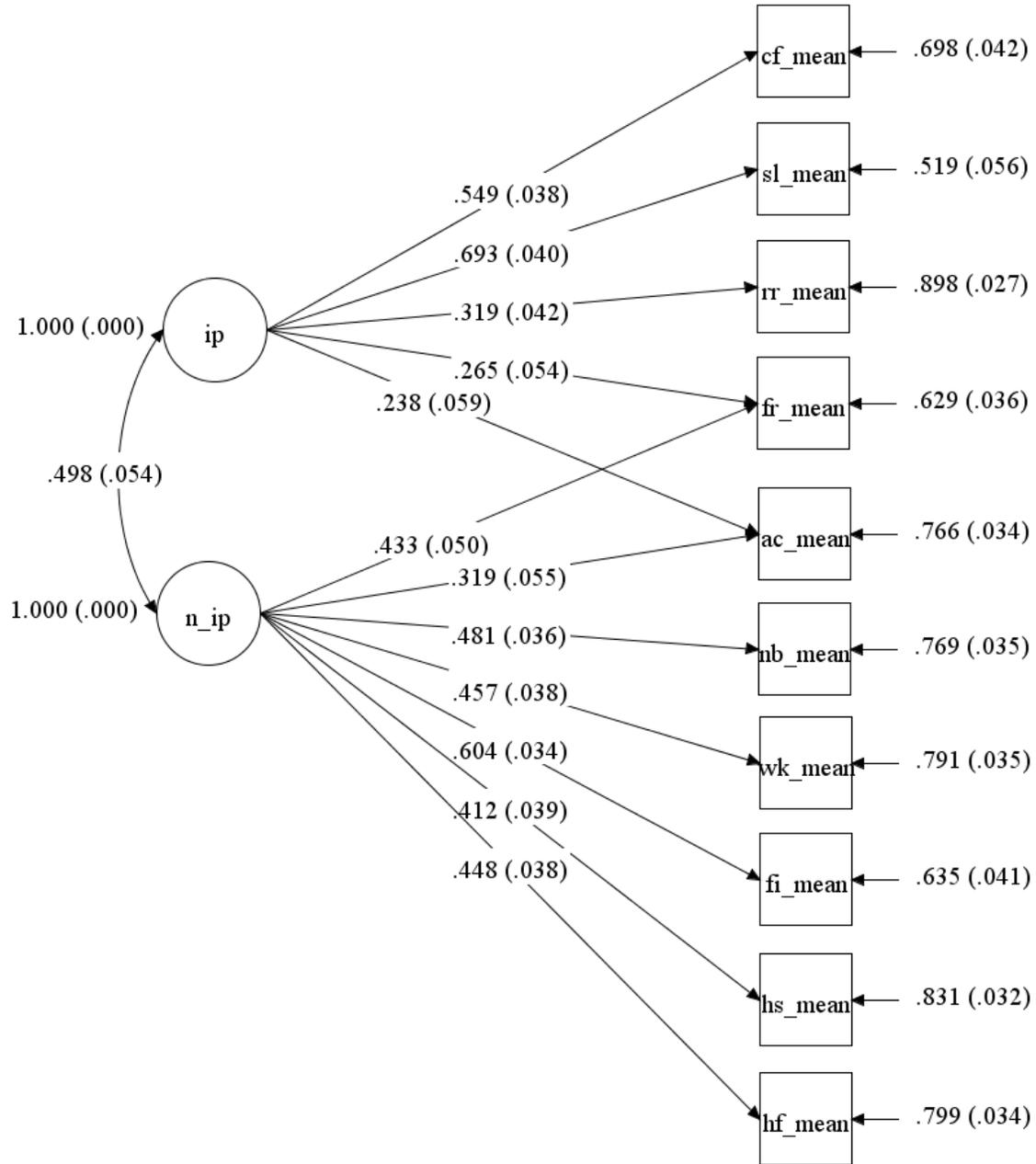
Figure 3. Confirmatory Factor Analysis: Two-Factor CLSQ Model



Note. Factor loadings are completely standardized. ip: Interpersonal Chronic Stress; n_ip: Non-Interpersonal Chronic Stress; cf_mean: Close Friendship; sl_mean: Social Life; rr_mean: Romantic Relationship; fr_mean: Family Relationships; nb_mean: Neighborhood; ac_mean:

Academic; wk_mean: Employment; fi_mean: Finances; hs_mean: Health-Self; hf_mean: Health-Family.

