The Relationship Between Hope, Eustress, Self-Efficacy, and Life Satisfaction Among Undergraduates

Geraldine O'Sullivan

Abstract The construct of eustress was studied alongside hope and self-efficacy, to explore how these constructs are related to life satisfaction among undergraduates. Questionnaires were administered to undergraduates to test the hypotheses that (1) as eustress levels increase, so will life satisfaction levels; (2) when eustress, hope, and self-efficacy are examined together, they will predict life satisfaction better than eustress alone; (3) eustress, hope, and self-efficacy will all be positively correlated with life satisfaction; and (4) self-efficacy will be the most positively correlated with life satisfaction. The results revealed a significant positive correlation between eustress and life satisfaction. A Hierarchical Linear Regression analysis revealed significant results supporting hypotheses 2 and 3, but not hypothesis 4. Results indicated that hope is the best predictor of life satisfaction. The work reported provides a reliable tool for measuring eustress, examines eustress in a new way at the academic level, and provides helpful information about student wellness to college administrators.

Keywords Eustress · Hope · Self-efficacy · Life satisfaction · Well-being

1 Introduction

Stress can be loosely defined as "the relationship between the person and the environment that is appraised by the person as taxing and endangering to his or her well-being" (McGowan et al. 2006, p. 92). Of the several types of stress that exist, there are two that play a part in this study: eustress and distress. These two types of stress can be defined as the positive and negative aspects of stress respectively (McGowan et al. 2006). More specifically, eustress is a "positive psychological response to a stressor" whereas distress is

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"a negative psychological response to a stressor" (Simmons 2000, p. 42). Although much research has been conducted on the construct of stress, far less exists on eustress. A clear measure of eustress has not been defined and eustress itself has not been clearly conceptualized in the limited research that exists. Thus, the purpose of this study is to examine eustress, to create a measure for eustress, and to study the relationship of eustress, self-efficacy, and hope to life satisfaction. By examining and measuring eustress along with self-efficacy, hope, and life satisfaction among undergraduates, the researcher hopes to fill these identified gaps in the literature.

Of eustress and distress, eustress has been largely ignored in previous research, making it difficult to clearly understand the construct. One of the first researchers to truly examine the idea of eustress was Hans Selye, who proposed the idea that stress can result in positive outcomes (Selye 1975). This idea of eustress as "good stress" relates to the Yerkes-Dodson Law, which states that "increasing stress is beneficial to performance until some optimum level is reached…" (Le Fevre et al. 2003, p. 729). That is to say, people who experience a certain level of stress can actually be more productive and produce more effectively than if the stress was eliminated. These findings from previous research suggest that eustress has been considered as both a process and a product. For instance, eustress can affect the process in terms of the response to the stressor as well as the quality of the end product. The idea that eustress is a "healthy, positive, constructive outcome of stressful events and the stress response" (Quick et al. 1997, p. 4) has been mentioned in previous literature, often without a valid measure or a clear operational definition. For the purposes of this study, eustress will be defined as both the process of responding positively to stress as well as the positive outcome of this process. At the academic level, the positive response to stress could include studying and working to complete assignments whereas the outcome of eustress could include productivity and successful completion of assignments and exams. These behaviors should not be confused with eustress itself, but they are representative of the positive response and outcome of eustress.

In contrast, distress occurs "when the demands placed on the body exceed its capacity to expend energy in maintaining homeostasis" (Le Fevre et al. 2003, p. 729). Therefore, too much stimulation can cause distress, whereas eustress is usually the result of more manageable levels of stress (Le Fevre et al. 2003). In order to understand the idea that eustress and distress are separate constructs at both the process and outcome levels, as opposed to opposite ends of a continuum (Simmons 2000), it is helpful to consider the following diagram illustrating Selye's concept of stress: (Fig. 1).

Although eustress has not received much attention in previous research, there has been some research on the topic, and in 1983, Gmelch's study demonstrated its existence through an examination of Little League baseball players. In his study, Gmelch found that at a certain level of stress, players performed at their optimum level. In this case, stress had a positive effect on the players' performance abilities. While this study attempted to examine eustress among baseball players, it did so without developing a clear measure or operational definition for eustress. Similarly, in a series of case studies using 45

Fig. 1 Selye's concept of stress (Simmons 2000, p. 15)
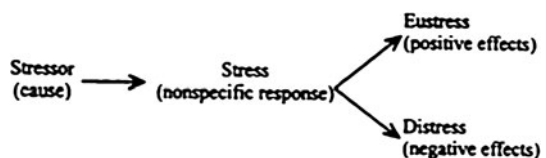
participants, it was found that students with high levels of stress actually attained higher academic achievement in school while those with less stress did not perform as well (Monk 2004). This research, while supporting the idea that stress can have positive effects on an individual, also did not develop clear measures for examining eustress.

