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# Posttraumatic Stress, Depression, and Subjective Social Status: Potential Moderating Effects of Optimism, Resilience, and Self-Efficacy

Caterina Obenauf
crossie@vols.utk.edu

To the Graduate Council:

I am submitting herewith a thesis written by Caterina Obenauf entitled "Posttraumatic Stress, Depression, and Subjective Social Status: Potential Moderating Effects of Optimism, Resilience, and Self-Efficacy." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

Gina P. Owens, Major Professor

We have read this thesis and recommend its acceptance:

Dawn Szymanski, Kirsten Gonzalez

Accepted for the Council:
Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

# Posttraumatic Stress, Depression, and Subjective Social Status: Potential Moderating Effects of Optimism, Resilience, and Self-Efficacy

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Caterina Obenauf

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## Abstract

The present study investigated the potential moderating effects of optimism, resilience, and self-efficacy on the relationships between subjective social status and both posttraumatic stress and depression symptom severity in a sample of undergraduate students (*N* = 382, M = 19.4, SD = 1.6, 81.5% White, 60.9% cisgender women) who reported experiencing one or more traumatic events. Many participants reported the highest education level attained by at least one parent being beyond a college degree (69%). Participants completed measures assessing trauma history, subjective social status, PTSD and depression symptoms, and potential psychological resources of optimism, resilience, and self-efficacy. In the model predicting depression severity, results showed that low SSS predicted more severe depression symptoms after controlling for SES. After controlling for SES and SSS, low optimism, resilience, and self-efficacy were significant predictors of higher depression symptom severity. In the model predicting PTSS severity, low optimism and resilience were the only significant predictors of higher PTSS. Moderation analyses showed that the relationships between subjective social status and symptoms of posttraumatic stress and depression were not moderated by optimism, resilience, and self-efficacy. These findings could have potential implications for the focus of treatment with young adult survivors of trauma across social classes.



*Keywords:* PTSD, depression, social status, optimism, resilience, self-efficacy

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# Chapter 1

## Introduction

The association between low socioeconomic status (SES) and experiencing more traumatic events is well-established (e.g., Assari, 2020; Read et al., 2011; Schwartz et al., 2005). Individuals from family backgrounds with higher income and education levels tend to report less trauma exposure in childhood (Assari, 2020). In addition, lifetime rates of exposure to specific traumatic events, such as physical violence, unwanted sexual encounters, and life-threatening accidents, are higher among those from low SES backgrounds (Read et al., 2011). Along with a higher risk for trauma exposure, individuals with low SES are also more likely to have an increased risk for posttraumatic stress disorder (PTSD; e.g., Alim et al., 2006; Read et al., 2011) and depression (e.g., Galea et al., 2007; Kar & Bastia, 2006). The lifetime prevalence of PTSD in the general population is estimated to be between 5 to 12% (Breslau et al., 1991; Kessler et al., 1995; Resnick et al., 1993), with higher rates (~50%) in populations of individuals with low socioeconomic status (Gillespie et al., 2009; Gluck et al., 2021).

Despite the higher prevalence of PTSD in low SES communities relative to higher SES communities, the individual association between SES and posttraumatic stress symptoms (PTSS) is modest (Brewin et al., 2000; Read et al., 2011; Sareen, 2014). Other factors, such as experiencing significant life stress after trauma exposure (Brewin et al., 2000), having a non-White minority identity (Read et al., 2011), and experiencing more interpersonal forms of trauma like childhood abuse (Powers et al., 2015; Read et al., 2011), are more strongly associated with mental health outcomes like posttraumatic stress and depression symptoms among low SES communities. A low SES background, however, does not directly lead to a greater risk of experiencing trauma and worse resulting mental health outcomes. Rather, mental health outcomes related to SES, like depression symptoms and PTSS, may result from the chronic and

substantially elevated levels of social stress from inequities in access and quality of education, healthcare, careers, and housing.

However, other factors beyond low SES may contribute to poor mental health outcomes. For example, an individual's internalization of the societal implications of their SES may influence their mental health. This internalization, called subjective social status (SSS), is a more personal measure of social status and is associated with several symptoms of poor mental health beyond the effects of SES (Adler et al., 2008; Galvan et al., 2022). Further investigation of specific factors that could contribute to the association between SES and adverse mental health outcomes like posttraumatic stress and depression symptoms after trauma exposure is needed. Identifying stress-buffering factors that can ease the severity of posttraumatic stress and depression symptoms is of increasing interest.

The relationship between SSS and trauma is understudied, and to the authors' knowledge, buffering factors in this relationship have not yet been examined. Moderating effects of stress-buffering factors, such as optimism, resilience, and self-efficacy, may exist that could weaken the association between SSS and trauma outcomes. Thus, the purpose of the present study was to explore the relationships among SSS, optimism, resilience, self-efficacy, and two trauma-related outcomes (posttraumatic stress and depression symptoms) in a trauma-exposed sample of college students at a large, public university in the United States.

**Subjective Social Status**

Subjective social status was originally defined as an individual's belief about their place in society's hierarchy (Davis, 1956). SSS reflects an individual's holistic assessment of past, current, and future individual and family resources, opportunities, social circumstances, and socioeconomic prospects, which may or may not be congruent with their objective socioeconomic status (Singh-Manoux et al., 2003). In an early, hallmark study, SSS was

suggested to combine objective indicators of SES, like income and education, with lived experiences of stress, adversity, discrimination, and feelings of belonging which all affect one's perception of their place in society (Jackman & Jackman, 1973). Individuals who do not identify with others of their objective socioeconomic class (i.e., their SSS is not congruent with their SES) may feel separated from their SES class and identify with others of a different socioeconomic class position, which can lead to inter-class resentment and in-group preferences (Rosenberg, 1953).

