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EXAMINING THE OVERLAP BETWEEN RESILIENCY  
AND COPING MEASURES

by

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THESIS

Presented to the Faculty of  
The University of Houston-Clear Lake  
In Partial Fulfillment  
Of the Requirements  
For the Degree

MASTER OF ARTS

in Clinical Psychology

THE UNIVERSITY OF HOUSTON-CLEAR LAKE

AUGUST, 2023

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AND COPING MEASURES

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## **Dedication**

For my Aunt Buttons and Uncle L.E. While you passed long before I started this journey, I thought of you often while writing this and how you helped shape me into the individual I am becoming today. Thank you both for everything you have done for me, and I wish that you were around to enjoy what all “your” kids have grown into.

## **Acknowledgements**

Writing this would not have been possible without the guidance and support of Dr. Christine Walther. Without her, I certainly would not have been able to complete this project. I would also like to thank Dr. Sara Elkins for assisting me in my pursuit of achieving this goal.

To my beautiful wife, Andie. I do not believe I could have done this without you, and I am looking forward to spending as much time with you as possible, I love you and this is the first step on the path of the rest of our lives.

My best and oldest friend, my partner-in-crime, Wallace. The ghost has been exorcised; we can now carry on living.

Last, but certainly not least, my unending appreciation goes to Jillian and KJ. You have been there for me through some tremendously difficult stress and anxiety while we completed our degrees, and I look forward to further adventures in caffeine and laughter.

ABSTRACT

EXAMINING THE OVERLAP BETWEEN RESILIENCY  
AND COPING MEASURES

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University of Houston-Clear Lake, 2023

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Resilience and coping are two distinct psychological concepts, but they are often used interchangeably in the literature (Morales-Rodriguez et al., 2021). Resilience is the ability to return to a pre-exposure physiological and psychological state during and immediately after an event, and coping is the behavior that an individual may engage in to manage stressors (Rice & Liu, 2016a). Research has consistently reported a relation between resilience and coping styles (Rice & Liu, 2016b; Wu et al., 2020); however, it is unclear if widely used measures of resilience and coping may be measuring the same construct rather than unique facets of the two constructs. This study examined associations among frequently used measures of resilience and coping to determine how much overlap may be present.

Participants were 237 students at a suburban commuter campus in Houston, Texas, and data were collected during the Fall 2022 semester. Participants were 18 – 65

years of age ( $M = 24.80$ ,  $SD = 7.61$ ), racially/ethnically diverse (37.34% Hispanic/Latinx/Spanish, 33.48% White/Caucasian, 10.30% Multiracial, 8.58% African American/Black/African, 6.44% Asian), and predominantly cisgender female (73.82%). Participants completed an online self-report survey including common resilience (i.e., CD-RISC 27, Resiliency Appraisal Scale, and Brief Resilience Scale) and coping (i.e., Brief-COPE Questionnaire and Brief Resilient Coping Scale) measures.

Even though there were significant correlations among many of the measures ( $r$ 's =  $-.36$  -  $.61$ , all  $p$ 's  $< .05$ ), with effect sizes ranging from small to large, results suggest that the measures captured at least some unique aspects of the constructs. Future research would benefit from examining individual items in the measures to further understand what is shared and what is unique in commonly used measures of resilience and coping, as well as how to use these results in an operationalized way for individuals outside of trauma-informed care.

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## CHAPTER I: INTRODUCTION

Resiliency and coping are distinctly different psychological constructs that have a lasting effect on an individual's disposition and can contribute to their overall personality development, including how an individual functions during and after a crisis (Folkman & Moskowitz, 2004; Rice & Liu, 2016b; Sisto et al., 2019; Windle et al., 2011). Broadly, much of the research into these concepts has described the differences between resiliency and coping. Yet, beyond the standard definitions available from the American Psychological Association, researchers have reached no significant consensus on these two concepts' unique and shared characteristics (Van der Hallen et al., 2020). While the two constructs are almost assuredly related (Wu et al., 2020), more research is needed to determine the ways in which these behaviors and experiences overlap (de la Fuente et al., 2021).

### **Resiliency**

The Dictionary of Psychology (APA, 2015b) defines resilience as a successful adaptation to life stressors through mental, emotional, and behavioral changes and modification to internal and external demands. Other works have more succinctly defined resilience as overcoming hardship and adapting positively (Luthar & Cicchetti, 2000), quickly coping and then returning to pre-crisis emotional and behavioral levels (Windle, 2011), or returning to a healthy and stable pre-traumatic state after exposure to a traumatic event (Rice & Liu, 2016a). However, almost all definitions have the same components of adapting and bouncing back following adversity (Denckla et al., 2020).

Resiliency is developed and honed throughout life. There are several sources and factors that may potentially influence an individual's capacity to build resilience, including personal and social relationships with others, personality traits, and biological

and environmental factors (Herrman et al., 2011). The interactions between these sources and factors can shape an individual's resiliency in many ways. The concepts of biology, environment, and individual characteristics are of particular interest in the study of the development of resilient individuals (Bowes & Jaffee, 2013; Ungar et al., 2013) and include examining neurobiological mechanisms of resilience, physical health, learned behaviors within the family or from early childhood experiences, SES, and neighborhood or environmental factors (El-Sheikh & Harger, 2001).

Werner's (1993; 1995) 40-year longitudinal study of infancy to adulthood provided a foundation for early research into psychological resilience. Werner discovered several protective factors that may have contributed to an individual's ability to develop into a capable and socially responsible member of society, even after they were subjected to many environmental risk factors. It has been suggested that resiliency is associated with a myriad of protective factors during different developmental phases, and several processes or traits that resilient individuals may possess have been proposed, such as the reduction of the impact of risk (i.e., modification of behavior in response to stressful situations), decreasing "negative chain reactions" (i.e., engaging in long-term cognitive and behavioral exchanges that propagate maladaptive responses to stressors), establishing and maintaining self-esteem and self-efficacy, usually through pro-social behaviors, friends, and family, and being open to new experiences (Rutter, 1987; 2012). In addition, an individual's resiliency may be tied to an innate drive to survive, thrive, and grow (Carver, 1998).

Biologically, brain size, receptor sensitivity, and neural network ability could intensify or decrease resiliency in an individual (Curtis & Nelson, 2003). Using EEG readings, significant brain structure differences were noted in maltreated and non-maltreated developing children across gender (Curtis & Cicchetti, 2007), with some

studies suggesting cisgender males may be more psychologically resilient to distress than females (Prout et al., 2019; Zhang et al., 2018). Other biological components and genetic markers suggest that less resilient individuals may perceive psychological pressure more seriously than others, which results in a more severe physiological reaction (Chen et al., 2004).

The development of specific personality characteristics, including acceptance of reality, appreciation of life, humor, optimism, problem-solving, and religious beliefs, has been identified as an indicator of resilience in the general population (Eley et al., 2013) and in specific groups, such as veterans (Rice & Liu, 2016a; 2016b). Investigation of resiliency in healthcare workers during the COVID-19 pandemic revealed increased self-care, access to staff development, more family-work-life balance, better work leadership, and staff feedback sessions with administrators and employers led to more resilient healthcare workers (Heath et al., 2020). The ability to maintain optimism, self-efficacy, and effective emotional control strategies when encountering a risky experience may promote protection and contribute to the development of, or even augment, resiliency (Afek et al., 2021; Bistricky et al., 2019; Rudzinski et al., 2017).

Resiliency can be conceptualized as protective against stressors, and increasing an individual's resilience can help to buffer against future stressors (Métais et al., 2022). An integration of life experience, biological and physiological factors, and personality and individual characteristics influences the development of resilience among individuals (Davydov et al., 2010) and includes traumatic experiences (Chen et al., 2004), experiences in low-SES and/or dangerous environments (Nusslock & Miller, 2015), genetic markers and anxiety (Miller et al., 2011), and engagement in risk-taking behaviors (Wang & Gordon, 1994). Viewing this integration through a macro lens helps to view the individual as the sum of the factors of their lives and understand that no

single element contributes to the development of resiliency itself (Southwick & Charney, 2012).

While there is some consensus in the literature about resilience, such as individuals holding a level of resilience rather than an absolute presence or absence (Southwick et al., 2014) and an individual's capability of changing their psychological resilience leading to differential use of psychosocial resources (Bistricky et al, 2019), there is still much that researchers need to determine. Among other lingering questions in the literature, the measures available to study this still relatively unknown construct may be missing important questions or including questions that are more appropriate for related constructs (Ahern et al., 2006; Fisher & Law, 2021). As such, it is crucial for research to examine current measures of resilience to identify whether these measures accurately reflect the construct.

### **Coping**

The Dictionary of Psychology (APA, 2015a) defines coping as using behavioral or cognitive strategies to contend with, or reduce, negative reactions to stress. Coping has also been described as a process initiated after an event in response to an individual's perceived loss, harm, or threatened goals (Folkman & Moskowitz, 2004), effortful response to internal or external demands (Halstead et al., 1993), or cognitive and behavioral attempts made to reduce external or internal conflict (Folkman & Lazarus, 1980).

Coping styles can be categorized as either problem-focused or emotion-focused (Park et al., 2020). Problem-focused styles attempt to solve stress, whereas emotion-focused styles are aimed at decreasing distress (Carver et al., 1989). A third dimension, avoidant-coping, has been proposed and suggests individuals will attempt to distract themselves or escape from stressors (Folkman & Moskowitz, 2004). It is important to

note that there is a difference between a strategy and a style. While coping styles are general approaches to life and stress, strategies are specific mechanisms an individual may employ in the context of an experienced stressor (Amirkhan, 1990), and multiple strategies from assorted styles may be used until a strategy that works is found (Firth et al, 2010). Overall, individuals will engage in coping strategies to fix problems, contend with emotions, and get away from the stress caused by an experience (Bolgar et al., 2008). Broadly, there has been research into classifying coping strategies as ‘positive’ or ‘negative’ (Heffer & Willoughby, 2017). Positive coping strategies include taking breaks, engaging in exercise and healthy eating habits, talking to others, connecting with community- or faith-based organizations, and finding a professional to speak to if the situation warrants it (Stoeber & Janssen, 2011). Negative strategies could include engaging in alcohol or substance use, blaming self, denial, and disengagement (Aldwin & Revenson, 1987).