Furthermore, the field of Organizational Behavior has often studied both the positive and negative effects of stress in the workplace. In a study conducted by Benson and Allen 1980, high-powered businessmen were interviewed about the impact of stress in the workplace. The results suggested that people were more effective in the business setting while under stress but that it is important to avoid too much stress (Benson and Allen 1980). This illustrated the potential for both eustress and distress within the working environment. It is this mindset that causes managers to try to maintain a certain amount of stress for their employees rather than to try to minimize stress completely (Le Fevre et al. 2003). However, because the managers recognize that too much stress is detrimental, the goal is typically not to maximize stress but to attempt to regulate it at an optimum level. Although this optimum level was mentioned in Benson and Allen's study, discussion of its measurement, limitations, or individual differences was not included in the literature. Benson and Allen also examined the physical results of stress such as increased heart rate, blood pressure, rate of breathing, sweating, and an increase of blood flow to the muscles. While this type of physical reaction has often improved the performance of athletes in a game or of students while taking a test, it can also have negative effects such as contributing to more serious health issues such as heart attacks, strokes, and high blood pressure (Benson and Allen 1980).

There have been several Likert scales developed to measure stress, including the Perceived Stress Scale (Cohen et al. 1983), which asks a series of questions about general stress; responders are asked to rate the statements as occurring "very often," "less often," etc. Because stress can be so affected by an individual's perception and attitude (Weiner 1986), and because stress is handled differently among individuals, it is important to consider the research methods that have been used when studying stress, particularly eustress. However, the idea of eustress has been largely ignored in previous research on stress and a clearly defined scale for measuring eustress has yet to be developed. It is for this reason that the present study uses an originally designed eustress scale in order to further the necessary research on eustress and attitudes.

Previous research has shown that stress is continually changing due to the individual's relationship to the surrounding environment and the stressors that exist (Lazarus 1990). It is this relationship with the environment that can affect one's attitude and eustress has been found to be "primarily a result of positive perception of stressors" (Le Fevre et al. 2003, p. 229), which may affect attitudes. Additionally, it has been claimed that the "distressful or eustressful nature of any particular stimulus is governed by how one interprets it and chooses to react to it" (Le Fevre et al. 2003, p. 729). According to Weiner, the way one thinks can have a powerful influence on how one feels, and certain qualities that one possesses may affect how one acts (Weiner 1986). Furthermore, in stressful situations, the way that the individual interprets the situation plays a large role in the effect that the stressor may have (Lovallo 1997). Because previous research has demonstrated positive relationships among hope, eustress, and self-efficacy, the present study examines if hope, eustress, and self-efficacy can be used to predict life satisfaction. Although separate studies have been conducted on the relationships of hope and self-efficacy to life satisfaction, there has been no research conducted on eustress as it relates to life satisfaction.

It is particularly important to study these variables at the university level because of the profound effects that stress has on college students (Shaikh and Deschamps 2006). Stress

can have serious effects on both psychological and physiological aspects of students' well-being. For example, in a qualitative study that was conducted on French university students, it was found that various stressors may cause "impaired judgment, reduced concentration, lack of self esteem, and greater anxiety and depression," which can affect academic performance (Shaikh and Deschamps 2006, p. 47). Additionally, researchers have described the effects of stress as creating a much higher risk for morbidity (Le Fevre et al. 2003). Furthermore, of all the stressors that face college students, academics are often a primary stressor; research has found that exams, homework, time management, and grades were the primary stressors for a representative sample of college students (Monk 2004). In order to better understand the effects of these stressors, it is important to study eustress among university students.

While psychologists have studied the effects of personality traits on stress, one of the key traits that seems to be connected to how people deal with stress is hope. Of the many emotions and attitudes that exist, hope is one that has often been studied in connection with levels of stress. Hope can be loosely defined as "the will or determination to meet one's goals and the belief that one can find ways to meet these goals" (Tennen et al. 2002, p. 312). In order to explain the effects of hope on stress, several theories have been created. For example, Snyder's Hope Theory suggests that there are both high and low hope persons, and that low hope persons succumb more easily to stressors and lose sight of their goals because they do not believe they can attain their goals (Snyder 2002). In contrast, people who have high hope view stressors as motivating challenges that enable them to achieve their goals (Snyder 2002). There have also been several scales developed to measure hope, including the Hope Scale (Carver and Scheier 2002). In studying the effects of personal attitudes such as hope on stress, researchers have been able to gather evidence to support the idea that hope and stress in conjunction have an effect on outcomes such as problem solving ability.

For example, Chang (1998) studied 211 college students to determine the influence of high or low levels of hope on problem solving ability and on coping with stressful interpersonal and academic situations. He used a series of scales and self reports to gather data on levels of hope, problem solving ability, and coping mechanisms. Regression analyses revealed that students with higher levels of hope had better problem solving abilities than students with low levels of hope. Specifically, students with higher levels of hope used "significantly less wishful thinking, self-criticism, [and] social withdrawal" as coping strategies (Chang 1998, p. 959). This study illustrates the way in which hope can positively affect students' overall academic and interpersonal lives via helping them cope with stress. Similarly, Snyder found that Hope Scale scores are directly associated with overall higher academic achievement for college students, as measured by their semester and yearly GPAs, and that more hopeful college students are also more motivated, challenged, and energized by their life goals (Snyder 2002). Although causal direction is not known, the majority of the research that has been conducted on this issue has illustrated the positive effects of hope on academic success as a result of better mechanisms for coping with stress.