Historically, measurement of SSS has varied. Initial studies assessed SSS with scales consisting of personality items from the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1940), without including objective SES items (Gough, 1949). Differences between scores on SES scales and SSS scales were posited to be meaningful distinctions that could predict future changes in status position, but this scale had moderate to low validity coefficients (.68 in initial samples and .52 in later samples) and test-retest reliability (.87 in initial samples and .50 in later samples). Later researchers commonly used a single item scale that asked participants to place themselves in one of four class categories (lower, working, middle, or upper class), but the reliability of this scale is questionable (Kluegel et al., 1977).

More recent studies have assessed SSS using the MacArthur Scale of Subjective Social Status, which is more valid and reliable (Adler et al., 2000; Singh-Manoux et al., 2003; Singh-Manoux et al., 2005). This scale asks an individual to indicate their position on a ladder, where the higher the rung on the ladder one determines themselves to be on, the higher their SSS relative to others in their society. While early researchers determined SSS to largely reflect one's objective and quantifiable SES circumstances like income and education (Jackman & Jackman, 1973), Galvan et al. (2022) found that SSS as measured by the MacArthur scale more strongly reflects non-economic social status and lived experiences of social status like power and prestige.

On all measures of SSS, a meaningful gap consistently exists between one's SES and SSS. Early research focused on identifying potential reasons for this gap. For example, Jackman and Jackman (1973) speculated that having a minoritized racial identity (Black American) affords a sense of low prestige that overcomes the effects of achieved SES indicators like higher income and education on one's SSS. This same study identified social factors like perceived class of friends and neighbors which influence SSS beyond the effects of objective SES. Other early studies focused on moderating factors that contribute to the SES health gradient that demonstrates greater health outcomes among those with higher SES. Adler et al. (1994) wrote an impactful review that highlighted the effects of social ordering or hierarchies on the relationship between SES and health outcomes, where it was argued that hierarchical social position may have a direct effect on physical health.

More recent research has focused on this gap between SES and SSS as it pertains to SSS better predicting health outcomes. On its own, low SSS has been frequently associated with maladaptive health behaviors like substance misuse and lack of exercise, eating, and sleep, as well as poor mental, physical, and self-rated health (Zell et al., 2018). Specifically, some research has indicated that adolescents with low SSS are at greater risk of lower psychological well-being and self-esteem; higher levels of general health symptoms like headaches, back pain, and cardiovascular health; and lower self-rated health compared to those with high SSS (Quon & McGrath, 2014; Singh-Manoux et al., 2005). Additionally, Schubert et al. (2016) experimentally manipulated SSS by presenting participants with a video that discussed the MacArthur Scale of SSS ladder and asked participants to either think about what made them different than those at the top of the ladder (low status group) or what made them different from those at the bottom of the ladder (high status group). Their findings demonstrated that those with low SSS reported greater severity and frequency of negative and depressive cognitions and rumination than

individuals with high SSS (Schubert et al., 2016). Singh-Manoux et al. (2005) argued that low SSS produces negative emotions that can also lead to poorer health outcomes through neuroendocrine mechanisms.

Several studies have explored the gap between SES and SSS by exploring whether the effect of SSS on various psychophysiological outcomes is due to SES. Adler et al. (2000) found that low SSS was associated with elevated heart rate, sleep issues, chronic stress, pessimism, and active and passive coping styles, even after controlling for both SES and negative affectivity. Cundiff and Matthews (2017) found in a meta-analysis that associations between low SSS and poor health outcomes remained significant across various studies, even after controlling for SES. Interestingly, this association was observed to be stronger among white individuals compared to Black individuals. Zell et al. (2018) similarly found that low SSS more strongly predicted poorer mental health (e.g., depression, anxiety), health behaviors (e.g., smoking, drinking), physical health (e.g., heart disease, cancer), and self-rated health comparted to SES.

Some researchers (e.g., Adler et al., 2000) suggest that differences between SES and SSS are due to the link between SSS and psychological factors like a sense of control over life and active coping, and inversely related to chronic stress and pessimism, which is believed to predispose individuals to better health outcomes. To further investigate why SSS predicts health above SES, Galvan et al. (2022) recently studied the relationships among SES, SSS, and mental and physical health outcomes. SES circumstances and social status were found to be separate constructs. Results also indicated that lived experiences of social status like power and prestige are what mostly drive the associations between low SSS and poor mental and physical health outcomes found in several previous studies (e.g., Cundiff & Matthews, 2017; Zell et al., 2018).

Social stress theory could inform the separation between SSS and SES in predicting poor health outcomes. Social stress theory attributes the increased risk for poor mental health

outcomes to the cumulative impact of numerous social stressors like decreased prestige and power and increased social implications of poverty (Aneshensel, 1992; Pearlin & Bierman, 2013). These social stressors quickly deplete stress-buffering psychological resources, which reduces the ability of an individual with low SSS to cope with acute stress and trauma after chronic and cumulative exposure to social stressors like poverty (Turner, 2013). Despite this, many individuals who have experienced great socioeconomic adversity demonstrate that they have a remarkable amount of psychological resources that help in overcoming adversity afforded by low SES (Charney, 2004; Saban et al., 2019). However, it is not yet known how these psychological resources contribute to the relationship between SSS and mental health outcomes after trauma.

**Psychological Resources**

Psychological resources like optimism, resilience, and self-efficacy often help individuals cope better with stress and trauma and may lead to enhanced mental health outcomes. Despite the general psychological benefits of these resources, they can be depleted after experiences of trauma or chronic stress, and this depletion can also be observed among those from low SES backgrounds (Boehm et al., 2015). Despite many studies linking SSS and numerous poor physical and mental health outcomes across many different populations, the relation between SSS and mental health after trauma exposure has not been widely studied.

The reserve capacity model posits that individuals with low SES have strained psychological resources, like feelings of control and optimism, to deal with challenges after chronic exposure to stressful events like trauma (Gallo, 2009). Repeated trauma exposure could prevent those with low SSS from strengthening or replenishing their stress-coping resources, thus potentially increasing risk for poor mental health outcomes like PTSD and depression after trauma exposure. Thus, it is important to understand whether psychological resources are

moderating factors in the link between SSS and mental health outcomes after trauma, especially since these resources are malleable and could be more easily nurtured in therapeutic settings compared to SSS and SES.