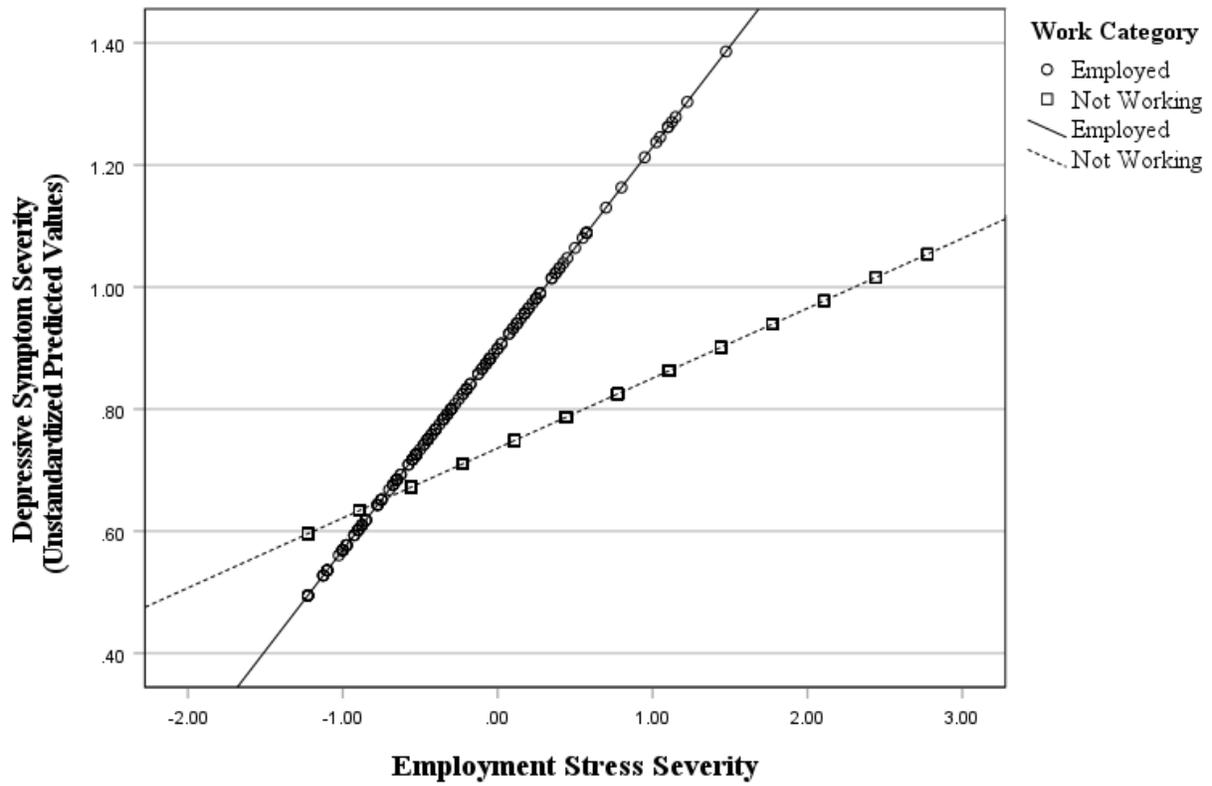
Figure 4. Confirmatory Factor Analysis: Alternative Two-Factor CLSQ Model



Note. Factor loadings are completely standardized. Model allows cross-loadings of Family Relationships and Academic scales on both factors. ip: Interpersonal Chronic Stress; n_ip: Non-