Coping affects how an individual contends with stressors, both in the short- and long-term, with the development of coping skills beginning at an early age and continuing throughout life (Skinner et al., 2003). A proposed developmental coping framework suggests that coping is organized into five areas: problem-solving, comforting, distracting, escaping, and information-seeking (Zimmer-Gembeck & Skinner, 2011). Each area is comprised of different strategies that describe an individual’s overall coping ‘family’ at a particular developmental level. For example, in infancy, the framework suggests that self-soothing and seeking attention from caregivers are strategies that reflect the comforting coping family. During pre-adolescence, the areas of the brain corresponding to executive function become more active, suggesting individuals are engaging in more emotional self-regulation (Casey et al., 2005). Thus, pre-adolescents will begin to learn and model age-appropriate, socially accepted coping

skills and behaviors, including socialization, information gathering, physical and mental withdrawal, as well as distraction strategies (Zimmer-Gembeck & Skinner, 2016). This developmental shift continues during early adolescence, when coping strategies change from external to internal. These developmental shifts in coping strategies illustrate how individual strategies will change to fit developmental needs while reflecting the same family of coping strategies (Thome & Espelage, 2004).

The overall efficacy of a coping strategy can be evaluated based on how an individual begins to process and manifest stress in their life (Pearlin & Schooler, 1978). The effectiveness of a given strategy may be directly related to effective modeling, prior use, and success throughout life (Biggs et al., 2017). It is important to note that positive strategies can become negative if an individual begins to over-indulge in the activity to the point of avoidance (Billings & Moos, 1981).

In contrast to resilience, coping has been researched extensively, is well-defined, and validated measures are available for various populations (Amirkhan, 1990; Kato, 2015). However, most of the recent developments in coping have been used to identify stressors in specific experiences (e.g., violence, terrorism, war, caregiving, health issues, sports, academics, discrimination, employment). While the progress is advantageous to these specific areas, incorporating these advances into the wider field of psychology has been limited to exploring stress-profile formulation of styles and adaptation and measure development (Amai & Hojo, 2021; Somerfield & McCrae, 2000), and research into individual coping strategies is mostly occurring in longitudinal studies with children, which can experience significant participant loss over time (Eschenbeck et al., 2018; Richardson et al., 2020; Vierhaus et al., 2007; Wong, 2015). Relatively few recent studies examining coping strategies have included samples of adults, and further research with

adults is needed to determine if coping strategies are being measured appropriately in this population (Diehl et al., 2014; Frydenberg, 2014; Heffer & Willoughby, 2017).

### **Overlap Between Terms**

Coping includes direct strategies or actions taken following a stressor and resilience is the result of continued coping strategies that affect or modify behavior before a stressor occurs (Glennie, 2010). When looking holistically at the terms, there is an overlap (Berger, 2017; Traunmüller et al. 2021), and confusion may arise from the extent to which resilience and coping are interrelated (Li & Miller, 2016). An important distinguishing factor between coping and resilience relates to the concepts of coping strategies and trait resilience. Individuals will utilize available supplies of internal motivation, initiative, and support to safeguard, acquire, or reinstate previously lost supplies (Hobfoll et al., 2006). A framework was proposed to consider various aspects of an individual's needs during a traumatic event, their available psychosocial resources, and coping behaviors post-event. In this work, researchers discovered a link between social support and resilience that could have a moderating effect on avoidant-coping strategies, such that those with less social support and resilience experienced stronger Post-Traumatic Stress Symptoms (PTSS) and negative coping strategies (Bistricky et al., 2019). These findings suggest that resilience may affect the outcome of coping, and use of positive or negative coping strategies may influence future resilience (Levine et al., 2009).

Coping and resilience are described as two distinct constructs in the literature, but many empirical articles use the terms interchangeably (de la Fuente et al., 2021; Eley et al., 2013; Ewart et al., 2002; Gooding et al., 2012; Kimhi & Eshel, 2009). This suggests that there is a misunderstanding about the differences between these constructs among researchers and practitioners. Some of the articles cited above reference both resilience

and coping but only include measures of one construct. Similarly, some of the cited articles refer to the development of measures that assess both resilience and coping characteristics, but the measure only assesses a single construct (Kimhi & Eshel, 2009). This could lead to confusion between the terms and have readers infer the concepts are the same (Ewart et al., 2002; Graham & Thurston, 2005). Further, the use of subscales in measure development is crucial to construct validity (Kyriazos & Stalikas, 2018), and many measures of coping and resilience either do not utilize subscales, have subscales with similar names, or use items from measures of the other construct.

Although the functions and development of resilience and coping are related, it is not clear from current empirical literature what aspects of the constructs are shared and unique. As a result, many researchers use measures of the constructs, as well as the terms, without considering the differences in the constructs (Rice & Liu, 2016b). Research is needed to further differentiate resilience and coping using measures that account for both what is shared between, and what is unique to, each construct.

### **Present Study**

Empirical literature, particularly literature about the use and development of measures, appears to treat resilience and coping similarly. For example, many items included in measures of resilience and coping are worded similarly even though they are designed to assess different constructs. The primary purpose of this study is to examine frequently used measures of resilience and coping to determine their similarity. It is hypothesized that measures of resilience and coping will be strongly, and positively, associated with each other. For measures with subscales, it is also hypothesized that the subscales will be strongly, and positively, associated with each other.

## CHAPTER II: METHODOLOGY

### **Participants**

Two hundred thirty-seven individuals participated in the study during the Fall 2022 semester. Four participants were excluded from the study for not agreeing to consent or not completing the survey. The remaining 233 participants were at least 18 years old at the time of participation, enrolled as students at a suburban university, and recruited through the university's SONA Research Participant Pool System. Most participants were undergraduate ( $n = 189$ , 81.12%) or graduate students ( $n = 37$ , 15.88%), but a few participants were enrolled as non-degree seeking students/post-baccalaureate students or did not disclose their status ( $n = 7$ , 3.00%).

Participants ranged from 18 to 65 years of age ( $Mdn = 23.00$ ,  $IQR = 6.00$ ), and one participant did not disclose their age. Participants predominantly identified as Hispanic/Latinx/Spanish ( $n = 87$ , 37.34%) or White/Caucasian ( $n = 78$ , 33.48%). Several participants also identified as Multiracial ( $n = 24$ , 10.30%), African American/Black/African ( $n = 20$ , 8.58%), Asian/Asian American ( $n = 15$ , 6.44%), Arab American/Middle Eastern/North African ( $n = 5$ , 2.15%), Native Hawaiian/Pacific Islander ( $n = 3$ , 1.29%), or American Indian/Native American/Alaska Native ( $n = 1$ , 0.43%). Most participants identified as cisgender female ( $n = 172$ , 73.82%) or cisgender male ( $n = 44$ , 18.88%), but several identified as nonbinary ( $n = 12$ , 5.15%), transgender male ( $n = 1$ , 0.43%), transgender female ( $n = 1$ , 0.43%), or self-identified using another identity (e.g., genderfluid, agender, bisexual;  $n = 3$ , 1.29%). Most participants identified as 100% heterosexual (i.e., straight;  $n = 129$ , 55.36%), mostly heterosexual, but somewhat attracted to members of their own sex ( $n = 41$ , 17.60%), and bisexual (i.e., attracted to men and women equally;  $n = 33$ , 14.16%). Participants also reported

pansexual (i.e., attracted to people of all gender identities;  $n = 15$ , 6.44%), 100% homosexual (i.e., gay/lesbian;  $n = 9$ , 3.86%), asexual (i.e., not really attracted to anyone;  $n = 3$ , 1.29%), mostly homosexual but somewhat attracted to members of the opposite sex ( $n = 1$ , 0.43%). A few self-identified using a different term (e.g., “queer”; and “bisexual and asexual”;  $n = 2$ , 0.86%).

Most participants reported they were single, not currently dating ( $n = 97$ , 41.63%), followed by being in a committed relationship, not cohabitating ( $n = 61$ , 26.18%), married ( $n = 33$ , 14.16%), cohabitating, but not married ( $n = 20$ , 8.58%), or casually dating ( $n = 18$ , 7.73%). Fewer participants selected they were divorced ( $n = 2$ , 0.86%), separated ( $n = 1$ , 0.43%), and one participant selected “other,” but did not provide further information on their relationship status ( $n = 1$ , 0.43%). Most participants did not have children ( $n = 191$ , 81.97%). Several participants were actively working ( $n = 153$ , 65.67%). The number of hours worked per week ranged from 4.00 – 100.00 hours ( $Mdn = 30.00$ ,  $IQR = 20.00$ ) and averaged approximately 30.23 hours per week ( $SD = 14.09$ ), with 20.17% ( $n = 47$ ) of employed participants reporting working the equivalent of full-time hours (i.e., 40 hours) during a typical week. Most participants reported they had not served in the military ( $n = 207$ , 88.84%), while several were active duty ( $n = 2$ , 0.86%), veterans ( $n = 10$ , 4.29%), dependent/child of a servicemember ( $n = 6$ , 2.58%), military spouses ( $n = 6$ , 2.58%), spouse/veteran ( $n = 2$ , 0.86%), or identified using a different term (e.g., “other” and “affiliated”;  $n = 2$ , 0.86%).