### *Dispositional Optimism*

Dispositional optimism is the generalized belief that good events will happen and is considered a psychological resource that predicts positive mental and physical health outcomes (Rasmussen et al., 2009). Seligman (2006) found that the cognitions that underlie optimism relate to explanatory styles, which are how individuals explain the experience and purpose of an event to themselves. A pessimistic explanatory style when encountering setbacks can lead to learned helplessness and, subsequently, depression symptoms. Despite this, optimism can be learned through challenging the negative beliefs and cognitions that result from negative explanatory styles and learned helplessness (Seligman, 2006).

People with a high optimistic outlook report better mental health outcomes after trauma such as less severe depression symptoms (Chang et al., 2011; Puskar et al., 1999) and PTSS (Gil & Weinberg, 2015), as well as greater posttraumatic growth (Bostock et al., 2009). Some research suggests that optimists may use active coping strategies when encountering adversity, and therefore, cope better with stress and negative emotions (Chang et al., 2011). Individuals with greater optimism are more likely to persist and report less self-defeating behaviors related to depression (Scheier et al., 1994). Optimists are more likely to believe the future holds positive opportunities and to think positively of adverse and distressing events, which may protect against the negative cognitive symptoms associated with poor mental health after trauma, like posttraumatic stress and depression symptoms.

Optimism has been shown to be related to indicators of both SES (e.g., education and income; Heinonen et al., 2006) and SSS (e.g., perceived occupational prestige and educational

achievement; Boehm et al., 2015). Higher income households and families with high educational attainment may foster more effective coping strategies and goal persistence in their children, which positively reinforce optimistic behaviors and lead to adults with higher base levels of optimism (Rasmussen et al., 2006). These findings are consistent with the reserve capacity model which indicates how the development of optimism may be negatively impacted among those of low SES backgrounds; more experiences of socioeconomic adversity (e.g., underserved neighborhoods, poverty) may lead to decreased development of psychological resources like optimism that can be used to manage new stressful or traumatic events (Gallo, 2009).

***Resilience***

Another factor that may moderate the effects of SSS is psychological resilience, which refers to the cognitive processes associated with overcoming events of stress and adversity (Meredith et al., 2011). Resilience can be learned and developed; therefore, it is considered a consolidation of behaviors, thoughts, and previous responses to adverse life circumstances instead of a personality trait (Meredith et al., 2011; Saban et al., 2019). The relationship between resilience and adversity is thought to be U-shaped and quadratic in nature; moderate levels of stress result in greater resilience, while lower or greater amounts of stress result in lower resilience (Seery et al., 2010). Consistent with this quadratic relationship, individuals with some previous adverse life experiences demonstrate the least amount of distress after recent adverse experiences and demonstrate greater resilience (Seery et al., 2010). Similarly, this quadratic relationship has also been observed between resilience and PTSS (Seery et al., 2010).

Much like in social stress theory (Aneshensel, 1992), the relationship between greater amounts of stress and lower resilience may be explained by the effects of cumulative stressors, such as SES and adversity, which can diminish an individual's ability to adaptively cope with stress (Saban et al., 2019). For example, a sample of adult Black women reported lower overall

levels of resilience and SSS than the general population, which may be attributed to the devaluation of individuals with the Black identity in addition to oppression and systemic inequity in a White dominant society (Saban et al., 2019; Williams, 2018). Interestingly, Black women with high SSS in this same sample had greater levels of resilience (Saban et al., 2019). As proposed by the social stress model, cumulative social stressors may strain the psychological resources of individuals with low SES, supporting the quadratic relationship between adversity and resilience (Saban et al., 2019). Moderate levels of adversity may have helped these individuals learn how to cope more effectively and build resilience to deal with challenges after adverse events like trauma.

The link between resilience and SES has implications for biological responses to stress. Higher resilience is associated with reduced activation of the stress response systems which are more sensitive for individuals who have experienced chronic and cumulative socioeconomic adversity (Charney, 2004; Saban et al., 2019). Higher levels of resilience also have been linked to more effective responses to stress exposure, which suggests that resilience may have a stress-buffering effect against the development of potentially more severe posttraumatic stress and depression symptoms after trauma exposure (Carnevali et al., 2018). Based on these findings, in addition to the social stress model, the current study investigated the relationship between SSS and resilience, and we investigated whether resilience may moderate the effects of SSS on trauma-related outcomes.

### *Generalized Self-Efficacy*

An individual's confidence about their own ability to produce a desired outcome is referred to as self-efficacy (Bandura, 1997) and is another potential moderator of the relationship between SSS and trauma-related outcomes. Higher self-efficacy is associated with adaptive

responses to stress (Bandura, 1997). Lower self-efficacy is associated with greater depression symptoms and lower subjective well-being (Cutrona & Troutman, 1986).

Individuals of low SES tend to endorse a lower sense of self-efficacy and control over their lives, and they may attribute adverse outcomes to social context or circumstance instead of themselves (Kraus et al., 2009). Individuals with low SSS similarly tend to endorse low self-efficacy (Quiroga-Garza et al., 2018). This is thought to be due to chronic and cumulative socioeconomic adversity, which could contribute to feelings of both low self-efficacy and low SSS (Kraus et al., 2012). As suggested from the reserve capacity model, cumulative experiences of stress could strain psychological resources, which may decrease an individual's perceived ability to deal with the aftermath of recent stressful or traumatic events, thus decreasing self-efficacy (Gallo, 2009).

