Resiliency and Well-Being as Moderators of Stress

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Abstract

College students experience a great deal of stress as they prepare for the transition from adolescence to adulthood. Furthermore, the ability to navigate stress and anxiety is challenged due to underdeveloped resiliency skills. Resiliency and well-being can act as a coping technique in building hope, commitment, accountability, and passion. The measurement of these factors can be an indication of how a person responds to stressful events or feelings. The study expected to see an interaction of resiliency as an overall moderator in the perception of stress based on actual stress level. The High Capacity Model of Resiliency Scale (H-CAP) was used for that specific testing of the components of resiliency. Stress was accounted for using the Undergraduate Stress Questionnaire (USQ), designed specifically for college students and typical stressful situations that they experience. Perceived stress was calculated using the Perceived Stress Scale (PSS). There was a positive correlation between actual stress and perceived stress as well as a significant difference in the stress level of the sample in comparison to the norms of the measures. Each component of resiliency reported a significant main effect with the stress scores, however; only commitment reported a significant interaction. This study has implications regarding the need for stress coping in college aged students.

Keywords: stress, perceived stress, resiliency, well-being, Undergraduate Stress Questionnaire, PSS, H-CAP.

Resiliency and Well-being as Moderators of Stress

Stress has specific detriments in many life domain areas, such as health and emotional regulation (Ng & Jeffery, 2003; Bovier, Chamot & Perneger, 2004). The perception of stress levels can be a reflection of an individual's ability to cope with a specific stressor. Undergraduates' abilities to cope with stress functions at a lower level than the general population and it can, in addition, to other effects, bring a negative impact to their academic performance (Durand-Bush, McNeill, Harding & Dobransky, 2015). Shi, Wang, Bian and Wang (2015) found that stressors could intensify perceived stress while well-being depreciates even to the point of suicidal ideation. Stressors that affect daily functioning can range from minor disturbances to extreme trauma such as arriving late to a class or a death in the family, respectively. In addition to the type, the number of stressors a person experiences can also influence their overall functioning; however, the perception of those events is what determines how the stress of the events is processed. Ozbay et al., (2007) found that the inability to properly process perceived stress constructively results in elevated levels of anxiety. Comparatively, in an individual with highly developed resiliency, perceived stress and anxiety levels will be lower due to increased levels of coping. Lower stress levels correlate with an improved well-being and overall physical health (Ozbay et al., 2007). Well-being and resiliency scales can be used as measures of perceived stress, while also being indicators of stress recovery. In a resilient individual, perceived stress would still appear to be low, suggesting a negative correlation between the individual's level of resiliency and the level of stress experience by an event (Shi et al., 2015). An individual is more likely to experience lower perceived

stress by activating "psychological resources including optimism, tranquility, low neuroticism and high openness" (Shi et al., p. 5), as well as using coping techniques, which can cancel the negative effects of stress (Thoits, 1995).

Stress

Stress is a relationship that is built between a person and his environment and it involves a cognitive decision of whether a situation is a challenge, threat, or harm in some way (Cutrona & Russell, 1990). For many negative events, intimate social support can be the coping mechanism an individual needs to deal with an event with a greater efficiency. The intensity and frequency of the stressful event can affect the pressure an individual feels from the environment; however, each person's reaction to the same stressing event may generate different outcomes (Lazarus & Folkman, 1984). Furthermore, Thoits (1995) identifies three different types of events that cause stress: "life events, chronic strains, and daily hassles" (p. 54). Life events are composed of life behavior changes that happen in a very short time and involve dramatic readjustment. An example of this would be a divorce to a spouse or a lost job. Chronic describes events that require persistent behavioral changes over a long period of time including events like a traumatic injury or severe financial problems. Daily stresses are defined as common events like a traffic jam that put mild strain on an individual throughout the day. For the purpose of this research, Durand-Bush et al., (2015) defined stress as the unresolved imbalance of daily demands and happenings that exceed the capacity of an individual's coping skills. Furthermore, any event that acts against the preparation level of an individual or requires the use of an individual's coping skills will be classified as a

negative event. Thoits (1995) acknowledges that a specific impact that stress can have is on the psychological well-being of an individual causing issues like anxiety; a buffer is needed to avoid that problem.