### **Procedure**

Following CPHS approval, participants were recruited through the SONA participant pool. After signing up for the study, participants were given access to the link for the study on Qualtrics. After clicking the link, participants reviewed the informed consent form and acknowledged their understanding of the study and willingness to

participate. If a participant did not agree to the informed consent, they were not able to advance to the survey. After agreeing to participate, participants completed the survey on Qualtrics. On average, participants took 50.82 minutes ( $n = 233$ ,  $SD = 421.85$ ) with a median completion time of 9.32 minutes ( $IQR = 5.32$ ). Participants were presented with items from commonly used coping and resilience measures and demographic questions. Participants who completed this study received credit toward a course research participation requirement or extra credit for a course. All participants in SONA are assigned a random number as an identifier, ensuring participant identities cannot be linked to their answers in online studies.

### **Measures**

The following measures were chosen from a database of widely available coping and resiliency measures. While these are not the only measures available for these constructs, they are representative of the most widely used in the field (Fisher & Law, 2021; Kato, 2015). The measures used were selected for their internal reliability and validity within the construct, specificity for content contained, and overall length. Literature for the Brief-COPE, CD-RISC, and BRS have provided detailed information stating these measures are important measures of their respective constructs (Sánchez et al., 2021; Schure et al., 2013; Solberg et al., 2022). The BRCS was designed as a combined resiliency and coping measure, while the RAS is one of the newest measures designed specifically for resilience assessment and shows promise with a variety of populations and samples, especially within the context of demonstrating resilience to depression, suicidal ideation, and self-harm (Johnson et al., 2010; Wermelinger Ávila et al., 2017).

## **Coping Measures**

### ***Brief-COPE Questionnaire***

The Brief-COPE Questionnaire (BCQ) is a redesigned version of the Full-COPE (Carver et al., 1989), a self-report measure designed to assess coping strength, response, and style in adults following a stressful life event. The BCQ comprises twenty-eight items separated into fourteen subscales of two items (Carver, 1997; Rzeszutek, 2018). The fourteen subscales reflect three general coping styles: Problem-Focused, Emotion-Focused, or Avoidant (Dias et al., 2012). The measure uses a four-point scale of “(1) I haven’t been doing this at all” to “(4) I’ve been doing this a lot” to determine the amount an individual may be engaging in a particular behavior or coping style. Scoring the measure reveals an individual’s overarching general coping style, as well as coping strategies. The measure has been validated in many populations (García et al., 2018; Hanfstingl et al., 2023; Krägeloh, 2011; Rahman et al., 2021). The BCQ has been used in research for decades, and many of the articles referenced in this study cited Carver and colleagues (1989) when referring to coping. The BCQ was used in the current study to determine overall coping style, and the sum of the items was used in the analyses. The internal consistency of the BCQ in the current sample was  $\alpha = .85$ .

### ***Brief Resilient Coping Scale***

The Brief Resilient Coping Scale (BRCS) is a four-item measure developed to assess an individual’s adaptive coping, resiliency strategies to stress, and use of active problem solving when under stressful events (Sinclair & Wallston, 2004). The measure utilizes a five-point scale of “(1) Does not describe me at all” to “(5) Describes me very well.” A sum score is derived from adding the responses together and ranges from 4 to 20, with a higher score suggesting more resilient coping strategies (Kocalevent et al.,

2017). This study utilized the sum scores. The internal consistency of the BRCS in the current sample was  $\alpha = .66$ .

## **Resiliency Measures**

### ***Connor-Davidson Resiliency Scale (27 Item)***

The Connor-Davidson Resiliency Scale (27 Item; CD-RISC 27) is a self-report measure assessing an individual's ability to cope with stress and identify individual resilience techniques. Items are phrased in the first-person, and the characteristics measured include humor, patience, self-efficacy, and faith. The measure uses a five-point scale of "(0) Not true at all" to "(4) True nearly all the time." Items are scored and summed, and a higher score suggests a better perceived resilience to stressors and increased coping ability (Connor & Davidson, 2003; Dong et al., 2013). The internal consistency of the CD-RISC 27 in the current sample was  $\alpha = .91$ .

### ***Resiliency Appraisals Scale***

The Resiliency Appraisals Scale (RAS) is a 12-item self-report measure assessing an individual's internal appraisal of resiliency and positivity and is comprised of subscales related to emotional coping, situational coping, and social support (Johnson et al., 2010). The measure has been used in various populations to assess individual reactions to stressors and evaluate resilience/coping strategies that may be utilized in response to the same stressors (Gooding et al., 2012; Tur Porcar et al., 2020). The RAS uses a five-point scale of "(1) Strongly disagree" to "(5) Strongly agree." Scores are summed from subscales, with higher scores indicative of more positive self-regard (Johnson et al., 2010). This study utilized the subscale scores to compare coping and resilience strategies from other measures. The internal consistency of the RAS in the current sample was  $\alpha = .88$ .

### ***Brief Resilience Scale***

The Brief Resilience Scale (BRS) is a 6-item measure for assessing an individual's perceived capacity to recuperate from experienced stress. The measure uses a five-point scale of “(1) Strongly disagree” to “(5) Strongly agree” and phrases items both negatively and positively. Negatively worded items are reverse scored. Scores for all items are summed and averaged by the number of items answered, and a higher average score suggests more resilience to experienced stress (Smith et al., 2008). The measure was validated through four separate samples comprised of undergraduate students, cardiac rehabilitation patients, and a sample of women with and without fibromyalgia. The internal consistency of the BRS in the current sample was  $\alpha = .79$ .

### ***Demographics***

The demographic questions in this study were part of a larger set of demographics and included age, gender identity, sexual orientation, relationship status, degree program and college admittance, tuition sources, employment status, living situation, high school status, ethnicity, family of origin and structure, and veteran status.

### ***Analytic Overview***

Descriptive statistics (i.e., frequency, percentage, mean, median, standard deviation, and IQR) were examined for the demographics and primary variables for the study. Pearson correlations were used to examine associations among the CD-RISC, BCQ, RAS, BRCS, and BRS.

## CHAPTER III:

### RESULTS

#### Descriptive Statistics

##### Connor Davidson Resiliency Scale (27 Item) (CD-RISC 27)

Participants reported somewhat high perceived resilience to stressors on the CD-RISC 27 ( $M = 76.55$ ,  $SD = 15.82$ ). Scores on this measure ranged from 27 to 108 ( $Mdn = 77.00$ ,  $IQR = 19.00$ ), and the maximum score possible for the measure was 108.

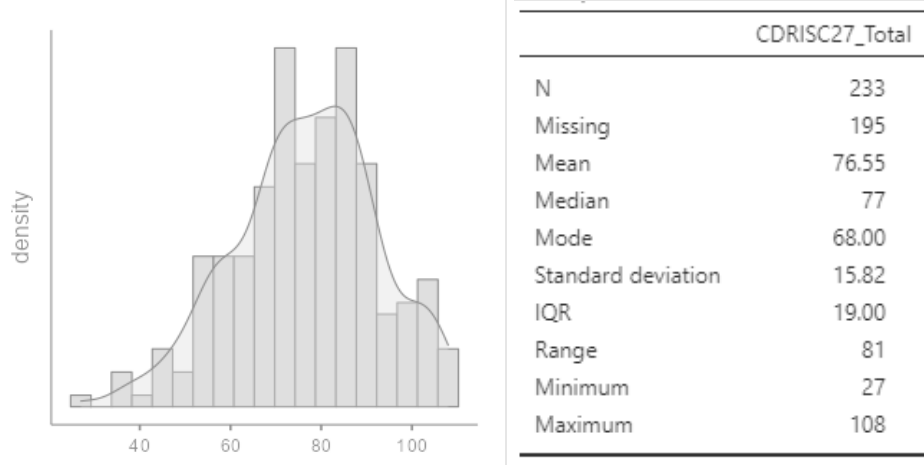


Figure 1.1: CD-RISC 27 Frequency Distribution and Descriptive Statistics

##### Brief COPE Questionnaire (BCQ)

The BCQ has three subscales, and participants reported the highest average scores for emotion coping ( $M = 30.85$ ,  $SD = 6.12$ ), followed by problem-solving ( $M = 23.09$ ,  $SD = 4.71$ ) and avoidant styles ( $M = 15.96$ ,  $SD = 4.30$ ). Problem-focused coping scores ranged from 8 to 32 ( $Mdn = 23.00$ ,  $IQR = 5.00$ ), and the highest score possible for the subscale was 32. Emotion-focused coping scores ranged from 12 to 34 ( $Mdn = 31.00$ ,  $IQR = 8.00$ ), and the highest score possible for the subscale was 48. Avoidant-focused coping scores ranged from 8 to 28 ( $Mdn = 15.00$ ,  $IQR = 6.00$ ), and the highest score possible for the subscale was 32.