When considering stress, hope has also been linked to self-efficacy, an important concept that will be addressed in this study. According to Albert Bandura, "perceived self-efficacy is concerned with people's beliefs in their capabilities to produce given attainments" (Bandura 2006, p. 307). More simply, "perceived efficacy is a judgment of capability" (Bandura 2006, p. 309). It is especially important to consider self-efficacy because of the role it has played in studies of the workplace. In a meta-analysis of 114 studies, Luthans (2002) found "a stronger relationship between efficacy and work-related

performance than other popular concepts" (p. 700). Similarly, through a meta-analysis, researchers Stajkovic and Luthans found a significant correlation between performance at work and self-efficacy scores (Stajkovic and Luthans 1998). With regards to coping with stress, it has been shown that "perceived self-efficacy helps to account for diverse phenomena like changes in coping behavior, level of physiological stress reactions, self regulation of refractory behavior, and achievement strivings" (Bandura 1982, p. 122). It is for this reason that self-efficacy is important to consider when studying eustress at the academic level.

Previous research on self-efficacy at the academic level has been fairly thorough, and results have reinforced the importance of the topic as it relates to student achievement. This is particularly important due to the influence of eustress on college student achievement that has already been considered. For example, it has been found that self-efficacy beliefs are connected to other beliefs about the self, including academic achievement, academic choices, and motivation (Pajares 1996). In a study conducted in 1992, Risemberg and Zimmerman used a path analysis to demonstrate that self-regulated learning was influenced by academic self-efficacy. The results illustrated that self-efficacy did affect achievement in a significant way and also raised student's goals for academic achievement (Risemberg and Zimmerman 1992). These results directly support Bandura's notion that as perceived self-efficacy increases, so does academic performance (Bandura 1982). Therefore, it is important to understand the dynamic between self-efficacy and academic performance, particularly in combination with the findings on eustress and hope.

In addition to stress and academics, it is important to consider self-efficacy in relation to hope for the purposes of this study. "Self-efficacy…and hope are related but not identical. [The two] are related by the central core of expectancies…and are conceptualized as cognitive sets that (a) pertain to individual outcomes…(b) pertain to the future…(c) are powerful determinants of behavior" (Magaletta and Oliver 1999, p. 541). In a study conducted on 204 university students, Magaletta and Oliver distributed the Hope Scale, Self-Efficacy Scale, General Well Being Questionnaire, and Life Orientation Test scales and found positive correlations between all four scales. Statistical analysis identified that while these constructs are similar and positively correlated with one another, they are not identical. Through this example, it is evident that further research examining self-efficacy and hope will be beneficial to a greater understanding of stress, specifically eustress.

After considering the interactions between eustress, hope, and self-efficacy, it is important to examine how these three interact with life satisfaction in order to further the research in this area. Life satisfaction is loosely defined as "the degree to which the experience of an individual's life satisfies that individual's wants and needs, both physically and psychologically" (Demerouti et al. 2000, p. 456). Previous research has analyzed how conditions and aspects of personality can play a role in overall life satisfaction and how life satisfaction is connected to stress.

For example, a study of 109 German nurses evaluated how their stressful working conditions affected their overall life satisfaction (Demerouti et al. 2000). Participants were evaluated using measures to test life satisfaction, burnout, job demands, and job resources. The researchers found that stressful working conditions did have a negative impact on overall life satisfaction, and that "working conditions influence life satisfaction by changing characteristics of the person or environment" such as increased burnout and lack of motivation (Demerouti et al. 2000, p. 456). Although this study did not look

at stress and life satisfaction on an academic level, it is relevant to the present study through its examination of stress and life satisfaction in general.

Life satisfaction has also been shown to have a direct relationship with hope. Chang's (1998) study of 211 college students examined interpersonal and life satisfaction in relation to hope. After separate hierarchical regression analyses were performed, it was found that "hope was an important predictor of both academic and interpersonal life satisfaction" (Chang 1998, p. 953). For college students, this study illustrates how a sense of hope can affect overall satisfaction or vice versa.

Furthermore, life satisfaction has been directly related to self-efficacy. Hampton's (2000) study of 100 Chinese individuals with spinal cord injuries found that self-efficacy was related to both the quality of life and the life satisfaction of the patients tested. Hampton (2000) found that "self efficacy and health status were significantly correlated with life satisfaction" (p. 69). Furthermore, "the major contributor to life satisfaction was self-efficacy, which had the highest partial correlation with life satisfaction after health status and demographic variables were controlled" (p. 70). Through this study, one can gain a greater understanding of the interaction between life satisfaction and self-efficacy.