Further, the stress from experiences outside of one's control, like deficiencies of resources in underserved neighborhoods and many types of traumatic experiences, may lead to an external locus of control (Türk-Kurtça & Kocatürk, 2020). Additionally, intrusive thoughts that are a characteristic symptom of PTSS may be perceived as uncontrollable and unavoidable, compounding an individual's sense that they have less control after traumatic events (e.g., sexual assault, sudden work accident) (Mikulincer et al., 1989). Higher levels of self-efficacy have been linked to adaptive coping with PTSS after trauma exposure (Benight & Bandura, 2004; Blackburn & Owens, 2015). Higher self-efficacy is also associated with less severe posttraumatic stress and depression symptoms (Benight et al., 1999; Luszczynska et al., 2009), which suggests that self-efficacy is a possible psychological resource for individuals after trauma exposure. Given these findings, self-efficacy may be a psychological resource that helps individuals cope with trauma after cumulative social stress, which could contribute to less severe mental health outcomes.

## The Current Study

The purpose of the current study was twofold: 1) to establish a link between SSS and mental health outcomes after trauma (PTSS and depression symptoms) and 2) to determine how the link between these outcomes is moderated by potential psychological resources (optimism, resilience, self-efficacy). Based on previous research, the current study hypothesized that higher levels of SSS would predict less severe PTSS beyond the effects of SES, and this relation would be stronger among those who had higher levels of optimism, resilience, self-efficacy (Hypothesis 1) in a sample of trauma-exposed college students at a large public university. The current study also hypothesized that higher levels of SSS would predict less severe depression symptoms beyond the effects of SES, and this relation would be stronger among those who also had higher levels of optimism, resilience, self-efficacy (Hypothesis 2).

# Chapter 2

# Method

## Participants

The final sample included 382 students (M = 19.41, SD = 1.57, range 18-32) who reported one or more experiences of traumatic events. Most of the sample (76.2%) reported experiencing more than one type of traumatic event. Over half of the sample (58.1%) reported five or less traumatic event experiences, with 6.0% reporting more than 20 events. The most common traumatic events experienced in the sample were sudden death of a loved one (62.5%), natural disaster (38.9%), hit or kicked hard enough to injure as a child (27.2%), vehicle accident (25.5%), or some other traumatic event (50.8%). Among participants who provided information about their age when they experienced their most traumatic event (*N* = 267), a fifth of participants reported events that occurred in earlier childhood before the age of 10 (21.0%), 12.0% events occurred during pre-adolescence between the ages of 11 and 13, and 40.8% of events occurred during adolescence from ages 14 to 17.

The majority of participants in the sample were White/European American (81.5%), followed by Black/African American (7.1%), Biracial or Multiracial (6.0%), Asian American/Pacific Islander (2.2%), Hispanic/Latino (1.6%), and Middle Eastern/North African (0.8%). Much of the sample identified as cisgender women (60.9%), followed by cisgender men (28.8%), nonbinary or other (8.2%), and questioning (0.8%). A sizable minority of participants had a household income below $2,000 per month (41.3%). Many participants reported that the highest education level attained by at least one of their parents was graduate school (44.3%), followed by college or technical school (24.7%), some college (15.5%), high school (13.9%), and less than 12$^{th}$ grade (1.6%). Additionally, 17.7% of participants reported utilizing financial

assistance programs like Temporary Assistance for Needy Families (TANF) and Supplemental Nutrition Assistance Program (SNAP).

## Measures

### *Trauma History Screen*

The Trauma History Screen (THS; Carlson et al., 2011) is a 13-item scale used to measure lifetime trauma exposure. Sample items include, “attack with a gun, knife, or weapon” and “A really bad car, boat, train, or airplane accident.” Responses are rated on a dichotomous scale (Yes/No). If respondents indicated an answer of Yes, they were then asked about the number of times that event happened. Endorsing one or more traumatic events is considered indicative of trauma exposure. After completing the THS, participants were also asked to indicate which event was most traumatic and how long ago this event occurred.

### *Objective Socioeconomic Status*

Each of the following indicators of SES were assessed: household monthly income, parent education level, and previous or current use of government assistance programs (e.g., Temporary Assistance for Needy Families (TANF), Supplemental Nutrition Assistance Program (SNAP) or food stamps, and Medicaid). Due to the nature of this collegiate sample, individual education level and employment status was not assessed. Parent education level was used in statistical analyses, and household monthly income and utilization of government assistance programs were included as descriptive variables because SES variables like income, occupational status, and education level are less indicative of objective social class and less applicable to this population (Diemer et al., 2013).

Household monthly income was indexed into five categories (1 to 5 points for each category respectively): $0 – 249, $250 – 499, $500 – 999, $1,000 - 1,999, and $2,000 or more. Previous or current use of government assistance programs was coded as a dichotomous

variable: Yes (1) or No (0). Parent education level was measured by the highest degree earned by either parent, and it was coded into five categories: Less than 12th grade (0), 12th grade/high school graduate or equivalent degree (GED) (1), Some college or technical school (2), technical school graduate or undergraduate degree (3), and graduate degree (4).

### *MacArthur Scale of Subjective Social Status*

The MacArthur Scale of SSS (Adler et al., 2000) assesses an individuals' perceived status in their society. Participants were instructed to indicate which position on a ladder indicated their perceptions of where their status is in society. The top ladder rung indicated a perception of high SSS and was coded as 10, and the bottom ladder rung indicated a perception of low SSS and was coded as 1. The MacArthur Scale of SSS has been used previously with samples of undergraduate students (e.g., Kauffman et al., 2020; Schubert et al., 2016), and has been recommended over SES measures to capture social status in college students, especially since many SES items are not applicable to this population (Rubin et al., 2014).

### *PTSD Checklist for DSM-5*

The PTSD Checklist for the DSM-5 (PCL-5; Weathers et al., 2013) is a 20-item scale used to measure an individual's severity of post-traumatic stress symptoms in the past month. Sample items include, "Avoiding memories, thoughts, or feelings related to the stressful experience" and "Having strong negative feelings such as fear, horror, anger, guilt, or shame." Participants were asked to think about the most traumatic event they identified on the THS while responding to PCL-5 items. Responses are scored on a 5-point Likert scale from 0 (Not at All) to 4 (Extremely), and the responses for each item are summed to generate a total score of PTSS severity. Total scores range from 0 to 80. Scores higher than 30 are suggestive of a PTSD diagnosis, depending on the population, setting, and nature of the trauma exposure (Blevins et al., 2015). The PCL-5 demonstrates good test-retest reliability, convergent validity via high

correlations with other measures of PTSD symptoms, and discriminant validity with other clinical diagnostic measures of related constructs like depression and anxiety (Blevins et al., 2015). In the current study, Cronbach's alpha for the PCL-5 was .95.