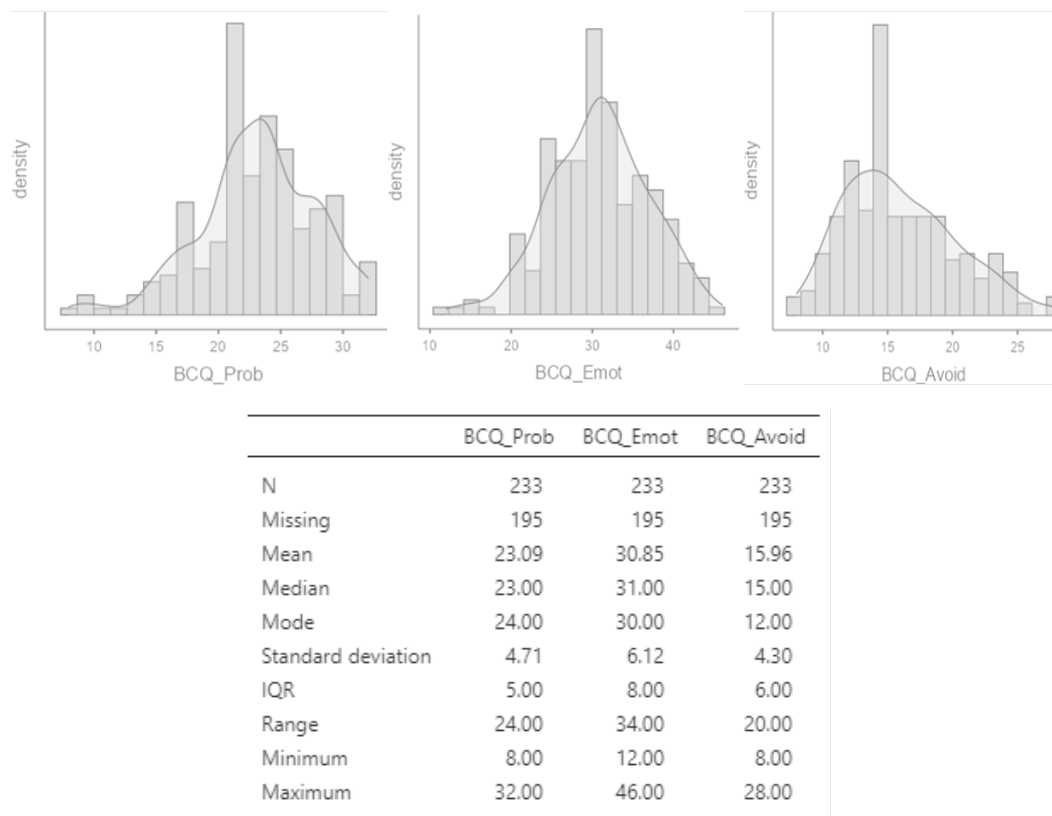


Figure 1.2: BCQ Subscales Frequency Distributions and Descriptive Statistics

### Resiliency Appraisal Scales (RAS)

The RAS has three subscales, and participants reported the highest average scores for emotional coping ( $M = 16.21$ ,  $SD = 2.55$ ), followed by social support ( $M = 15.91$ ,  $SD = 2.75$ ), and situational coping ( $M = 15.37$ ,  $SD = 3.03$ ). Emotional coping scores ranged from 8 to 20 ( $Mdn = 16.00$ ,  $IQR = 3.00$ ), and the highest score possible for the subscale was 20. Social support scores ranged from 3 to 20 ( $Mdn = 16.00$ ,  $IQR = 3.00$ ), and the highest score possible for the subscale was 20. Situational coping scores ranged from 8 to 20 ( $Mdn = 16.00$ ,  $IQR = 4.00$ ), and the highest score possible for the subscale was 20.

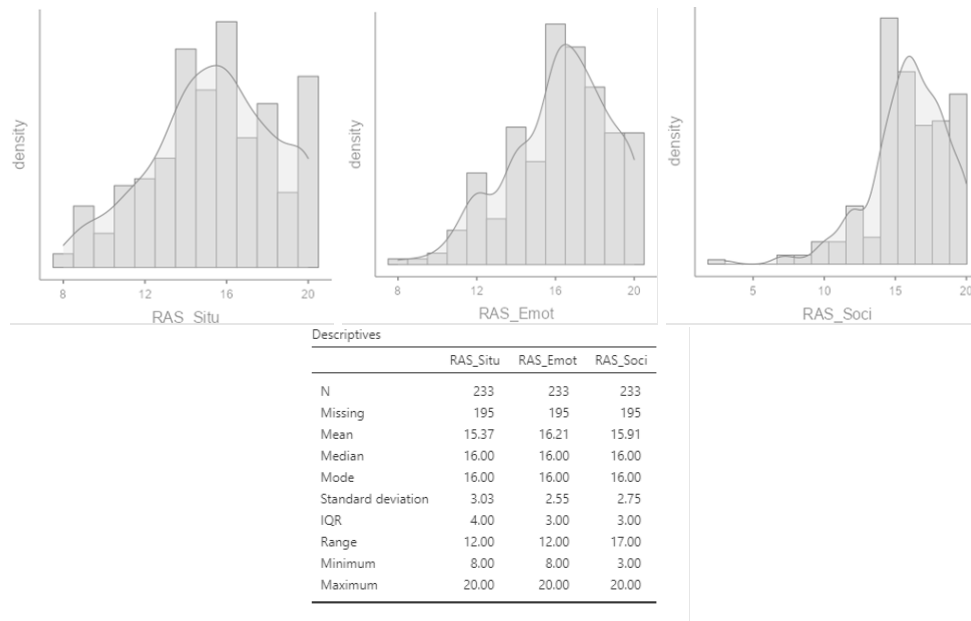


Figure 1.3: RAS Subscales Frequency Distributions and Descriptive Statistics

### Brief Resilience Coping Scale (BRCS)

Participants reported somewhat high perceived resilient coping strategies on the BRCS ( $M = 15.42$ ,  $SD = 2.66$ ). Scores on this measure ranged from 6 to 20 ( $Mdn = 15.00$ ,  $IQR = 3$ ), and the highest score possible for the measure was 20.

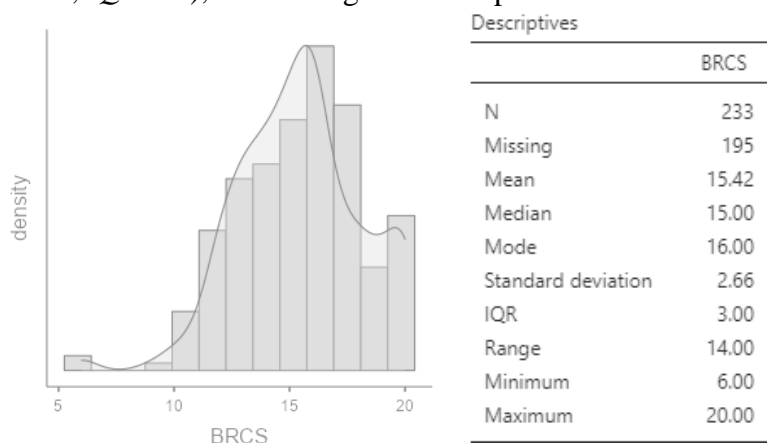


Figure 1.4: BRCS Frequency Distribution and Descriptive Statistics

## Brief Resilience Scale (BRS)

Participants reported a higher-than-average ability to recuperate from experienced stressors ( $M = 18.79$ ,  $SD = 4.55$ ). Scores on this measure ranged from 9 to 30 ( $Mdn = 18.00$ ,  $IQR = 6$ ), and the highest possible score for the measure was 30.

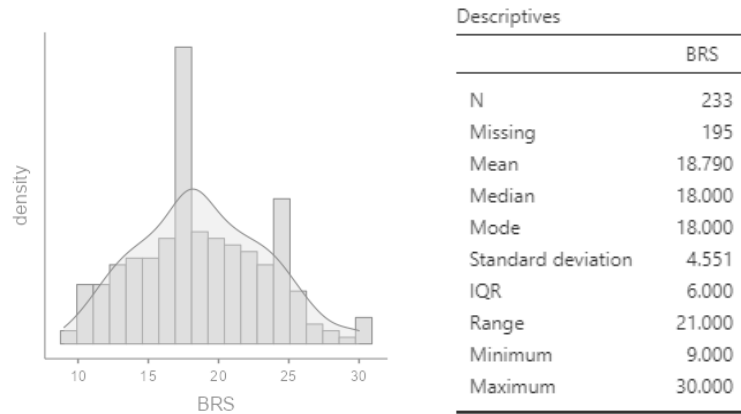


Figure 1.5: BRS Frequency Distribution and Descriptive Statistics

## Inferential Statistics

Correlation Matrix		CDRISC_Total	BCQ_Prob	BCQ_Emot	BCQ_Avoid	RAS_Situ	RAS_Emot	RAS_Soci	BRCS	BRS
CDRISC_Total	Pearson's r	—								
	p-value	—								
BCQ_Prob	Pearson's r	0.3029***	—							
	p-value	< .001	—							
BCQ_Emot	Pearson's r	0.1194	0.6082***	—						
	p-value	0.069	< .001	—						
BCQ_Avoid	Pearson's r	-0.1928**	0.0988	0.4407***	—					
	p-value	0.003	0.133	< .001	—					
RAS_Situ	Pearson's r	0.6001***	0.1797**	-0.0576	-0.3041***	—				
	p-value	< .001	0.006	0.381	< .001	—				
RAS_Emot	Pearson's r	0.5664***	0.2167***	0.0624	-0.2385***	0.6539***	—			
	p-value	< .001	< .001	0.343	< .001	< .001	—			
RAS_Soci	Pearson's r	0.5188***	0.2407***	0.1199	-0.1954**	0.6440***	0.7942***	—		
	p-value	< .001	< .001	0.068	0.003	< .001	< .001	—		
BRCS	Pearson's r	0.5337***	0.3440***	0.1720**	-0.0441	0.5469***	0.4386***	0.5074***	—	
	p-value	< .001	< .001	0.009	0.503	< .001	< .001	< .001	—	
BRS	Pearson's r	0.5038***	0.0973	-0.2029**	-0.3636***	0.6029***	0.4162***	0.3757***	0.3700***	—
	p-value	< .001	0.139	0.002	< .001	< .001	< .001	< .001	< .001	—

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 1.1: Correlation Matrix Between Measures

### **Connor Davidson Resiliency Scale (27 Item) (CD-RISC 27)**

#### ***BCQ***

CD-RISC 27 was significantly associated with problem-focused ( $r = .30, p < .001$ ) and avoidant-focused ( $r = -.19, p < .01$ ) coping and strategies, as measured using the BCQ, and the associations met the criteria for a medium and small effect size, respectively. The CD-RISC 27 was not associated with emotion-focused coping and strategies ( $r = .12, p = .07$ ), as measured using the BCQ.