The present study examines the relationship between hope, eustress, self-efficacy, and life satisfaction among college students. By using modified versions of the Hope Scale, Perceived Stress Scale, Self-Efficacy Scale, Life Satisfaction Scale, and by creating a Eustress Scale, the researcher will be able to gather specific data from a sample of college students. The researcher seeks to understand the relative contribution of eustress, hope, and self-efficacy to life satisfaction at the academic level. It is hypothesized that after controlling for demographic characteristics, (1) as levels of eustress increase, so will levels of life satisfaction; (2) when eustress, hope, and self-efficacy are examined together, they will predict life satisfaction better than eustress alone; (a) eustress, hope, and self-efficacy will all be positively correlated with life satisfaction; (b) self-efficacy will be the most positively correlated with life satisfaction.

2 Method

2.1 Participants

A convenience sample of 118 Pitzer College students (31 male, 87 female) were recruited from dining halls, classrooms, and residence halls to participate in this study. Of these 118 students, 30 students were asked to take the survey twice in a period of 2 weeks to perform a test/retest validation of the eustress measure. The ages of the participants ranged from 18 to 25 years, with a mean age of 19.96 and a standard deviation of 1.40. Participants were racially diverse, with 69 Caucasian participants, 23 Hispanic participants, 12 Asian American participants, 6 African American participants, and 8 participants who identified as "Other." These classifications were determined based on participants' self-identification with a particular ethnic group. Additionally, participants were predominantly from middle to upper socioeconomic backgrounds, with 4 Low status participants, 15 Lower-Middle status participants, 30 Middle status participants, 59 Upper-Middle status participants, and 9 Upper status participants. These classifications were based on the participants' written selection of one out of the five socioeconomic status terms that were described in detail by the researcher.

2.2 Materials

2.2.1 Demographics

The researcher collected data on the gender, race, age, and socioeconomic status of participants. Four questions were used including "With what gender do you identify?," "With what race/ethnicity do you identify?," "What is your age?," and "With what socioeconomic status do you identify?" Participants were asked to respond freely to the first three questions, and select from a list of choices for the last question (see Appendix A).

2.2.2 Levels of Hope

Level of hope was assessed using a six-item modified version (see Appendix B) of the Trait Hope Scale (Snyder 2002). Modifications included slight changes of the questions to relate to academic issues, as well as fewer questions than in the original scale. The modified scale included statements such as: "I can think of many ways to get out of an academic problem," "I can think of many ways to achieve the goals in school that are most important to me," and "I energetically pursue my academic goals." Participants were asked to respond to the statements with "False," "Mostly False," "Somewhat False," "Somewhat True," "Mostly True," and "Very True," with higher scores indicating higher levels of hope. The researcher performed statistical analysis on the data sets of the first and second administrations of the hope scale. Results indicated a Cronbach's alpha coefficient of .678 for the first administration of the survey, and a Cronbach's alpha coefficient of .690 for the second administration of the survey. These results reflected the internal consistency of the measure and indicated that it would not be necessary to remove any of the six items from the hope scale in order to make it a reliable measure. The Trait Hope Scale has shown internal consistency in the past, with statistical analyses reporting alpha coefficents of .74 to .88 as well as test–retest temporal reliability scores of .85 for a study of 3 weeks to .82 for a study of 10 weeks (Snyder 2002). These results reflected the reliability of the measure.

2.2.3 Levels of Eustress

Level of eustress was assessed using an original scale created by the researcher of fifteen items, five of which were filler questions (see Appendix C). Items included some questions such as: "How often do you effectively cope with stressful changes that occur in your academic life?," "How often do you deal successfully with irritating academic hassles?," and "How often do you feel that stress positively contributes to your ability to handle your academic problems?" Participants were asked to respond to the statements with "Never," "Almost Never," "Sometimes," "Often," "Very often," and "Always," with higher scores indicating higher levels of eustress. In order to test the reliability of the eustress measure, the researcher performed statistical analysis on the data sets of the first and second administrations of the eustress scale. Results indicated a Cronbach's alpha coefficient of .766 for the first administration of the survey, and a Cronbach's alpha coefficient of .806 for the second administration of the survey. These results reflected the internal consistency of the measure and indicated that it would not be necessary to remove any of the items from the eustress scale in order to make it a reliable measure. A paired samples t test was used to analyze the consistency across time and revealed no significant differences between the first and second times administered, $(t) = -.418$, $p = .679$.

2.2.4 Levels of Self-Efficacy

Level of academic self-efficacy was assessed using a scale that was modified from one of Bandura's self-efficacy scales (Bandura 2006). The modifications included changes in the response options from 0-10 to 1-6 in order to match the scoring of the other scales used. In order to assess self-efficacy, a ten-item scale was used (see Appendix D), and included statements such as "Finish my homework assignments by deadlines," "Get myself to study when there are other interesting things to do," and "Always concentrate on school subjects during class." The participants were instructed to consider their level of confidence in being able to do these aforementioned tasks. They were asked to rate their confidence on a scale of zero to six, zero representing "cannot do at all" and six representing "highly certain can do." Higher scores indicated higher levels of self-efficacy. The researcher performed statistical analysis on the first and second administrations of the self-efficacy scale. Results indicated a Cronbach's alpha coefficient of .723 for the first administration of the survey, and a Cronbach's alpha coefficient of .836 for the second administration of the survey. These results reflected the internal consistency of the measure. The reliability of Bandura's fifty-seven item Multidimensional Scales of Percieved Self-Efficacy has been tested in previous research, and results indicated a Cronbach's alpha reliability coefficient of .92 (Williams and Coombs 1996).