### *Depression Subscale of the Depression Anxiety Stress Scales-21*

The Depression Subscale of the Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995) is a 7-item scale used to measure an individual's severity of depression symptoms in the past week. Sample items include, "I found it difficult to work up the initiative to do things" and "I was unable to become enthusiastic about anything." Responses range from 0 (Did not apply to me at all) to 3 (Applied to me very much or most of the time). Responses to individual items are summed and this total is multiplied by two to calculate a final score. Final scores on the subscale range from 0 to 42, with conventional severity labels of normal (score of 0-9), mild (10-13), moderate (14-20), severe (21-27), and extremely severe (>28; Lovibond & Lovibond, 1995). The depression subscale of the DASS-21 demonstrates good internal consistency reliability ($\alpha = .91$) and construct validity via high correlations with other measures of depression (Lovibond & Lovibond, 1995). In the current study, Cronbach's alpha for the DASS-21 was .90.

### *Life Orientation Test-Revised*

The Life Orientation Test-Revised (LOT-R; Scheier et al., 1994) is a 10-item scale used to measure dispositional optimism. The LOT-R is comprised of direct scored items (e.g., "in uncertain times, I usually expect the best"), reverse-scored items (e.g., "if something can go wrong for me, it will"), and filler items (e.g., "I enjoy my friends a lot"). Filler items were used as attention checks. Responses are on a 5-point Likert scale from 0 (Strongly Disagree) to 4 (Strongly Agree). Total scores on the LOT-R range from 0 to 40, with higher scores indicating greater levels of optimism (i.e., positive expectations for future outcomes). The LOT-R has good

internal reliability, adequate predictive validity via comparisons of the LOT-R with other personality factors to predict variations in constructs like depression, and discriminant validity with other measures of related constructs like self-esteem and self-mastery (Scheier et al., 1994). The measure has been used with undergraduate samples with adequate internal consistency (Cronbach's alpha = .74, Biber et al., 2020; Cronbach's alpha = .79, Heinonen et al., 2006). In the current study, Cronbach's alpha for the LOT-R was .76.

### *Brief Resilience Scale*

The Brief Resilience Scale (BRS; Smith et al., 2008) is a 6-item scale developed to measure resilience, which is defined as the ability to bounce back or recover from stress. Previous measures of resilience assess resources that may lead to resilience (e.g., optimism; Connor & Davison, 2003) rather than the originally defined aspects of resilience of recovery, resistance, adaptation, or thriving. Sample items include, "I tend to bounce back quickly after hard times" and "I usually come through difficult times with little trouble." Responses are on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Total scores on the BRS range from 6 to 30, with higher scores indicating greater levels of resilience. In previous samples of undergraduate students, internal consistency was good, with Cronbach's alpha ranging from .80–.91 (Smith et al., 2008). Convergent validity was established via high correlations with other measures of resilience, and discriminant validity was established via low partial correlations with related constructs like optimism and purpose in life (Smith et al., 2008). In the current study, Cronbach's alpha for the BRS was .85.

### *Self-Efficacy Scale*

The Self-Efficacy Scale (Sherer et al., 1982) is a 30-item scale with two factors: General Self-Efficacy (17 items; e.g., "when I decide to do something, I go right to work on it") and Social Self-Efficacy (6 items; e.g., "If I see someone I would like to meet, I go to that person

instead of waiting for him or her to come to me"). This scale contains reverse coded items for each factor and filler items that were used as attention checks. Responses are rated on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Total scores on the Self-Efficacy Scale range from 30 to 150, with scores on the General Self-Efficacy subscale ranging from 17 to 85 and scores on the Social Self-Efficacy subscale ranging from 6 to 30. Higher scores are indicative of greater levels of self-efficacy. Internal consistency reliability for General Self-Efficacy and Social Self-Efficacy were .86 and .71 respectively in the original psychometric study, with adequate demonstration of construct validity (Sherer et al., 1982). Convergent validity was established via high correlations with other measures of self-efficacy (Sherer et al., 1982). In studies with college student participants, Cronbach's alpha was .73 for a general sample (Conley et al., 2013) and .82 for a trauma-exposed sample (Haj-Yahia et al., 2021). In the current study, Cronbach's alpha for the Self-Efficacy Scale was .88.

**Procedure**

Participants were recruited from the department of psychology research pool at a large public university in the United States. For the current study, participants had to be 18 years old or older and endorse exposure to one or more traumatic events. No other exclusion criteria were used. Participants read a brief description of the study, and then were directed to an informed consent page and screening items. Interested and eligible participants then completed a demographic questionnaire, which assessed for age, race, and gender identity, and other self-report measures. Participants who completed the survey received half an hour of research participation credit. Data collection and study procedures were reviewed and approved by the University of Tennessee Institutional Review Board.

**Statistical Analyses**

SPSS software (version 27.0) was used to conduct data analyses. Participants were excluded from data analyses if they did not complete the entire survey. Among all consented participants ($N$ = 516), 28 participants did not provide any data on the survey measures, 105 participants left one or more entire measures blank, and 1 participant was excluded because they left two or more items blank on any one of the measures. In the final dataset, the amount of missing item-level data on survey measures was small (0.138%). Following guidelines for datasets with less than 5% missing data, mean substitution was used to handle missing data for measures that were missing one or two items (Tabachnick & Fidell, 2007).