#### ***RAS***

CD-RISC 27 was significantly associated with situational coping ( $r = .60, p < .001$ ), emotional coping ( $r = .57, p < .001$ ), and social support ( $r = .52, p < .001$ ), as measured using the RAS, and all associations met the criteria for a large effect size.

#### ***BRCS***

CD-RISC 27 was significantly associated with adaptive coping and use of active problem solving ( $r = .53, p < .001$ ), as measured using the BRCS, and the association met the criteria for a large effect size.

#### ***BRS***

CD-RISC 27 was significantly associated with perceived capacity to recuperate from experienced stressors ( $r = .50, p < .001$ ), as measured using the BRS, and the association met the criteria for a large effect size.

### **Brief COPE Questionnaire (BCQ)**

#### ***Associations Among BCQ Subscales***

The problem-focused BCQ subscale was significantly associated with emotion-focused coping and strategies ( $r = .61, p < .001$ ), and the association met the criteria for a large effect size. The problem-focused BCQ was not associated with avoidant-focused coping and strategies ( $r = .10, p = .13$ ). The emotion-focused BCQ was significantly

associated with the avoidant-focused coping and strategies ( $r = .44, p < .001$ ) and met the criteria for a medium effect size.

### ***RAS***

The BCQ problem-focused subscale was significantly associated with situational coping ( $r = .18, p < .01$ ), emotional coping ( $r = .22, p < .001$ ), and social support ( $r = .24, p < .001$ ), as measured using the RAS, and all associations met the criteria for a small effect size.

The BCQ avoidant-focused subscale was significantly associated with situational coping ( $r = -.30, p < .001$ ), emotional coping ( $r = -.24, p < .001$ ), and social support ( $r = -.20, p < .01$ ), as measured using the RAS, and all associations met the criteria for medium and small effect sizes, respectively.

The BCQ emotion-focused subscale was not significantly associated with situational coping ( $r = -.06, p = .38$ ), emotional coping ( $r = .06, p = .34$ ), and social support ( $r = .12, p = .07$ ), as measured using the RAS.

### ***BRCS***

The BCQ problem-focused subscale was significantly associated with resilient coping strategies ( $r = .34, p < .001$ ), as measured using the BRCS, and the association met the criteria for a medium effect size.

The BCQ emotion-focused subscale was significantly associated with resilient coping strategies ( $r = .17, p < .01$ ), as measured using the BRCS, and the association met the criteria for a small effect size.

The BCQ avoidant-focused subscale was not significantly associated with resilient coping strategies ( $r = -.04, p = .50$ ), as measured using the BRCS.

### ***BRS***

The BCQ emotion-focused subscale was significantly associated with perceived recuperation from stressors ( $r = -.20, p < .01$ ), as measured using the BRS, and the association met the criteria for a small effect size.

The BCQ avoidant-focused subscale was significantly associated with perceived recuperation from stressors ( $r = -.36, p < .001$ ), as measured using the BRS, and the association met the criteria for a medium effect size.

The BCQ problem-focused subscale was not significantly associated with perceived recuperation from stressors ( $r = .10, p = .14$ ), as measured using the BRS.

### **Resiliency Appraisal Scales (RAS)**

#### ***Associations Among RAS Subscales***

The situational coping RAS subscale was significantly associated with emotional coping ( $r = .65, p < .001$ ) and social support ( $r = .64, p < .001$ ), and the associations met the criteria for a large effect size. The emotional coping RAS subscale was significantly associated with social support ( $r = .79, p < .001$ ), and the association met the criteria for a large effect size.

### ***BRCS***

The RAS situational coping subscale was significantly associated with resilient coping strategies ( $r = .55, p < .001$ ), as measured using the BRCS, and the association met the criteria for a large effect size.

The RAS emotional coping subscale was significantly associated with resilient coping strategies ( $r = .44, p < .001$ ), as measured using the BRCS, and the association met the criteria for a medium effect size.

The RAS social support subscale was significantly associated with resilient coping strategies ( $r = .51, p < .001$ ), as measured using the BRCS, and the association met the criteria for a large effect size.

### ***BRS***

The RAS situational coping subscale was significantly associated with perceived capacity to recuperate from experienced stressors ( $r = .60, p < .001$ ), as measured using the BRS, and the association met the criteria for a large effect size.

The RAS emotional coping subscale was significantly associated with perceived capacity to recuperate from experienced stressors ( $r = .42, p < .001$ ), as measured using the BRS, and the association met the criteria for a medium effect size.

The RAS social support subscale was significantly associated with perceived capacity to recuperate from experienced stressors ( $r = .38, p < .001$ ), as measured using the BRS, and the association met the criteria for a medium effect size.

### **Brief Resilience Coping Scale (BRCS)**

BRCS was significantly associated with perceived capacity to recuperate from experienced stressors ( $r = .37, p < .001$ ), as measured using the BRS, and the association met the criteria for a medium effect size.

## CHAPTER IV:

### DISCUSSION

Most of the resilience and coping measures used in this study were significantly associated, with small to medium effect sizes, indicating they overlap in some way. Research suggests that both researchers and clinicians may be confused about differences among resilience and coping (Berger, 2017; Li & Miller, 2016; Traunmuller et al., 2021). For example, Rice and Liu (2016a; 2016b) found that researchers may not consider fundamental differences between resilience and coping when measures are being developed, and the findings from the current study may reflect how resilience and coping have been used interchangeably in some measures. The associations among the measures in the current study suggest that there are similarities in the instruments. When examining the items in the measures, there are several items with similar wording or content (e.g., “I’ve been making jokes about it”, “I try to see the humorous side”, “If faced with a setback, I could probably find a way around the problem”, “I look for creative ways to alter difficult situations”, “I’ve been trying to find comfort in my religion or spiritual beliefs”, “Fate or God helps me”). In addition, the measures ask about general behaviors rather than specific situations or contexts. These similarities may explain the overlap in the measures, and future research should examine if measures of resilience and coping that have distinct items or specific framing are able to assess the unique facets of the constructs.

The Emotion-Focused subscale of the BCQ was only correlated with the BRS from the measures of resilience, which suggests that the BCQ Emotion-Focused subscale items may reflect specific aspects of coping behavior engagement, particularly emotion-focused coping, rather than aspects of coping that could also reflect resilience. Carver and colleagues (1989) found that emotion- and problem-focused coping styles are connected

but use different strategies and behaviors. Items in the BCQ measure behaviors, including what an individual may do in the face of adversity (Greenaway et al., 2014). It is possible that coping measures that focus on coping behaviors, especially in specific contexts, may be able to more clearly differentiate from measures of resilience compared to coping measures that include items about other aspects of coping. It would be beneficial for future research to further examine the behavioral items in measures of coping to determine how these items may be capturing unique aspects of coping that other items may be missing. Similar to the potential importance of item content for measures of coping, measuring resilience as a trait within an individual may help to differentiate the construct from active coping abilities and determine what personal characteristics are present, or absent, in an individual (Bistricky et al., 2019). Measures of resilience should focus on an individual's internal beliefs, capacity to withstand, or 'bounce back,' from distress, or ability to moderate the effects of stressful experiences through trait development (e.g., inquisitiveness; self-control; caring for self or others; Sivaratnam et al., 2022). The CD-RISC and BRS, which were correlated in the current study, appear to assess trait resilience, but the items in the RAS seem better suited to detecting coping styles and strategies employed after exposure to a stressor or traumatic event. Future research should examine whether items assessing trait resilience in measures of resilience capture unique aspects of the construct compared to items assessing other aspects of resilience.

In addition to examining trait resilience, it would be helpful for measures of resilience to include items that address an individual's capacity to return to baseline functioning (Southwick et al, 2014), or even develop better capacities (Bonanno, 2004) after exposure to a traumatic experience or stressor. Coping and resilience influence each other, especially how an individual engages with perceived stressors and threats in the

environment (Van der Hallen et al., 2020). Exposure to stress and adaptation of coping strategies has shown a moderating and regulating effect on stress, resulting in future resilience (Leipold et al, 2019). In turn, resilience influences the coping strategies displayed when facing stressors. Attempts to develop a joint measure of coping and resilience have, thus far, assessed coping rather than both constructs (Rice & Liu, 2016a; 2016b). Developing a measure that utilizes separate subscales for both coping and resilience using items that assess unique aspects of the constructs, such as items assessing coping behaviors or trait resilience, could not only provide a measure that assesses both constructs but would also allow for examination of interactions between coping and resilience. This type of measure would provide meaningful information to researchers and clinicians, who could use information about clients' coping and resilience when making treatment decisions.

The CD-RISC, RAS, and BRS, which are all measures of resilience, were not as strongly correlated as expected, and the differences may be due to the items and focus of the measures. The CD-RISC was designed to measure resilient traits in individuals and assess for response to treatment (Connor & Davidson, 2003), the RAS was created to evaluate an individual's response to life stressors and the monitoring of suicide risk (Johnson et al, 2010), and the BRS quantifies the ability to overcome, recover, and function at, or above, normal baselines when exposed to stress (Smith et al., 2008). Resilience measures, including the measures in the current study, are usually developed to address shortcomings of existing measures or for very selective purposes. Of the existing measures of resilience, the BRS has been widely accepted for its ease of use and ability to capture trait resilience in multiple populations (Kyriazos et al., 2018), but no measure has been recognized as the benchmark for the construct (Windle et al., 2011). Future measure development should include items similar to those in existing measures

that assess unique aspects of resilience, particularly trait resilience and a return to baseline functioning.