2.2.5 Levels of Life Satisfaction

Level of academic and overall life satisfaction was assessed using a scale that was modified from The Satisfaction With Life Scale (Diener et al. 1985). The modifications included questions designed to relate to life satisfaction on an academic level. In order to assess life satisfaction, a ten-item scale was used (see Appendix E) and included statements such as "In most ways, my life is close to my ideal," "In most ways, my life at school is close to my ideal," "The conditions of my life are excellent," and "The conditions of my academic life are excellent." Participants were asked to respond to the statements with "Strongly Disagree," "Disagree," "Slightly Disagree," "Slightly Agree," "Agree," or "Strongly Agree," with higher scores indicating higher levels of life satisfaction. The researcher performed statistical analysis on the data sets of the first and second administrations of the life satisfaction scale. Results indicated a Cronbach's alpha coefficient of .933 for the first administration of the survey, and a Cronbach's alpha coefficient of .933 for the second administration of the survey. These results reflected the internal consistency of the measure and indicated that it would not be necessary to remove any of the items from the life satisfaction scale in order to make it a reliable measure. The internal consistency of the five-item Satisfaction With Life Scale has also been examined in previous research (Diener et al. 1985) illustrating a correlation coefficient of the test–retest study of .82 and a coefficient alpha level of .87. These scores support a good level of internal consistency within the scale.

2.2.6 Levels of Stress

Level of stress was assessed using a modified version of the Perceived Stress Scale (Cohen et al. 1983). This scale was used only for exploratory analysis and did not directly relate to the researcher's hypotheses. Level of stress was assessed by using a seven-item scale (see Appendix F) including statements such as "I generally view myself as being stressed during the school year," "I rarely experience academic stress," and "I hardly ever think

about how stressed I am." Participants were asked to respond to the questions with "False," "Mostly False," "Somewhat False," "Somewhat True," "Mostly True," and "Very True," with higher scores indicating higher levels of stress. The researcher performed statistical analysis on the data sets of the first and second administrations of the stress scale. Results indicated a Cronbach's alpha score of .910 for the first administration of the survey, and a Cronbach's alpha score of .912 for the second administration of the survey. These results reflected the internal consistency of the measure and indicated that it would not be necessary to remove any of the items from the stress scale in order to make it a reliable measure. In previous research, the validity of the fourteen-item Percieved Stress Scale was also analyzed, yielding alpha reliability coefficients of .84, .85, and .86 for three samples as well as a test–retest correlation score of .85 (Cohen et al. 1983). This analysis gave support to the internal consistency of the scale.

2.3 Procedure

The researcher recruited participants by approaching them individually or in groups as well as by sitting at a table with a poster that requested participation from students. Participants were informed that their participation was completely voluntary. Students who did not want to participate were not included in the study. Before completing the questionnaire, participants were asked to sign their name on a consent form, indicating an understanding of what was expected and their consent to participate.

The researcher used a questionnaire that was presented to each participant. The questionnaire included questions regarding gender, race, age, and socioeconomic demographics, as well as five scales measuring hope, eustress, self-efficacy, life satisfaction, and stress respectively. Although most of the scales were modified versions of previously created scales, the researcher designed an original scale in order to measure eustress.

Data were collected using the questionnaires distributed to each participant. The researcher evaluated the recorded responses of the participants on the questionnaires. The researcher instructed the participants to pay careful attention to the wording of each question and participants were informed that some questions were reverse coded.

3 Results

All of the analyses presented below were performed using an a priori alpha level of .05.

Means and standard deviations for the variables were calculated and results indicated that participants affirmatively endorsed all variables (see Appendix G).

Additionally, a correlation matrix was included in the analysis (see Appendix H) and the results indicated that eustress, hope, and self-efficacy had a significant positive association with life satisfaction as well as with one another. Stress was the only variable that had a negative association with life satisfaction. Furthermore, stress had a negative association with all other variables.

Exploratory statistical analysis of the low and high stressed participants revealed no significant differences between the two groups in terms of eustress ($t(116) = 1.74$, $p = .085$), hope ($t(116) = .882$, $p = .379$), or self-efficacy ($t(116) = -.098$, $p = .922$). Therefore, both low and high stress groups were included in the subsequent analyses in order to allow for a broader representation. This allowed for the results of this study to be more generalizable to all students, regardless of stress level.

A Pearson's Correlation test was used to test the first hypothesis that as eustress increases, so does life satisfaction. Results indicated statistical significance; as eustress increased, so did life satisfaction, $r(116) = .328$, $p < .001$, $r^2 = 11\%$.