Ranges, means, and standard deviations of all continuous variables and internal consistency reliability of scales were calculated. All variables were assessed for their appropriateness for multivariate analysis (skewness, kurtosis, multicollinearity) and were in appropriate ranges. Bivariate correlations were generated for all variables of interest (Table 1). Hypothesis 1 was tested using hierarchical linear regression with PTSS severity as the outcome variable. Hypothesis 2 was tested using hierarchical linear regression with depression symptom severity as the outcome variable. Both regression models controlled for SES (parent education) in the first step; added SSS in the second step; included optimism, resilience, self-efficacy in the third step, and examined interactions (SSS x optimism, SSS x resilience, SSS x self-efficacy) in the fourth step to assess for possible moderating roles. Variables in the interaction terms were mean-centered before regression analyses. We examined whether the inclusion of the interaction terms statistically significantly increased $R^2$, which would indicate if moderation had occurred (Keith, 2015).

## Chapter 3

## Results

Ranges, means, standard deviations, and correlations among all predictor and outcome variables are presented in Table 1. Roughly 35% (N = 135) of the sample met criteria for probable PTSD on the PCL-5 (Blevins et al., 2015). The mean response on the Depression subscale of the DASS-21 was 10.22 (*SD* = 9.59), which is considered a mild level of depression symptoms (Lovibond & Lovibond, 1995). Correlational analyses indicated significant negative associations between PTSS severity and parent education ($p < .10$), SSS ($p < .05$), self-efficacy ($p < .001$), resilience ($p < .001$), and optimism ($p < .001$). Significant negative correlations were also found between depression symptom severity with SSS ($p < .05$), self-efficacy ($p < .001$), resilience ($p < .001$), and optimism ($p < .001$).

Hypothesis 1 was tested using hierarchical linear regression with PTSS severity as the outcome (Table 2). While the moderation portion of Hypothesis 1 was not supported, the overall regression model predicting PTSS severity was significant, and many of the predictors were significant in predicted directions. The overall model explained 19.6% of the variance, $F(8, 371) = 12.56$, $p < .001$, Adj. $R^2 = .196$. Higher levels of parent education ($p < .05$), optimism ($p < .001$), and resilience ($p < .01$) significantly predicted lower PTSS severity. SSS ($p = .68$) and self-efficacy ($p = .25$) were not significant predictors of PTSS severity. The negative direction of the relationships between parent education, optimism, and resilience with PTSS severity supported our hypothesis. However, the non-significant negative direction between SSS and PTSS severity, was unexpected.

Inclusion of the interaction terms (SSS x self-efficacy, SSS x resilience, SSS x optimism) in step four of the model did not significantly improve the model ($p = .836$). None of the three interaction terms significantly predicted PTSS severity. Given the lack of significant interaction

terms, we did not conduct further analyses to compare the relative predictive power of self-efficacy, resilience, and optimism on PTSS severity.

Hypothesis 2 was tested using hierarchical linear regression with depression symptom severity as the outcome (Table 2). While the moderation portion of Hypothesis 2 was not supported, the overall regression model predicting depression symptom severity was significant, and many of the predictors were significant in the predicted direction. The overall model explained 30.8% of the variance, $F(8, 371) = 22.04$, $p < .001$, Adj. $R^2 = .308$. Greater levels of self-efficacy ($p < .01$), resilience ($p < .01$), and optimism ($p < .001$) significantly predicted less severe depression symptoms. Parent education ($p = .59$) and SSS ($p = .27$) were not significant predictors of depression symptom severity. The negative direction of the relationships between SSS and optimism with depression symptom severity supported our hypothesis. However, the non-significant negative direction between parent education and SSS with depression symptom severity did not support our hypothesis.

Inclusion of the interaction terms (SSS x self-efficacy, SSS x resilience, SSS x optimism) in step four of the model did not significantly improve the model ($p = .846$). The model in step three explained 31.2% of the variance, $F(5, 374) = 35.31$, $p < .001$, Adj. $R^2 = .312$. None of the three interaction terms significantly predicted depression symptom severity. Given the lack of significant interaction terms, no further analyses were conducted to compare the relative predictive power self-efficacy, resilience, and optimism on depression symptom severity.

# Chapter 4

## Discussion

The purpose of the current study was first to establish a link between SSS and mental health outcomes of posttraumatic stress and depression symptoms after trauma, and second to determine whether the link between these outcomes is moderated by the potential psychological resources of optimism, resilience, and self-efficacy. Several previous studies have shown that SSS predicts depression beyond the effects of SES (Adler et al., 2008; Zell, 2018), but to our knowledge, SSS, nor its relationship with posttraumatic stress and depression, have been studied in an exclusively trauma-exposed sample. Additionally, the effects of optimism, resilience, and self-efficacy, which have all been tied to SES, have not been examined in the relationships among SSS and posttraumatic stress and depression symptoms among trauma survivors. Based on the theories of social stress (Aneshensel, 1992) and reserve capacity (Gallo, 2009), we conducted the current study to establish whether SSS predicted posttraumatic stress and depression symptoms in a trauma-exposed sample of emerging adults.

Our results indicate that low levels of optimism and resilience predict more severe PTSS, but the effect of parent education was still significant in this relationship. This finding is consistent with previous studies, which have demonstrated that optimism and resilience are tied to SES indicators such as education levels (Boehm et al., 2015; Heinonen et al., 2006; Kraus et al., 2012; Saban et al., 2019). Consistent with social stress theory, cumulative socioeconomic stressors could appear to deplete psychological resources like optimism and resilience, which might otherwise be used to cope with trauma (Pearlin & Bierman, 2013). However, it may be difficult to determine this given that the majority of our sample was white and from family backgrounds with high levels of education and income. For example, high levels of optimism tend to be observed among white individuals who are highly educated and from highly educated

households with high income (Boehm et al., 2015). Despite these limitations, low levels of optimism and resilience were associated with more severe PTSS in our sample of trauma-exposed college students, which partially supports our hypothesis.