Specifically the topic of stress is sensitive to college students. There is a gap in the research on the moderator effect of resiliency on the stress perception of undergraduates, however. Previous studies have relevant insight on aspects of research of undergraduates and their management of stress. A study done on Canadian university students found that approximately 30% of them reported experiencing high levels of stress, equivalent to two times the amount of a nonstudent. Durand et al. (2015) performed two studies on groups of undergraduate students; the first study had 469 participants and the second study had 647. They wanted to know the level of stress of current undergraduate students and if self-regulation habits could directly affect the level of stress and psychological well-being in the students. They found an overwhelmingly high-stress level average for the population in comparison to previous studies and found a low mental health level in comparison to previous research. It was suggested that students likely do not possess adequate coping skills to deal with this degree of stress and the lack of coping skills contributes to a depressed and suicidal student body (Durand et al., 2015). Stress in students has been shown to have negative impacts on physical and psychological well-being as well as "poor academic performance, increased rates of substance use, and suicide" (Shi et al., 2015, p. 1). A number of different factors can contribute to the perceived stress outcome of an individual, including how severe an event is, the situations surrounding the happening, and duration of the event and timing.

The perceived stressed feeling ultimately comes from an individual's personal level of coping, situational factors, beliefs, and previous experiences (Cohen, 1992).

Perceived Stress

Research suggests that stress is more than just the emotional and physical outcome of a negative event; it is also linked to a perceived stress outcome or how an individual sees himself as able to handle the stress. According to Cutrona and Russell (1990), perceived control of the situation is a contributing factor in the outcome. Furthermore, studies have supported the theory that events perceived as uncontrollable or too hard to handle with low perceived support are more likely to leave the individual depressed (Durand-Bush et al., 2015; Thoits, 1995). High perceived stress levels could cause psychological distress such as anxiety and avoidance behavior. In addition, physical distress can result in high blood pressure or other possibly health issues (Cohen & Williamson, 1988). Furthermore, Cohen and Williamson (1988) also found that elevated perceived stress is also associated with shorter segments of sleep, lower exercise engagement, and increased quantity of alcohol and drug use. These are all indicators of how perceived stress can negatively influence the daily life of an individual.

Continued research is needed to investigate how to lower the perceived stress level of an individual after experiencing a negative, or multiple negative events. However, research has shown that social support contributes to the stabilization of an individual's stress level, provides emotional support, and encourages a more accurate perception of reality after events are inflated in his or her mind. The received social support is usually from an individual who has experienced the same thing or a related

stressor, increasing the perception of empathetic understanding. This, in turn, helps

reduce stress from more challenging situations and lowers the perceived stress level

(Thoits, 1986). The existence of coping mechanisms largely affects the perceived stress

outcomes. A person who perceives stress with a more advanced coping system, such as

high self-esteem, is typically unaffected by the negative health effects of stress. As well,

individuals use multiple methods of coping especially when the stressor is severe (Thoits,

1995). Therefore, coping successfully with a stressor is a quality of being resilient to the

effects of stress.

Resiliency and Well-being

Many sources offer different definitions of resiliency varying from the

developmental process perspective to a personal trait perspective (Lightsey, 2006).

Carver (1998) defines resiliency as the ability to return to a normal state after a negative

event has taken an individual away from that normal state. He also adds that a negative

event that takes a person from homeostasis can still have positive outcomes; an individual

can become desensitized to the traumatic event or it can increase the ability to recover if

the event were to happen a second time. However, the other direction an individual can

take is to become more sensitive to an event and therefore cope by adopting a strong

avoidance towards the event. Earvolino-Ramirez (2007) stated that the root of resilience

is the process of a child who is resistant to being affected by, and bounces back quickly

from, adversity. This child was first referred to as "invulnerable" before "resilience"

became a more applicable and well-known term. Another researcher defined the

necessary attributes of a resilient individual as: the ability to bounce back, high levels of

determination, strong social support, adaptability, high self-esteem and positivity (Fava & Tomba, 2009). Resilience is individualistic and can be determined based on factors like timing, social context, previous experiences, and the biological and psychological make-up of the individual (Cicchetti, 2010). Furthermore, Cicchetti (2010) indicates that strong predecessors to resilience are spirituality, low stress perception, and positivity. Fava and Tomba (2009) found that resilience is an adaptive concept as many events throughout an individual's life continue to add and take away from their personal ability to flourish.

Well-being specifically refers to the state of mental health in which an individual can function appropriately and successfully use coping mechanisms and handle stressing life events. Furthermore, well-being also indicates that an individual can contribute to society in a positive way. It does not only occur in the absence of mental illness but instead well-being exists in individuals who can function with high resiliency and adapt to fit a changing environment. Low well-being is correlated with depression and anxiety indicating that there is a connection with the resiliency levels attributing to a high well-being state. Not all individuals with multiple stressors are in a low well-being or a depressed state (Durand et al., 2015).