Next, a Hierarchical Linear Regression analysis was used to test the second hypothesis that the combination of eustress, self-efficacy, and hope would be a better predictor of life satisfaction than eustress alone. Results indicated that 11% of the variance in life satisfaction is explained by eustress alone, $F(1,116) = 13.99$, $p < .001$. Additionally, when hope and self-efficacy were added to eustress, the two combined accounted for an additional 11.3% of the variance in life satisfaction, $F(2,114) = 8.29$, $p < .001$. These results indicate that when hope and self-efficacy are examined together in addition to eustress, they allow for an even better prediction of life satisfaction. When eustress, hope, and self efficacy were examined all together, results were statistically significant, $F(3,114) = 10.78$, $p < .001$. These results indicate that when the three variables are combined, they allow for an even stronger prediction of life satisfaction. In total, these three variables accounted for 22.1% of the variance in life satisfaction.

When testing whether all three variables were positively correlated with life satisfaction, a hierarchical regression analysis was performed, which yielded the formula $y = .328(\text{eustress}) + .488(\text{hope}) + .045(\text{self-efficacy}) + .280$, indicating positive correlations of eustress, self-efficacy, and hope with life satisfaction. With y representing life satisfaction, eustress, hope, and self-efficacy scores can be inserted into the formula to predict life satisfaction.

The most important predictor for life satisfaction, as determined by the regression analysis, was hope, $t(114) = .338$, $p < .001$. This finding contrasts with the hypothesis that self-efficacy would be the most highly correlated with life satisfaction. Additionally, statistical analysis revealed that eustress had the second strongest association with life satisfaction, $t(114) = .219$, $p = .014$. Finally, self-efficacy was not shown to be a significant predictor of life satisfaction, $t(114) = .038$, $p = .676$.

4 Discussion

The purpose of this study was to gain a clearer understanding of the construct of eustress, particularly in regards to how it relates to hope and self-efficacy when predicting life satisfaction among undergraduates. Although previous research has been conducted on hope and self-efficacy, little to no research has been conducted on the construct of eustress among college students using a defined tool for measurement. A Pearson's Correlation and a Hierarchical Linear Regression analysis revealed that eustress is a significant predictor of life satisfaction and that, when hope and self-efficacy are added, this combination makes for an even stronger prediction. Furthermore, all three variables are positively correlated with one another and hope is the strongest predictor of life satisfaction.

This study used an original scale created by the researcher in order to measure the construct of eustress. Statistical evaluation supported the reliability of the measure, indicating that none of the ten items needed to be removed from the questionnaire. In the past, eustress has been outlined and defined as a construct (Selye 1975; Simmons 2000), but lacked a quantitative tool for measurement. The majority of the research conducted on eustress has examined the construct within an athletic setting (Gmelch 1983) or within the workplace (Benson and Allen 1980). These studies mentioned eustress as both a process and an outcome, but eustress was measured qualitatively and inconsistently in comparison

to other studies. However, it has not previously been examined in an academic environment with a clearly defined method of measurement.

The results of this study indicated that there is a significant association between eustress and life satisfaction. That is to say, participants who reported a higher level of eustress also reported a higher level of life satisfaction, and vice versa. The variation in eustress accounted for 11% of the variation in life satisfaction, a significant effect. This finding is particularly important in terms of the previous research on stress and eustress. Although there have been studies that have examined the impact of stress on life satisfaction (Demerouti et al. 2000), little to no research has been conducted on eustress and life satisfaction, particularly in academic settings. Due to the inclusive nature of the life satisfaction scale that was used, these results indicate that eustress in an academic setting is a significant predictor of academic and overall life satisfaction. This finding makes an important contribution to research on life satisfaction in terms of how it is related to eustress.

Because eustress is considered to be a "positive response to a stressor" (Simmons 2000, p. 42), it was particularly important to examine factors that may influence this positive response, such as hope and self-efficacy. First, hope and self-efficacy were entered together into the Hierarchical Linear Regression analysis in order to test whether or not they would improve the ability to predict life satisfaction. The results of the statistical analysis indicated that when self-efficacy and hope were examined in addition to eustress, the combination of the two adds significantly to the ability to predict life satisfaction. The addition of hope and self-efficacy accounted for an additional 11% of the variation in life satisfaction, a significant amount. Finally, the combination of eustress, self-efficacy, and hope accounted for 22.1% of the variance in life satisfaction. The relationship of life satisfaction to hope and self-efficacy is not altogether surprising when considering previous research. Hope and self-efficacy are related in that they both share a core group of expectations (Magaletta and Oliver 1999) and additionally, hope has been shown to be a predictor of both academic and overall life satisfaction among students (Chang 1998). Similarly, self-efficacy has been directly related to life satisfaction among Chinese individuals with spinal cord injuries (Hampton 2000). The significance of the current study lies in that it examines these constructs among college students and how the constructs work with eustress to predict life satisfaction. Undergraduates who reported higher levels of hope, eustress, and self-efficacy were much more likely to report higher levels of life satisfaction, illustrating the powerful relationship that these three variables have with life satisfaction.