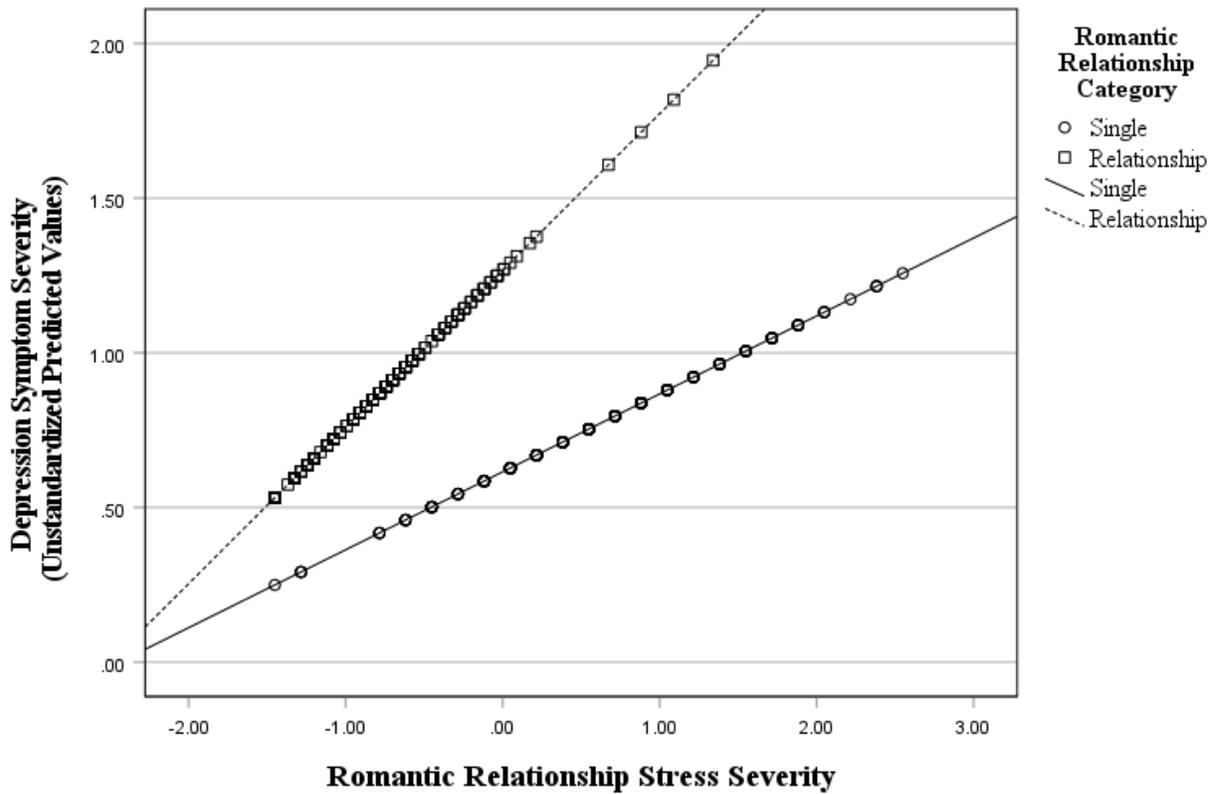
Interpersonal Chronic Stress; cf_mean: Close Friendship; sl_mean: Social Life; rr_mean:
Romantic Relationship; fr_mean: Family Relationships; nb_mean: Neighborhood; ac_mean:
Academic; wk_mean: Employment; fi_mean: Finances; hs_mean: Health-Self; hf_mean: Health-
Family.

Figure 5. Unstandardized Predicted Values of Current Depressive Symptoms Regressed on CLSQ Employment Stress