According to Sippel, Pietrzak, Charney, Mayes and Southwick (2015), social support can be given and received in a number of different ways. An individual can receive structural support in different ways such as the number of friends or the frequency of and form of social interaction. An individual is functionally supported by their perception of the benefits gained from the social interaction. Emotional support is based on feelings, the positive feelings of belonging, being respected, or being cared for.

Informational or cognitive support is also important to an individual. Coping and understanding can be found through the seeking and reception of advice (Sippel, Pietrzak, Charney, Mayes & Southwick, 2015). The perception of support comes from the feelings of love, esteem from others and being cared for which can promote healthy cognitive and physical being (Wethington & Kessler, 1986). Evidence supports the claim that strong social support enhances and improves resiliency due to the development of coping mechanisms. For example, in patients with a cardiac condition, a higher social support system helps them develop coping strategies that in turn help fight possible depression (Sippel et al., 2015) Social support can also aid in reducing anxiety levels as well as predict lower depression levels (Ozbay et al., 2007). Communities, family systems, and other groups can all promote resilience in the individual reflecting how a group as a whole can recover from negative events (Sippel et al., 2015).

High levels of perceived stress can be linked to several physical difficulties. It is strongly related to a poor and unbalanced diet and overall lower levels of exercise (Ng & Jeffery, 2003). In a study done by Ng and Jeffery (2003), high levels of perceived stress correlated with an increased chance of smoking as well as an overall lower chance of smoking cessation. The study displayed the repercussion of lower self-esteem and lower levels of self-confidence due to high levels of perceived stress. Furthermore, there is a high association between perceived stress and mental health of an individual (Bovier et al., 2004). The high levels of stress in the environment at a university can be a danger to the health of the students as well as continue to be a problem later on in careers if there is

no development of healthy coping mechanisms. Resiliency training is a possible

resolution for this issue.

        High Capacity Model of Resilience (H-CAP). More recently, research has

focused on potential contributions to resiliency development. Barclay (2016) suggested

four components of resilience: hope, commitment, accountability and passion. Hope in

resiliency is the ability to perceive recovery. Once hope is established, a commitment to

act is developed. The commitment may be through cognitive restructuring or behavioral

modification, however, the commitment is always the underlying motivator. Resiliency is

further promoted through accountability; the functioning level of relationships and an

individual's ability to accept responsibility for personal thoughts or behaviors reinforced

by social support. Finally, passion is developed as motivation to endure and must work

together with the other attributes in order to successfully attain healthy resiliency.

Barclay (2016) used his model to develop his High Capacity Model of Resilience (H-

CAP) to measure the level of resiliency based on the four components.

Role of Resiliency in Stress

        A strong mediator in handling daily stressful events is an individual's resiliency

level. Differences in resiliency level can contribute to the process of adaption after

stressful events and can play a role in the management and transformation after the event

(Ong, Bergeman, Bisconti & Wallace, 2006). High levels of resiliency not only minimize

the stressful response, but help lower the amount of negative thoughts. For students,

many stressors like socioeconomic status can activate their resiliency levels. Stress

creates an opportunity to practice new adaptive behaviors. A study done by Riet,

Rossiter, Kirby, Dluzewska, and Harmon (2015), focused on resiliency training in a 7-week program. They found that resiliency strengthening displayed a positive impact on the outcome of stressed students. In a stressful event such as the attacks on September 11th, 2001, many people were affected by second hand trauma and had reported problems such as troubled sleep, depression, and problems in concentration. This stressful event triggered the need for the resiliency and positivity in order to recover (Fredrickson, Tugade, Waugh & Larkin, 2003). Fredrickson et al., (2003) further found that resiliency and positive emotions work best together as they aid the individual in not only coping but in optimistic thinking for recovery and the future. Furthermore, positive emotions play a key role in resilience over repeated adversity and helps create well-being centered on adaption (Ong et al., 2006). Positive social interactions are very important for the development of a high Psychological Well-Being (PWB) and stressful events without positive interaction can lead to a low PWB. PWB can contribute directly to the long-term outcomes of students' academic scores and even the outcomes of their professional careers later on in life (Bowman, 2010).

Reason for study

Since stress is a normal part of daily life and occurs in varying degrees, it is important to focus instead on the level of the perceived stress and the coping level. According to research by Ong et al., (2006), Fredrickson et al., (2003) and others, resiliency level is a moderator in the perceived stress level of an individual. This research seeks to understand the relationship and role of resiliency in how an individual perceives his stress level. Undergraduates are a population of interest due to the low level of

resiliency they possess at their current developmental stage in life. In the study there is

expected to be a correlation between the USQ and the PSS. Furthermore, it is expected

that resiliency has an effect on stress perception due to research so there should be a

significant interaction (Ong et al., 2006; Fredrickson et al., 2003).