The BCQ and BRCS, which are coping measures, also did not correlate as strongly as expected. The items in the BRCS examine positive outcomes during or after physical and psychological stressors (Sinclair & Wallston, 2004), and the measure seems to be limited to describing an individual's baseline coping skills. The BCQ utilizes items from the COPE Inventory (Full-COPE; Carver et al, 1989) and was designed to assess coping style strength and responses in adults following a stressful life experience (Carver, 1997). Research has found that the BCQ is an effective measure for assessing an individual's use of coping skills and strategies during and after a stressor (Gurvich et al., 2021), and the findings from the current study are consistent with previous literature. Researchers and clinicians examining an individual's response to experienced stressors would benefit from using the BCQ, especially if they intend to capture unique aspects of coping (Daniels & Harris, 2005; Lazarus & Folkman, 1984).

### **Limitations**

Participants were recruited from one university, which may not be representative of other college students or adults in the general population. In addition, participants were primarily students in one college at the university, which may not be representative of the population of the students at the university, and recruiting participants who were not in SONA may have yielded more diverse participants. An additional question inquiring about participant's major may have yielded more information about the sample's characteristics. Researchers also did not ask about the number of courses or credit hours participants were completing and including a question about number of courses and/or credit hours could have provided further information about the current sample. Finally, other commonly used measures of coping and resilience were not included in the study,

and these measures may capture the constructs differently than those included in the current study. For instance, the Resilience Scale for Adults (RSA) was not included due to the length (33 items) and problems with items that did not translate well from Norwegian (Friborg et al., 2003). The Coping Self-Efficacy Scale (CSES) was also not included because it has not been used in the general community (Chesney et al., 2006). Future studies would benefit from examining these, and other, measures of coping and resilience that were not included in the current study.

### **Conclusion**

This study explored the potential overlap between commonly used measures of resilience and coping. The results suggest that the measures of resilience and coping included in the study are similar, to an extent, but the measures are still capturing unique aspects of the constructs. Future research examining the item content of the measures may help with the development of measures that are more specific to the intended constructs and could be used in research and clinical applications.

## REFERENCES

- Afek, A., Ben-Avraham, R., Davidov, A., Berezin Cohen, N., Ben Yehuda, A., Gilboa, Y., & Nahum, M. (2021). Psychological resilience, mental health, and inhibitory control among youth and young adults under stress. *Frontiers in Psychiatry, 11*, 1–12. <https://doi.org/10.3389/fpsyt.2020.608588>
- Ahern, N. R., Kiehl, E. M., Lou Sole, M., & Byers, J. (2006). A review of instruments measuring resilience. *Issues in Comprehensive Pediatric Nursing, 29*(2), 103–125. <https://doi.org/10.1080/01460860600677643>
- Aldwin, C. M., & Revenson, T. A. (1987). Does coping help? A reexamination of the relation between coping and mental health. *Journal of Personality and Social Psychology, 53*(2), 337–348. <https://doi.org/10.1037/0022-3514.53.2.337>
- Amai, K., & Hojo, D. (2021). Early adolescent psychological adaptation differences by stress-coping profiles: A latent transition analysis. *Anxiety, Stress & Coping, 35*(5), 574–591. <https://doi.org/10.1080/10615806.2021.1980782>
- American Psychological Association. (2015a). Coping. In *APA Dictionary of Psychology* (2nd ed., p. 252). American Psychological Association.
- American Psychological Association. (2015b). Resilience. In *APA Dictionary of Psychology* (2nd ed., p. 910). American Psychological Association.
- Amirkhan, J. H. (1990). A factor analytically derived measure of coping: The coping strategy indicator. *Journal of Personality and Social Psychology, 59*(5), 1066–1074. <https://doi.org/10.1037/0022-3514.59.5.1066>

- Berger, R. (2017). An ecological-systemic approach to resilience: A view from the trenches. *Traumatology*, 23(1), 35–42. <https://doi.org/10.1037/trm0000074>
- Biggs, A., Brough, P., & Drummond, S. (2017). Lazarus and Folkman's psychological stress and coping theory. In C. L. Cooper & J. C. Quick (Eds.), *The Handbook of Stress and Health: A Guide to Research and Practice* (pp. 349–364). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118993811>
- Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine*, 4(2), 139–157. <https://doi.org/10.1007/BF00844267>
- Bistricky, S. L., Long, L. J., Lai, B. S., Gallagher, M. W., Kannenberg, H., Elkins, S. R., Harper, K. L., Short, M. B. (2019). Surviving the storm: Avoidant coping, helping behavior, resilience and affective symptoms around a major hurricane-flood. *Journal of Affective Disorders*, 257(1), 297–306. <https://doi.org/10.1016/j.jad.2019.07.044>
- Bolgar, M. R., Janelle, C., & Giacobbi, P. R. (2008). Trait anger, appraisal, and coping differences among adolescent tennis players. *Journal of Applied Sport Psychology*, 20(1), 73–87. <https://doi.org/10.1080/10413200701790566>
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *The American Psychologist*, 59(1), 20–28. <https://doi.org/10.1037/0003-066X.59.1.20>
- Bowes, L., & Jaffee, S. R. (2013). Biology, genes, and resilience: Toward a multidisciplinary approach. *Trauma, Violence, & Abuse*, 14(3), 195–208.

- Carpenter, S. (2018). Ten steps in scale development and reporting: A guide for researchers. *Communications, Methods, and Measures*, 12(1), 25–44.  
<https://doi.org/10.1080/19312458.2017.1396583>
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief Cope. *International Journal of Behavioral Medicine*, 4(1), 92–100.  
[https://doi.org/10.1207/s15327558ijbm0401\\_6](https://doi.org/10.1207/s15327558ijbm0401_6)
- Carver, C. S. (1998). Resilience and thriving: Issues, models, and linkages. *Journal of Social Issues*, 54(2), 245–266. <https://doi.org/10.1111/j.1540-4560.1998.tb01217.x>
- Carver, C. S., Weintraub, J. K., & Scheier, M. F. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56(2), 267–283. <https://doi.org/10.1037//0022-3514.56.2.267>
- Casey, B. J., Tottenham, N., Liston, C., & Durston, S. (2005). Imaging the developing brain: What have we learned about cognitive development? *Trends in Cognitive Sciences*, 9, 104–110. <https://doi.org/10.1016/j.tics.2005.01.011>
- Chen, E., Langer, D. A., Raphaelson, Y. E., & Matthews, K. A. (2004). Socioeconomic status and health in adolescents: The role of stress interpretations. *Child Development*, 75(4), 1039–1052. <https://doi.org/10.1111/j.1467-8624.2004.00724.x>
- Chesney, M. A., Neilands, T. B., Chambers, D. B., Taylor, J. M., & Folkman, S. (2006). A validity and reliability study of the Coping Self-Efficacy Scale. *British Journal of Health Psychology*, 11(3), 421–437. <https://doi.org/10.1348/135910705X53155>

- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18*(2), 76–82. <https://doi.org/10.1002/da.10113>
- Curtis, W. J., & Cicchetti, D. (2007). Emotion and resilience: A multilevel investigation of hemispheric electroencephalogram asymmetry and emotion regulation in maltreated and nonmaltreated children. *Development and Psychopathology, 19*(3), 811–840. <https://doi.org/10.1017/S0954579407000405>
- Curtis, W., & Nelson, C. (2003). Toward building a better brain: Neurobehavioral outcomes, mechanisms, and processes of environmental enrichment. In S. Luthar (Ed.), *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities* (pp. 463-488). Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511615788.021>
- Daniels, K. & Harris, C. (2005). A daily diary study of coping in the context of the job demands-control-support model. *Journal of Vocational Behavior, 66*, 1–30. <https://doi.org/j.jvb.2004.10.004>
- Davydov, D. M., Stewart, R., Ritchie, K., & Chaudieu, I. (2010). Resilience and mental health. *Clinical Psychology Review, 30*(5), 479–495. <https://doi.org/10.1016/j.cpr.2010.03.003>
- de la Fuente, J., Santos, F. H., Garzón-Umerenkova, A., Fadda, S., Solinas, G., & Pignata, S. (2021). Cross-sectional study of resilience, positivity and coping strategies as predictors of engagement-burnout in undergraduate students:

- Implications for prevention and treatment in mental well-being. *Frontiers in Psychiatry*, 12, 1–16. <https://doi.org/10.3389/fpsyt.2021.596453>
- Denckla, C. A., Cicchetti, D., Kubzansky, L. D., Seedat, S., Teicher, M. H., Williams, D. R., & Koenen, K. C. (2020). Psychological resilience: An update on definitions, a critical appraisal, and research recommendations. *European Journal of Psychotraumatology*, 11(1), 1–18. <https://doi.org/10.1080/20008198.2020.1822064>
- Dias, C., Cruz, J. F., & Fonseca, A. M. (2012). The relationship between multidimensional competitive anxiety, cognitive threat appraisal, and coping strategies: A multi-sport study. *International Journal of Sport and Exercise Psychology*, 10(1), 52–65. <https://doi.org/10.1080/1612197X.2012.645131>
- Diehl, M., Chui, H., Hay, E. L., Lumley, M. A., Grün, D., & Labouvie-Vief, G. (2014). Change in coping and defense mechanisms across adulthood: Longitudinal findings in a European-American sample. *Developmental Psychology*, 50(2), 634–648. <https://doi.org/10.1037/a0033619>
- Dong, F., Nelson, C., Shah-Haque, S., Khan, A., & Ablah, E. (2013). A modified CD-RISC: Including previously unaccounted for resilience variables. *Kansas Journal of Medicine*, 6(1), 1–10. <https://doi.org/10.17161/kjm.v6i1.11430>
- Eley, D. S., Cloninger, C. R., Walters, L., Laurence, C., Synnott, R., & Wilkinson, D. (2013). The relationship between resilience and personality traits in doctors: Implications for enhancing well being. *PeerJ*, 1, 1–16. <https://doi.org/10.7717/peerj.216>