Contrary to our hypothesis, neither SSS nor self-efficacy were significant predictors of PTSS severity. Many individuals in the sample reported potentially traumatic events that were not interpersonal in nature and therefore are least likely to be associated with PTSD (e.g., sudden death of a loved one, natural disaster; Nishith et al., 2000), therefore the common decrease in self-efficacy among individuals with a history of trauma may not have been observed. Other factors could contribute to this finding as well, including that most of our sample had college-educated parents, suggesting an overall high level of SES background amongst our sample. This lack of variability could also be a reason for a non-significant relation between SSS and PTSS severity. Since to our knowledge no studies have examined the relationship between SSS and PTSS severity, future studies should investigate other factors that may influence the link between socioeconomic status and posttraumatic stress.

With regard to depression symptom severity, our results demonstrated a negative relation between low SSS with more severe depression symptoms beyond the effect of parent education, supporting hypothesis 2. This is consistent with previous findings that have demonstrated that low SSS predicts more severe depression symptoms, even after controlling for SES (Adler et al., 2008; Zell, 2018). Thus, the lived experiences of social status, like power and prestige, that make up SSS may have a greater effect on depression symptoms than objective indicators of social status, like income and education. The current study is the first to our knowledge that has examined the relationship between SSS and depression symptoms in a trauma exposed sample of emerging adults. Given that trauma exposure has been previously tied to SES indicators (Read et al., 2011), our findings support that lived experiences of social status captured by SSS have

greater effects on depression symptoms after trauma than SES. Therefore, the relationship among SES, trauma, and depression symptoms is more nuanced than merely having fewer economic opportunities.

We also found a negative relation between low optimism, low resilience, and low self-efficacy with more severe depression symptoms beyond the effect of parent education and SSS, also supporting hypothesis 2. In various studies, low levels of optimism, resilience, and self-efficacy have been found in previous studies to be related to more severe depression symptoms after trauma (Benight et al., 1999; Chang et al., 2011; Luszczynska et al., 2009; Puskar et al., 1999; Watters et al., 2023). While low levels of these psychological resources have been shown to be associated with more severe depression symptoms, our findings imply that the effect of optimism on depression symptoms goes beyond SES and even SSS. Previous studies have found that psychological resources like optimism (e.g., Boehm et al., 2015) are tied to SES, but our findings suggest that optimism may be fostered regardless of SES and SSS circumstances to adequately manage the negative effects of trauma.

We also obtained some unexpected results that did not support our second hypothesis. In contrast to previous findings that have shown that depression symptoms relate to SES (Galea et al., 2007; Kar & Bastia, 2006), parent education was not a significant predictor of depression symptom severity in the current study. This could be due to the nature of our sample of college students in emerging adulthood, since objective social class is difficult to measure in this population given that education level, occupational status, and income are less applicable (Diemer et al., 2013). Parent education also does not account for income and other indicators that are relevant for assessing the SES among participants in our sample.

Another unexpected finding was that self-efficacy, resilience, and optimism did not moderate the relations between SSS and for either trauma outcome. One reason for this could be

the strength of the relationships among these psychological resources and SES; the effects of these psychological resources on trauma outcomes could perhaps be largely attributed to social class. Since our sample is relatively young and 41% of traumatic events reported occurred relatively recently, it could also be that adequate psychological resources have not yet been developed to cope with more recent traumatic events. Perhaps more importantly, we may have not had sufficient variability in our largely high SES sample to detect potential relationships among these constructs.

**Limitations and Future Directions**

The current study has several limitations to be considered when interpreting the results. First, the design of this study was cross-sectional and correlational; therefore, temporal relations amongst our variables are unknown, and causality cannot be inferred. A sizable minority of participants did not fill out the qualitative questions on the traumatic events screen, with $N = 267$ participants having interpretable answers to these questions. Additionally, our sample of college students was relatively homogenous, with much of our sample identifying as white and as cisgender women. Previous studies have demonstrated racial differences in SSS, thus the results from our sample may not generalize to other racial groups (Adler et al., 2008). Additionally, there was a lack of variability within parent education, with many participants reporting that the highest education level attained by at least one of their parents was graduate school (44.3%), followed by college or technical school (24.7%). This points to potential range restriction, especially given that all the variables in this study are associated with SES.

The relation we found between low optimism, resilience, and self-efficacy with more severe depression symptoms beyond the effect of parent education and SSS requires replication with a more diverse sample, particularly with more variability within race and socioeconomic status. Longitudinal studies could also provide insight about this relationship, especially given

that social status could change over time due to educational attainment. Additionally, longitudinal studies can also examine the temporal relationships among SSS, optimism, and depression symptoms. Given that SSS relates to both PTSS, and depression symptoms, we also recommend that future intervention research explores how measures of SSS change in addition to symptom reduction and explore whether interventions centered on SSS after trauma could be beneficial. Given our findings and previous studies that have found that higher levels of optimism, resilience, and self-efficacy relate to less severe depression symptoms after trauma, future studies may explore the relationship between SSS and active coping strategies that underlie these psychological resources (Benight et al., 1999; Chang et al., 2011; Luszczynska et al., 2009; Puskar et al., 1999; Watters et al., 2023).

Lastly, since SSS has not yet been studied among survivors of trauma, future studies should investigate whether experiences of trauma change SSS in a manner resembling meaning making after trauma. Given that meaning making occurs after individuals experience adverse situations where their appraisal of the situation conflicts with their inner beliefs and understanding of the world (Park, 2010), potential changes in where one perceives their place within society after a traumatic event may occur, which could overlap with the appraisal process of meaning making. Future qualitative studies could investigate how trauma survivors experience changes in their social status and how it relates to the appraisal process of meaning making.

**Implications**

Despite limitations, our findings have implications for trauma-focused clinical interventions for college students. Processing SSS after trauma could be useful, particularly since trauma can change the way individuals perceive the world around them. Feminist approaches to psychotherapy (Brown, 2018) have integrated the effects of power and prestige, which underlie SSS, into treatment. Feminist therapy approaches are informed by the social and political context

that surrounds the experiences of clients (Brown, 2018). Our findings suggest that low SSS is associated with more severe depression symptoms, so it could be beneficial to attend to SSS throughout treatment informed by feminist therapy approaches.