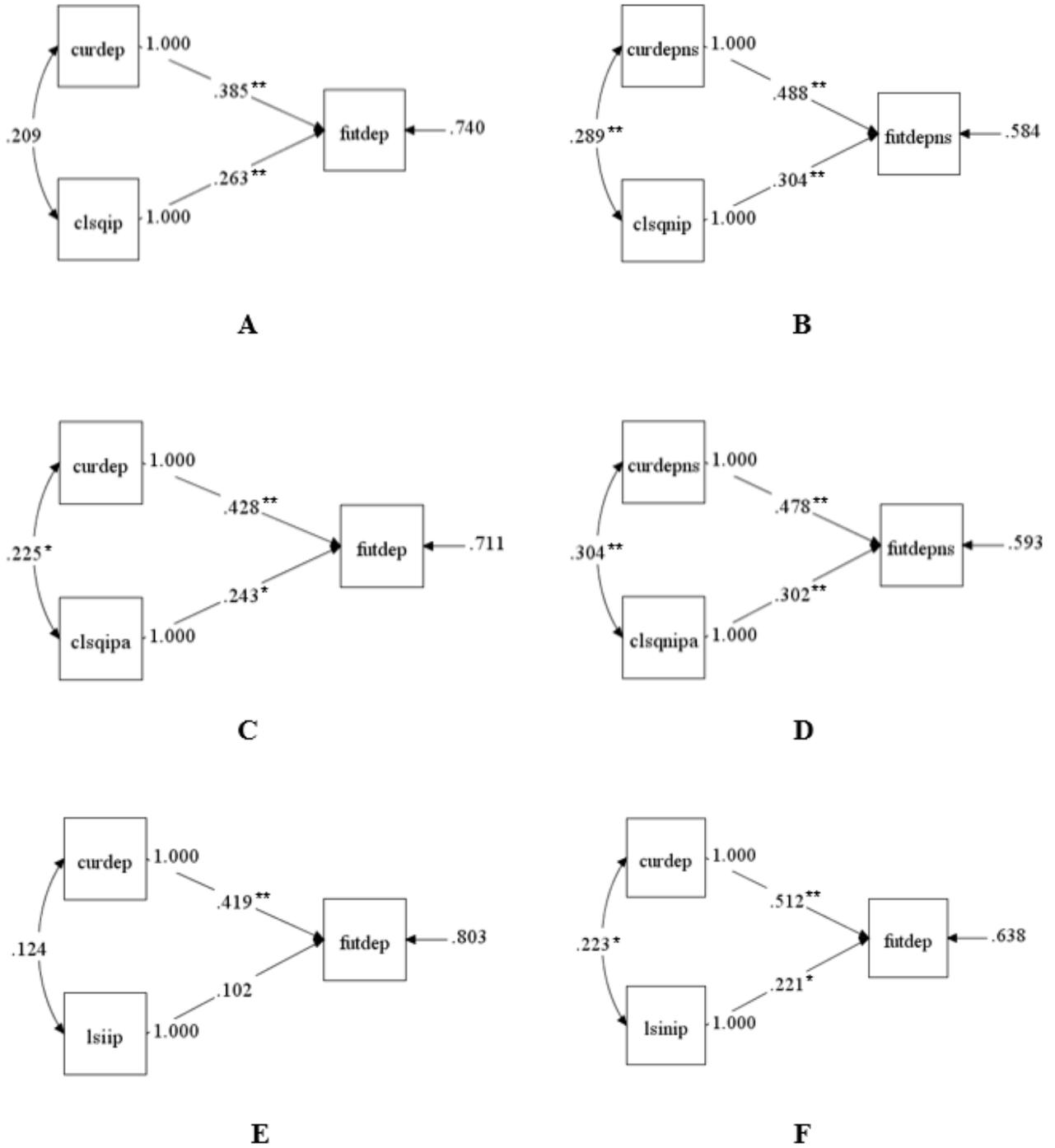
Note. Regression analyses included participants who were exclusively employed or unemployed over the 6-month period, depicted separately by category (Employed and Not Working). CLSQ scores are mean-centered.

Figure 6. Unstandardized Predicted Values of Current Depressive Symptoms Regressed on CLSQ Romantic Relationship Stress



Note. Regression analyses included participants who were exclusively in a committed relationship or were single over the 6-month period, depicted separately by category (Relationship and Single). CLSQ scores are mean-centered.

Figure 7. Path Diagrams Depicting Relationships between Chronic Stress, Current Depressive Symptoms, and Depressive Symptoms at Follow Up



Note. Path coefficients are completely standardized. curdep: Current depressive symptoms; curdepns: Current depressive symptoms with sleep items omitted; futdep: Depressive symptoms at follow-up; futdepns: Depressive symptoms at follow-up with sleep items omitted; clsqip: CLSQ Interpersonal composite; clsqnip: CLSQ Non-Interpersonal composite with sleep items omitted; clsqipa: CLSQ Interpersonal composite including Academic scale; clsqnipa: CLSQ Non-Interpersonal composite, with sleep items omitted, including Family Relationships scale; lsiip: LSI Interpersonal composite; lsinip: LSI Non-Interpersonal composite.

* $p < .05$

** $p < .01$