- El-Sheikh, M., & Harger, J. (2001). Appraisals of marital conflict and children's adjustment, health, and physiological reactivity. *Developmental Psychology*, 37(6), 875–885. <https://doi.org/10.1037/0012-1649.37.6.875>
- Eschenbeck, H., Schmid, S., Schröder, I., Wasserfall, N., & Kohlmann, C.-W. (2018). Development of coping strategies from childhood to adolescence: Cross-sectional and longitudinal trends. *European Journal of Health Psychology*, 25(1), 18–30. <https://doi.org/10.1027/2512-8442/a000005>
- Ewart, C. K., Jorgensen, R. S., Suchday, S., Chen, E., & Matthews, K. A. (2002). Measuring stress resilience and coping in vulnerable youth: The social competence interview. *Psychological Assessment*, 14(3), 339–352. <https://doi.org/10.1037/1040-3590.14.3.339>
- Firth, N., Greaves, D., & Frydenberg, E. (2010). Coping styles and strategies: A comparison of adolescent students with and without learning disabilities. *Journal of Learning Disabilities*, 43(1), 77–85. <https://doi.org/10.1177/0022219409345010>
- Fisher, D. M., & Law, R. D. (2021). How to choose a measure of resilience: An organizing framework for resilience measurement. *Applied Psychology*, 70(2), 643–673. <https://doi.org/10.1111/apps.12243>
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, 21(3), 219–239. <https://doi.org/10.2307/2136617>

- Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, 55(1), 745–774.  
<https://doi.org/10.1146/annurev.psych.55.090902.141456>
- Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for adult resilience: What are the central protective resources behind healthy adjustment?. *International Journal of Methods in Psychiatric Research*, 12(2), 65–76. <https://doi.org/10.1002/mpr.143>
- Frydenberg, E. (2014). Coping research: Historical background, links with emotion, and new research directions on adaptive processes. *Australian Journal of Psychology*, 66(2), 82–92. <https://doi.org/10.1111/ajpy.12051>
- García, F. E., Barraza-Peña, C. G., Włodarczyk, A., Alvear-Carrasco, M., & Reyes-Reyes, A. (2018). Psychometric properties of the Brief-COPE for the evaluation of coping strategies in the Chilean population. *Psicologia: Reflexão e Crítica*, 31(22), 1–11. <https://doi.org/10.1186/s41155-018-0102-3>
- Glennie, E. J. (2010). Coping and resilience. In Rosen, J. A., Glennie, E. J., Dalton, B. W., Lennon, J. M., & Bozick, R. N. (Eds.), *Noncognitive skills in the classroom: New perspectives on educational research* (pp. 169-194). RTI Press.  
<https://doi.org/10.3768/rtipress.2010.bk.0004.1009>
- Gooding, P. A., Hurst, A., Johnson, J., & Tarrier, N. (2012). Psychological resilience in young and older adults: Resilience in the young and the older adults. *International Journal of Geriatric Psychiatry*, 27(3), 262–270. <https://doi.org/10.1002/gps.2712>

- Graham J. M. & Thurston W. E. (2005). Overcoming adversity: Resilience & coping mechanisms developed by recent immigrant women living in the inner city of Calgary, Alberta. *Women's Health and Urban Life* 4(1), 63-80.  
[https://tspace.library.utoronto.ca/bitstream/1807/4265/1/Graham\\_Thurston.pdf](https://tspace.library.utoronto.ca/bitstream/1807/4265/1/Graham_Thurston.pdf)
- Greenaway, K. H., Louis, W. R., Parker, S., Kalokerinos, E. K., Smith, J. R., & Terry, D. J. (2014). Successful coping for psychological well-being. In G. Boyle, D. H. Saklofsk, & G. Matthews (Eds.), *Measures of Personality and Social Psychological Constructs* (pp. 322–351). Oxford: Elsevier.  
<https://doi.org/10.1016/B976-0-12-386915-9.00012-7>
- Gurvich, C., Thomas, N., Thomas, E. H., Hudaib, A. R., Sood, L., Fabiatos, K., Sutton, K., Isaacs, A., Arunogiri, S., Sharp, G., & Kulkarni, J. (2021). Coping styles and mental health in response to societal changes during the COVID-19 pandemic. *International Journal of Social Psychiatry*, 67(5), 540-549.  
<https://doi.org/10.1177/0020764020961790>
- Hanfstingl, B., Gnambs, T., Fazekas, C., Göll, K. I., Matzer, F., & Tikvić, M. (2023). The Dimensionality of the Brief COPE Before and During the COVID-19 Pandemic. *Assessment*, 30(2), 287–301. <https://doi.org/10.1177/10731911211052483>
- Halstead, M., Johnson, S. B., & Cunningham, W. (1993). Measuring coping in adolescents: An application of the Ways of Coping Checklist. *Journal of Clinical Child Psychology*, 22(3), 337–344. [https://doi.org/10.1207/s15374424jccp2203\\_4](https://doi.org/10.1207/s15374424jccp2203_4)

- Heath, C., Sommerfield, A., & von Ungern-Sternberg, B. S. (2020). Resilience strategies to manage psychological distress among healthcare workers during the COVID-19 pandemic: A narrative review. *Anaesthesia*, 75(10), 1364–1371.  
<https://doi.org/10.1111/anae.15180>
- Heffer, T., & Willoughby, T. (2017). A count of coping strategies: A longitudinal study investigating an alternative method to understanding coping and adjustment. *PLOS ONE*, 12(10), 1–16. <https://doi.org/10.1371/journal.pone.0186057>
- Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). What is resilience? *The Canadian Journal of Psychiatry*, 56(5), 258–265.  
<https://doi.org/10.1177/070674371105600504>
- Hobfoll, S. E., Canetti-Nisim, D., & Johnson, R. J. (2006). Exposure to terrorism, stress-related mental health symptoms, and defensive coping among Jews and Arabs in Israel. *Journal of Consulting and Clinical Psychology*, 74(2), 207–218.  
<https://doi.org/10.1037/0022-006X.74.2.207>
- Johnson, J., Gooding, P. A., Wood, A. M., & Tarrier, N. (2010). Resilience as positive coping appraisals: Testing the Schematic Appraisals Model of Suicide (SAMS). *Behaviour Research and Therapy*, 48(3), 179–186.  
<https://doi.org/10.1016/j.brat.2009.10.007>
- Kato, T. (2015). Frequently used coping scales: A meta-analysis. *Stress and Health*, 31(4), 315–323. <https://doi.org/10.1002/smi.2557>

- Kimhi, S. & Eshel, Y. (2009). Individual and public resilience and coping with long-term outcomes of war. *Journal of Applied Biobehavioral Research*, 14(2), 70-89.  
<https://doi.org/10.1111/j.1751-9861.2009.00041.x>
- Krägeloh, C. (2011). A systemic review of studies using the Brief-COPE: Religious coping in factor analyses. *Religions*, 2(1), 1–31.  
<https://doi.org/10.3390/rel2030216>
- Kocalevent, R., Zenegar, M., Hinz, A., Klapp, B., & Brähler, E. (2017). Resilient coping in the general population: Standardization of the Brief Resilient Coping Scale (BRCS). *Health and Quality of Life Outcomes*, 15(251), 1-8.  
<https://doi.org/10.1186/s12955-017-0822-6>
- Kyriazos, T., & Stalikas, A. (2018). Applied psychometrics: The steps of scale development and standardization process. *Psychology*, 9(1), 2531-2560.  
<https://doi.org/10.4236/psych.2018.911145>
- Kyriazos, T. A., Stalikas, A., Prassa, K., Galanakis, M., Yotsidi, V., & Lakioti, A. (2018). Psychometric evidence of the Brief Resilience Scale (BRS) and modeling distinctiveness of resilience from depression and stress. *Psychology*, 9(1), 1828-1857. <https://doi.org/10.4236/psych.2018.97107>
- Leipold, B., Munz, M., & Michéle-Malkowsky, A. (2019). Coping and resilience in the transition to adulthood. *Emerging Adulthood*, 7(1), 12–20.  
<https://doi.org/10.1177/2167696817752950>

- Levine, S. Z., Laufer, A., Stein, E., Hamama-Raz, Y., & Solomon, Z. (2009). Examining the relationship between resilience and posttraumatic growth: Resilience and Growth. *Journal of Traumatic Stress*, 22(4), 282–286.
- Li, W. W., & Miller, D. J. (2017). The impact of coping and resilience on anxiety among older Australians. *Australian Journal of Psychology*, 69(4), 263-272.  
<https://doi.org/10.1111/ajpy.12152>
- Luthar, S. S., & Cicchetti, D. (2000). The construct of resilience: Implications for interventions and social policies. *Development and Psychopathology*, 12(4), 857–885. <https://doi.org/10.1017/S0954579400004156>
- Métais, C., Burel, N., Gillham, J. E., Tarquinio, C., & Martin-Krumm, C. (2022). Integrative review of the recent literature on human resilience: From concepts, theories, and discussions towards a complex understanding. *Europe's Journal of Psychology*, 18(1), 98–119. <https://doi.org/10.5964/ejop.2251>
- Miller, G. E., Chen, E., & Parker, K. J. (2011). Psychological stress in childhood and susceptibility to the chronic diseases of aging: Moving toward a model of behavioral and biological mechanisms. *Psychological Bulletin*, 137(6), 959–997.  
<https://doi.org/10.1037/a0024768>
- Morales-Rodriguez, F. M., Martínez-Ramón, J. P., Méndez, I., & Ruiz-Esteban, C. (2021). Stress, coping, and resilience before and after COVID-19: A predictive model based on artificial intelligence in the university environment. *Frontiers in Psychology*, 12, 1–15. <https://doi.org/10.3389/fpsyg.2021.647964>