Additionally, the results indicated that eustress, self-efficacy, and hope are positively correlated with one another. All three variables make a positive contribution to the prediction of life satisfaction among undergraduates. This result is not particularly surprising when considering the literature that discusses the relationship between life satisfaction and self-efficacy (Hampton 2000) as well as the relationship between life satisfaction and hope (Chang 1998). The addition of eustress to these variables as well as its consideration at the academic level makes an important contribution to the research. This finding illustrates how those students who benefit from their academic stress may also have an increased life satisfaction both overall and at school.

Furthermore, when examining the most important predictor of life satisfaction, statistical analysis revealed that while hope and eustress have a significant impact on life satisfaction, self-efficacy does not. Hope was the strongest predictor of life satisfaction, which is consistent with Chang's previous research (1998). Eustress was the second strongest predictor, a finding that makes an important contribution to the limited research

on this topic. Self-efficacy was found to be a non-significant predictor of life satisfaction, which is somewhat surprising based on previous research indicating its relevance to life satisfaction (Hampton 2000). The results of the current study seem to call the generalizability of Hampton's findings into question. It is also important to note that while self-efficacy has been examined in conjunction with hope (Magaletta and Oliver 1999), academic performance (Bandura 1982; Pajares 1996), and work performance (Luthans 2002), limited research has been conducted on self-efficacy's relationship to life satisfaction at the academic level. Current findings indicated that while hope and eustress are significant predictors of life satisfaction in an academic setting, self-efficacy does not make a significant contribution on its own. Therefore, hopeful students who experience eustress tend to have a greater level of life satisfaction than those students who are less hopeful, or who do not often experience eustress. Students with a high level of self-efficacy did not necessarily experience a high level of life satisfaction unless their self-efficacy was also supplemented by high levels of hope and eustress.

There were several limitations to this study that could have affected the results. Although statistical significance was found with 118 participants, it may still be difficult to generalize the results. In future research, while it may be beneficial to include a larger sample size in order to increase the external validity of the study, it may also be beneficial to include a more representative sample. The gender, ethnicity, and socioeconomic status of participants in the current study were unequally represented. The study was comprised of predominantly female, white, upper middle class students. In order to increase the external validity of the study, future research should contain a more diverse set of participants. Furthermore, this research was conducted at a small, private, liberal arts college at which students generally have similar academic experiences in terms of classroom size and quality of professors. It may be beneficial for future research to conduct this study at a variety of universities in order to make the study more generalizeable to all college students.

The implications of this study are twofold. First, this research makes a significant contribution to the limited research that exists on the construct of eustress. Not only does it provide a reliable tool for measuring eustress, it examines the construct alongside hope, self-efficacy, and life satisfaction among college students. These constructs have not previously been examined in this way, and thus the research provides groundwork for future studies in this area. Second, this research provides information that may be helpful for college administrators and student affairs officials. If administrators can find ways to increase the levels of hope and eustress among their students, then life satisfaction at the school would increase. If life satisfaction is increased, students may be more academically committed and less likely to transfer to another university. This study yields information regarding students' wellness on campus and if a greater understanding can be had of these issues, universities may be better able to ensure that their students are achieving both academic and personal satisfaction at their institution.

Appendix A

See Table 1.

Table 1 Demographics

With what gender do you identify? _____

With what race/ethnicity do you identify? _____

What is your age? _____

With which socioeconomic status do you identify?

Lower socioeconomic status _____
Lower Middle socioeconomic status _____
Middle socioeconomic status _____
Upper Middle socioeconomic status _____
Upper socioeconomic status _____
Prefer not to state _____

Lower SES: My family's income is not sufficient for the basic needs of my family (i.e., rent, food, health services etc.). My family may frequently need assistance from government or non-profit programs. Needing more money is a big issue.

Lower Middle SES: My family's income is barely sufficient for the basic needs of my family (i.e., rent, food, health services etc.). My family may at times need assistance from government or non-profit programs. Needing more money is an issue.

Middle SES: My family's income is sufficient for the needs of my family. My family does not often need to seek assistance from government or non-profit programs. Needing more money is sometimes an issue. Sometimes my family can afford to buy some things that are extra and beyond our basic needs.

Upper Middle SES: My family's income is sufficient for the needs of my family. My family can afford to purchase more than basic needs. Needing more money is not an issue. My family can afford to buy certain luxuries such as an annual vacation, etc.

Upper SES: My family's income is more than sufficient for the needs of my family. My family can afford much more than basic needs. Needing more money is never an issue. My family can afford to buy many luxuries.

Appendix B

See Table 2.

Table 2 Hope scale

I can think of many ways to get out of an academic problem.					
Very True	Mostly True	Somewhat True	Somewhat False	Mostly False	False
I can think of many ways to achieve the goals in school that are most important to me.					
False	Mostly False	Somewhat False	Somewhat True	Mostly True	Very True
I energetically pursue my academic goals.					
Very True	Mostly True	Somewhat True	Somewhat False	Mostly False	False
There are not very many ways around any academic problem.					
False	Mostly False	Somewhat False	Somewhat True	Mostly True	Very True
Even when others get discouraged, I know I can find a way to solve the problem.					
Very True	Mostly True	Somewhat True	Somewhat False	Mostly False	False
My past academic experiences have not prepared me well for my future academic experiences.					
False	Mostly False	Somewhat False	Somewhat True	Mostly True	Very True

Appendix C

See Table 3.