Research Questions

Do the subsets of the H-CAP, which are hope, accountability, commitment and

passion, have any correlation to the level of perceived stress? Do any of the components

of the H-CAP have more of an influence on the moderation of stress than do the others?

Does an individual's resiliency level measured by the H-CAP moderate the relationship

between actual stress and perceived stress? Can undergraduate students' stress and

resiliency levels show a significant interaction? The researchers believe that the

components of the H-CAP will correlate and all show significant interactions with the

stress management of undergraduates. Furthermore, the resiliency level as measured by

the H-CAP will have a significant moderator relationship between actual stress and

perceived stress.

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Method

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Participants

Individuals in this study are undergraduate college students at Liberty University

with 67% in the age range of 19-21. The data collection was in a convenience sample

survey format issued out to any student in any psychology class needing credit for an

assignment. The students received credit for the assignment by their professor after

completing the survey and writing a short summary on it. The survey was posted on a

web page through the Department of Psychology at Liberty University and was open to all students to complete for a total of six weeks. It is assumed the data is mostly from current psychology class students due to the need to fulfill an assignment for their current courses.

Participants reported as 10% freshman, 22% sophomore, 33% junior, and 35% senior. This supports the age group that was in the majority, 67% of the participants were between 19 and 21 years of age. About 75% of the study was female due to the high female population in the psychology department at Liberty University. In reference to relationship status, 63% of participants reported being single, 32% reported as "in a dating relationship", and only 5% reported as "engaged," "married," or "other" which was not specified in this research. When asked, "Are you stressed right now?" 72% reported "yes."

Measures

Demographics Questionnaire. A short demographics questionnaire was collected that included no personal information, but instead, general information of gender, age, student status, relationship status and a yes or no question addressing if the individual is stressed right now was included. The purpose was to gather information for demographics to use in comparison and to generate descriptive statistics data.

Undergraduate Stress Questionnaire (USQ). Undergraduate Stress Questionnaire (USQ) is an 83 item list designed specifically for college students around specific stressors they would experience (Crandall, Preisler & Aussprung, p. 627). Participants have to say if they did (Yes) or did not (No) experience the event listed in the

past month, for example, "property stolen." The majority of the items are not related to school activities (51 items), while 21 items are related to college and 11 items are classified as in-between. The average score of the study has been 17.63 with a standard deviation of 7.93. Women scored higher than men, 19.3 vs. 15.8 respectively. The measure had good reliability with the split-half reliability measuring at .71. There is a low level of confounding variables, which supports a high validity in the measure as well.

High Capacity Model of Resilience and Well-being (H-CAP). The High Capacity Model of Resilience and Well-Being (H-CAP) is a new 21-item scale that focuses on specific traits that describe aspects of resilience and well-being in a new screening tool (Barclay, 2016). The measure displayed high validity for the subsets displaying good internal consistency with the alpha coefficient at .92. The subset scales showed alphas ranging from .75 to .92: Hope with the strongest at .91, Harmonious Passion at .85, Accountability at .80 and Commitment at .75. Scoring is by the subsets and broken down by the question number. Questions 1-9 are a part of the Hope scale and the maximum score is 45 and an average of 36-39. Questions 10-12 make up the Commitment Scale and can have a maximum score of 15 with an average of 12-14. Questions 13-16 reflect the Accountability Scale with a maximum score of 20 and an average of 14-19. The final items 17-21 reflect the Passion Scale with a maximum score of 25 and an average of 17-23. This subset-focused measure is new and has little previous research but has good internal consistency within itself and between the subsets.

Perceived Stress Scale (PSS). The Perceived Stress Scale (PSS) is a 10-item measure intended to measure an individual's perceived stress throughout the past month

(Cohen & Williamson, 1988). Norming was done from a sample of 2,387 respondents in

the U.S. For the population of males on average are 12.1 (SD=5.9) and for females on

average was 13.7 (SD= 6.6). The overall average PSS score for both genders was 13.02

(SD=6.35). The PSS will ask questions like "In the last month, how often have you felt

nervous or 'stressed?'" and will be scored according to a rating of 0-Never to 4-Very

Often. Reversed questions are question numbers 4, 5, 7 and 8 and the scoring is

calculated by totaling all of the scores. Higher scores suggest greater perceived stress.