- Morgado, F. F. R., Meireles, J. F. F., Neves, C. M., Amaral, A. C. S., & Ferreira, M. E. C. (2018). Scale development: Ten main limitations and recommendations to improve future research practices. *Psicologia: Reflexão e Crítica*, 30(3), 1–20. <https://doi.org/10.1186/s4115-016-0057-1>
- Nusslock, R. & Miller, G. (2015). Early-life adversity and physical and emotional health across the lifespan: A neuroimmune network hypothesis. *Biological Psychiatry*, 80(1), 23–32. <https://doi.org/10.1016/j.biopsych.2015.05.017>
- Park, C. L., Russell, B. S., Fendrich, M., Finkelstein-Fox, L., Hutchison, M., & Becker, J. (2020). Americans' COVID-19 stress, coping, and adherence to CDC guidelines. *Journal of General Internal Medicine*, 35(8), 2296–2303. <https://doi.org/10.1007/s11606-020-05898-9>
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior*, 19(1), 2–21. <https://doi.org/10.2307/2136319>
- Prout, T. A., Malone, A., Rice, T., & Hoffman, L. (2019). Resilience, defense mechanisms, and implicit emotion regulation in psychodynamic child psychotherapy. *Journal of Contemporary Psychotherapy*, 49(4), 235–244. <https://doi.org/10.1007/s10879-019-09423-w>
- Rahman, H. A., Issa, W. B., & Naing, L. (2021). Psychometric properties of Brief-COPE Inventory among nurses. *BMC Nursing*, 20(73), 1–7. <https://doi.org/10.1186/s12912-021-00592-5>
- Rice, V., & Liu, B. (2016a). Personal resilience and coping with implications for work. Part I: A review. *Work*, 54(2), 325–333. <https://doi.org/10.3233/WOR-162300>

- Rice, V., & Liu, B. (2016b). Personal resilience and coping. Part II: Identifying resilience and coping among U.S. military service members and veterans with implications for work. *Work*, 54(2), 335–350. <https://doi.org/10.3233/WOR-162301>
- Richardson, C. E., Magson, N. R., Fardouly, J., Forbes, M. K., Johnco, C. J., Rapee, R. M. (2020). Longitudinal associations between coping strategies and psychopathology in pre-adolescence. *Journal of Youth and Adolescence*, 50, 1189–1204. <https://doi.org/10.1007/s10964-020-01330-x>
- Rudzinski, K., McDonough, P., Gartner, R., & Strike, C. (2017). Is there room for resilience? A scoping review and critique of substance use literature and its utilization of the concept of resilience. *Substance Abuse Treatment, Prevention, and Policy*, 12(1), 1–35. <https://doi.org/10.1186/s13011-017-0125-2>
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57(3), 316–331. <https://doi.org/10.1111/j.1939-0025.1987.tb03541.x>
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24(2), 335–344. <https://doi-org/10.1017/S0954579412000028>
- Rzeszutek, M. (2018). Health-related quality of life and coping strategies among people living with HIV: The moderating role of gender. *Archives of Women's Mental Health*, 21(3), 247–257. <https://doi.org/10.1007/s00737-017-0801-2>
- Sánchez, Estrada-Hernández, N., Booth, J., & Pan, D. (2021). Factor structure, internal reliability, and construct validity of the Brief Resilience Scale (BRS): A study on

- persons with serious mental illness living in the community. *Psychology and Psychotherapy*, 94(3), 620–645. <https://doi.org/10.1111/papt.12336>
- Schure, M. B., Odden, M., & Goins, R. T. (2013). The association of resilience with mental and physical health among older American Indians: The native elder care study. *American Indian and Alaska Native Mental Health Research*, 20(2), 27–41. <https://doi.org/10.5820/aian.2002.2013.27>
- Sinclair, V. G. & Wallston, K. A. (2004). The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*, 11(1), 94-101. <https://doi.org/10.1177/1073191103258144>
- Sisto, A., Vicinanza, F., Campanozzi, L. L., Ricci, G., Tartaglini, D., & Tambone, V. (2019). Towards a transversal definition of psychological resilience: A literature review. *Medicina*, 55(11), 1–22. <https://doi.org/10.3390/medicina55110745>
- Sivaratnam, J., Peterman Cabano, E. M., & Erickson, T. M. (2022). Character virtues prospectively predict responses to situational stressors in daily life in clinical and subclinical samples. *Anxiety, Stress & Coping* 35(4), 458-473. <https://doi.org/10.1080/10615806.2021.1967333>
- Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, 129, 216–269. <https://doi.org/10.1037/0033-2909.129.2.216>
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The Brief Resilience Scale: Assessing the ability to bounce back. *International*

- Journal of Behavioral Medicine*, 15(3), 194–200.  
<https://doi.org/10.1080/10705500802222972>
- Solberg, M., Gridley, M. K., & Peters, R. M. (2022). The factor structure of the Brief-COPE: A systematic review. *Western Journal of Nursing Research*, 44(6), 612–627. <https://doi.org/10.1177/01939459211012044>
- Somerfield, M. R., & McCrae, R. R. (2000). Stress and coping research: Methodological challenges, theoretical advances, and clinical applications. *The American Psychologist*, 55(6), 620–625. <https://doi.org/10.1037/0003-066X.55.6.620>
- Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*, 5(1), 1–14.  
<https://doi.org/10.3402/ejpt.v5.25338>
- Southwick, S. M., & Charney, D. S. (2012). The science of resilience: Implications for the prevention and treatment of depression. *Science*, 338(6103), 79–82.  
<https://doi.org/10.1126/science.1222942>
- Stoeber, J., & Janssen, D. P. (2011). Perfectionism and coping with daily failures: positive reframing helps achieve satisfaction at the end of the day. *Anxiety, Stress, & Coping*, 24(5), 477–497. <https://doi.org/10.1080/10615806.2011.562877>
- Thome, J., & Espelage, D. L. (2004). Relations among exercise, coping, disordered eating, and psychological health among college students. *Eating Behaviors*, 5(4), 337–351. <https://doi.org/10.1016/j.eatbeh.2004.04.002>

- Traunmüller, C., Stefitz, R., Schneider, M., & Schwerdtfeger, A. (2021). Resilience moderates the relationship between the psychological impact of COVID-19 and anxiety. *Psychology, Health & Medicine*. Advance online publication. <https://doi.org/10.1080/13548506.2021.1955137>
- Tur Porcar, A. M., Cuartero Monteagudo, N., Gea-Caballero, V., & Juárez-Vela, R. (2020). Resilience scale psychometric study. Adaptation to the Spanish population in nursing students. *International Journal of Environmental Research and Public Health*, 17(12), 1–11. <https://doi.org/10.3390/ijerph17124602>
- Ungar, M., Ghazinour, M., & Richter, J. (2013). Annual research review: What is resilience within the social ecology of human development?: Resilience in the social ecology of human development. *Journal of Child Psychology and Psychiatry*, 54(4), 348–366. <https://doi.org/10.1111/jcpp.12025>
- Van der Hallen, R., Jongerling, J., & Godor, B. P. (2020). Coping and resilience in adults: A cross-sectional network analysis. *Anxiety, Stress, & Coping*, 33(5), 479–496. <https://doi.org/10.1080/10615806.2020.1772969>
- Vierhaus, M., Lohaus, A., & Ball, J. (2007). Developmental changes in coping: Situational and methodological influences. *Anxiety, Stress, and Coping*, 20, 267–282. <https://doi.org/10.1080/10615800701330242>
- Wang, M. C., & Gordon, E. W. (Eds.). (1994). *Educational resilience in inner-city America: Challenges and prospects*. L. Erlbaum Associates.
- Wermelinger Ávila, M. P., Lucchetti, A. L. G., & Lucchetti, G. (2017). Association between depression and resilience in older adults: A systematic review and meta-

- analysis. *International Journal of Geriatric Psychiatry*, 32(3), 237–246.  
<https://doi.org/10.1002/gps.4619>
- Werner, E. E. (1993). Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study. *Development and Psychopathology*, 5(4), 503–515.  
<https://doi.org/10.1017/S095457940000612X>
- Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science*, 4(3), 81–84. <https://doi.org/10.1111/1467-8721.ep10772327>
- Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology*, 21(2), 152–169.  
<https://doi.org/10.1017/S0959259810000420>
- Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes*, 9(1), 1–18.  
<https://doi.org/10.1186/1477-7525-9-8>
- Wong, M. (2015). A longitudinal study of children’s voices in regard to stress and coping during the transition to school. *Early Child Development and Care*, 186(6), 927–946. <https://doi.org/10.1080/03004430.2015.1068769>
- Wu, Y., Yu, W., Wu, X., Wan, H., Wang, Y., & Lu, G. (2020). Psychological resilience and positive coping styles among Chinese undergraduate students: A cross-sectional study. *BMC Psychology*, 8(1), 1–11. <https://doi.org/10.1186/s40359-020-00444-y>
- Zhang, M., Zhang, J., Zhang, F., Zhang, L., & Feng, D. (2018). Prevalence of psychological distress and the effects of resilience and perceived social support

- among Chinese college students: Does gender make a difference?. *Psychiatry Research*, 267, 409–413. <https://doi.org/10.1016/j.psychres.2018.06.038>
- Zimmer-Gembeck, M. J., & Skinner, E. A. (2011). Review: The development of coping across childhood and adolescence: An integrative review and critique of research. *International Journal of Behavioral Development*, 35(1), 1–17. <https://doi.org/10.1177/0165025410384923>
- Zimmer-Gembeck, M. J., & Skinner, E. A. (2016). The development of coping: Implications for psychopathology and resilience. In D. Cicchetti (Ed.), *Developmental psychopathology: Risk, resilience, and intervention* (pp. 485–545). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781119125556.devpsy410>