Table 3 Eustress scale

How often do you effectively cope with stressful changes that occur in your academic life?					
Never	Almost Never	Sometimes	Often	Very often	Always
How often do you deal successfully with irritating academic hassles?					
Always	Very often	Often	Sometimes	Almost Never	Never
Do you read books for pleasure? (FILLER QUESTION)					
Always	Very often	Often	Sometimes	Almost Never	Never
How often do you feel that stress positively contributes to your ability to handle your academic problems?					
Never	Almost Never	Sometimes	Often	Very often	Always
In general, how often do you feel motivated by your stress?					
Never	Almost Never	Sometimes	Often	Very often	Always
Do you go out with friends during the week? (FILLER QUESTION)					
Always	Very often	Often	Sometimes	Almost Never	Never
In general, how often are you able to successfully control the irritations in your academic life?					
Never	Almost Never	Sometimes	Often	Very often	Always
In general, how often do you speak with your family? (FILLER QUESTION)					
Never	Almost Never	Sometimes	Often	Very often	Always
In general, how often do you fail at an academic task when under pressure?					
Never	Almost Never	Sometimes	Often	Very often	Always
In general, how often are you unable to control the way you spend your time on schoolwork?					
Always	Very often	Often	Sometimes	Almost Never	Never
How often do you feel comfortable in your surroundings? (FILLER QUESTION)					
Never	Almost Never	Sometimes	Often	Very often	Always
When faced with academic stress, how often do you find that the pressure makes you more productive?					
Never	Almost Never	Sometimes	Often	Very often	Always
How often do you feel that you perform better on an assignment when under academic pressure?					
Always	Very often	Often	Sometimes	Almost Never	Never
How often do you practice meditation? (FILLER QUESTION)					
Always	Very often	Often	Sometimes	Almost Never	Never
How often do you feel that stress for an exam has a positive effect on the results of your exam?					
Never	Almost Never	Sometimes	Often	Very often	Always

Appendix D

See Table 4.

Table 4 Self-efficacy scale

Rate according to level of self confidence:

Finish my homework assignments by deadlines

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Get myself to study when there are other interesting things to do

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Always concentrate on school subjects during class

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Take good notes during class instruction

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Use library to get info for my class assignments

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Plan my schoolwork for the day

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Organize my schoolwork

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Remember well information presented in class and textbooks

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Arrange a place to study without distractions

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Get myself to do schoolwork

1	2	3	4	5	6
cannot do at all		moderately certain can do			highly certain can do

Appendix E

See Table 5.

Table 5 Life satisfaction scale

In most ways, my life is close to my ideal.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
In most ways, my life at school is close to my ideal.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
The conditions of my life are excellent.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
The conditions of my academic life are excellent.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I am completely satisfied with my life.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I am completely satisfied with my academic life.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
So far I have gotten the most important things I want in life.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
So far I have gotten the most important things I want in school.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
If I could relive my life, I would change nothing.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
If I could relive my academic life, I would change nothing.					
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

Appendix F

See Table 6.

Table 6 Stress scale

I generally view myself as being stressed during the school year.					
Very True	Mostly True	Somewhat True	Somewhat False	Mostly False	False
I rarely experience academic stress.					
Very True	Mostly True	Somewhat True	Somewhat False	Mostly False	False
My friends see me as someone who is often stressed about school.					
False	Mostly False	Somewhat False	Somewhat True	Mostly True	Very True
I experience periods of academic stress at least once a week.					
False	Mostly False	Somewhat False	Somewhat True	Mostly True	Very True
My family sees me as someone who is often stressed about school.					
False	Mostly False	Somewhat False	Somewhat True	Mostly True	Very True
I feel as though I often experience more academic stress than my peers.					
Very True	Mostly True	Somewhat True	Somewhat False	Mostly False	False
I hardly ever think about how stressed I am.					
Very True	Mostly True	Somewhat True	Somewhat False	Mostly False	False

Appendix G

See Table 7.

Table 7 Means and standard deviations for all variables

	Hope	Eustress	Self-efficacy	Life satisfaction	Stress
Mean	4.78	3.93	4.61	4.12	3.68
Standard deviation	.64	.61	.77	.92	1.12

Appendix H

See Table 8.

Table 8 Correlation matrix for all variables

	1	2	3	4	5
1. Stress	–	−.223*	−.141	−.031	−.365**
2. Eustress	−.223*	–	.301**	.208*	.328**
3. Hope	−.141	.301**	–	.366**	.418**
4. Self-efficacy	−.031	.208*	.366**	–	.207*
5. Life satisfaction	−.365**	.328**	.418**	.207*	–

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

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