Since many college students are emerging adults, experiencing trauma during this transition into adulthood could impact how they perceive their place within society. Clinicians can help their college student process potential SSS changes with including discussions about changed views about society and the world with trauma-informed interventions that target depression symptoms. This may help with better joining together trauma experiences with held perceptions of the world, much like the process of meaning making. Some forms of therapy modalities like Cognitive Processing Therapy (CPT; Resick, Monson, & Chard, 2017) have effectively integrated meaning making into therapy with methods like expressive writing (Park & Blumberg, 2002). Perhaps discussions of SSS could provide insight into how meaning has been made in an individual's appraisal of their place within society after their traumatic experience. In addition to this, increasing optimism may be a target for intervention, especially given that optimism is malleable and more easily targeted in therapy compared to SSS and SES.

**Conclusion**

The present study provides continued support for investigation of trauma and related outcomes like posttraumatic stress and depression among college students. SES, SSS, and psychological resources like optimism, resilience, and self-efficacy all contribute to our understanding in research and treatment related to trauma. Low SSS predicted more severe depression symptoms, even after controlling for SES, a well-established predictor of depression after trauma exposure. Low optimism, resilience, and self-efficacy also predicted more severe depression symptoms, after controlling for SES and SSS. Low optimism and resilience additionally predicted more severe PTSS. We did not find support that optimism, resilience, and

self-efficacy moderated the relationship between SSS and depression symptoms, and the relationship between SSS and PTSS. It is likely that other factors influence the relationship between socioeconomic adversity and adverse outcomes after trauma exposure among college students and emerging adults.

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## Appendix

### Table 1

Range, means, standard deviations, and correlations among variables ($N$ = 382)

| Measure | Range | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Depression Symptoms | 0-42 | 10.22 | 9.59 | -- | -- | -- | -- | -- | -- |
| 2. Posttraumatic Stress Symptoms | 0-76 | 24.51 | 18.03 | .672*** | -- | -- | -- | -- | -- |
| 3. Parent Education | 0-4 | 2.97 | 18.03 | -.069 | -.132** | -- | -- | -- | -- |
| 4. SSS | 1-10 | 5.69 | 1.69 | -.128* | -.104* | .232*** | -- | -- | -- |
| 5. Self-Efficacy | 25-83 | 58.17 | 10.13 | -.395*** | -.278*** | -.040 | .040 | -- | -- |
| 6. Resilience | 6-30 | 18.55 | 4.68 | -.428*** | -.363*** | .056 | .059 | .470*** | -- |
| 7. Optimism | 5-38 | 21.52 | 5.90 | -.521*** | -.412*** | .059 | .159** | .467*** | .549*** |

Note. *$p$ < .05, **$p$ < .01, ***$p$ < .001, SSS = Subjective Social Status

**Table 2**

Hierarchical regression analyses predicting symptoms of posttraumatic stress and depression

| | Posttraumatic Stress[a] | | | Depression[b] | | |
|---|---|---|---|---|---|---|
| Predictors | B | SE | β | B | SE | β |
| Step 1 | | | | | | |
| Parent Education | -2.035 | .805 | -.129* | -.540 | .430 | -.064 |
| Step 2 | | | | | | |
| Parent Education | -1.740 | .827 | -.110* | -.296 | .440 | -.035 |
| SSS | -.845 | .559 | -.079 | -.697 | .298 | -.123* |
| Step 3 | | | | | | |
| Parent Education | -1.578 | .750 | -.100* | -.236 | .369 | -.028 |
| SSS | -.265 | .511 | -.025 | -.300 | .252 | -.053 |
| Self-Efficacy | -.126 | .098 | -.070 | -.141 | .048 | .149** |
| Resilience | -.666 | .222 | -.173** | -.333 | .110 | .163** |
| Optimism | -.841 | .177 | -.275*** | -.572 | .087 | -.352*** |
| Step 4 | | | | | | |
| Parent Education | -1.519 | .756 | -.096* | -.202 | .373 | -.024 |
| SSS | -.215 | .520 | -.020 | -.285 | .256 | -.050 |
| Self-Efficacy | -.115 | .100 | -.064 | -.136 | .049 | -.143** |
| Resilience | -.656 | .227 | -.170** | -.324 | .112 | -.158** |
| Optimism | -.863 | .181 | -.282*** | -.586 | .089 | -.360*** |
| SSS x Self-Efficacy | .020 | .056 | .020 | .014 | .028 | .027 |
| SSS x Resilience | .073 | .127 | .034 | .032 | .063 | .028 |
| SSS x Optimism | -.016 | .102 | -.009 | .022 | .050 | -.024 |

Note. *$p < .05$, ** $p < .01$, *** $p < .001$, SSS = Subjective Social Status
[a]Adj. $R^2 = .196$, $\Delta R^2$ Step 1 = .017, $\Delta R^2$ Step 2 = .006, $\Delta R^2$ Step 3 = .189, $\Delta R^2$ Step 4 = .002
[b]Adj. $R^2 = .308$, $\Delta R^2$ Step 1 = .004, $\Delta R^2$ Step 2 = .014, $\Delta R^2$ Step 3 = .302, $\Delta R^2$ Step 4 = .001

## Vita

Caterina Obenauf is currently a second-year doctoral student in the Counseling Psychology Ph.D. program at the University of Tennessee, Knoxville. She received her Bachelor of Science in Psychology at the Georgia Institute of Technology in Atlanta, where she also received a certificate in Spanish Language Studies and completed a senior thesis in posttraumatic stress symptoms in a community sample of Latin American immigrants living in the United States. During and after graduation, she worked as a clinical research intern at Emory University School of Medicine's Grady Trauma Project. Currently at the University of Tennessee, Caterina enjoys interdisciplinary trauma research collaborations with the School of Social Work and the Grady Trauma Project. She is also an active member of Division 53 of the American Psychological Association, where she is a fellow of their Leadership Education to Advance Diversity (LEAD) Institute and serves on the Student Development Committee and Bilingual Special Interest Group.