The reliability score has an alpha of .78. The measure has shown consistencies among

other instruments like it displaying high validity.

Procedure

Three different measures were found that accurately accounted for the constructs

of this study. Permission was obtained for use of the surveys and IRB approval was

granted. The measures were entered into Qualtrics, an online database for surveys

through Liberty University and put in the order of: Demographics, Undergraduate Stress

Questionnaire, High Capacity Model of Resilience, and Perceived Stress Scale. The last

question of the demographics "Are you stressed right now?" and the first Undergraduate

Stress Questionnaire (USQ) measure occurs before the rest in order to subconsciously aid

the students to readily remember stressful situations before completing the rest of the

measures. After a final approval from the Department of Psychology the survey was

launched on the Psychology Activities web page on the University website in order to be

accessed by students. The survey was conducted in a convenience-sampling format

through an online webpage. After six weeks the survey was closed and the data was

compiled. The measures were entered into a moderation model format through

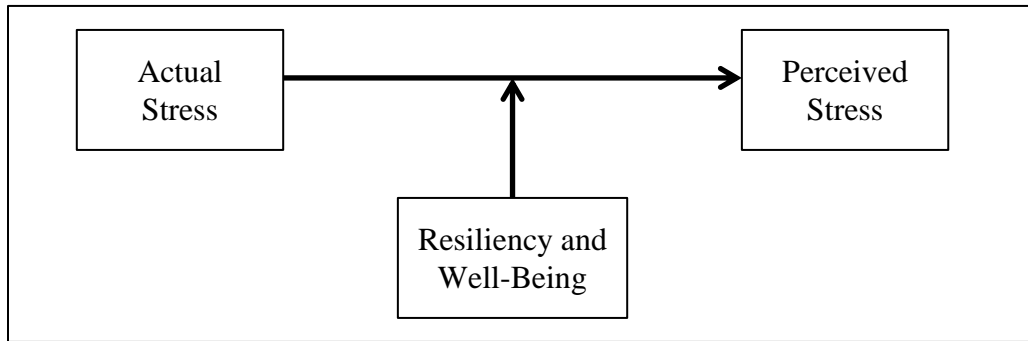PROCESS and SPSS using a Model 1 design as shown in Figure 1.

Figure 1: Research conceptual design.

Results

A statistical test was performed on the data using PROCESS regression model 1

for moderators. Results indicated 3 main effects and one interaction although stress levels

on both measures were high compared to population norms. Specific results will be

discussed below.

Table 1

Table of Descriptive Statistics of Measures

	N	Min.	Max.	Mean	Std. Deviation
UNDERGRAD_FINAL_SCORE	310	2	62	32.29	12.107
PSS_FINAL_SCORE	310	5	36	21.16	6.441
HOPE_SCALE	310	9	45	34.86	6.026
COMMITTMENT_SCALE	310	3	15	11.49	2.327
ACCOUNTABILITY_SCALE	310	4	20	16.09	3.500
PASSION_SCALE	310	5	25	18.34	4.175
Valid N (listwise)	310				

USQ

The study displayed that the sample (M= 32.29, SD= 12.11) was highly stressed in comparison to the means of normal undergraduate populations (M= 17.63, SD= 7.93). A contributing factor is the timing the survey was collected as it was given during the end of the semester right before and continuing during final exams. Research done on the USQ shows that stress increases at the end of the semester from the beginning of the semester in perceived stress and in measured life stress (Crandall et al., 1992).

PSS

In agreement with the USQ, the PSS results for the university were also high for the sample studied in comparison to the population means. The sample mean for the age group is M=21.6 with a standard deviation of 6.44. The population mean for the age group 18-29 (M= 14.2, SD= 6.2) is over a standard deviation below the reported sample mean indicating that the sample is in a high stress state. Furthermore, the PSS norms indicate that this age group (18-29) has the highest PSS scores out of the age group brackets indicating not a higher number of stressors but possibly a lower developed level of resiliency.

H-CAP Components

Each component of resiliency and well-being scored within the average range between the clinical population norms and the non-clinical, highly resilient population norms taken from a sample of highly ranked military officers. The hope scale fell in the average ranges (M=34.86, SD= 6.03), in-between the non-clinical population (M=43, Minimum=40) but slightly closer to the maximum of the clinical population (M=23,

Maximum=30). The commitment scale for the population (M=11.49, SD= 2.33) scored

very close to the max clinical score (Maximum=11, Mean=9) in comparison to the non-

clinical population norms (M=15). The accountability component also scored within the

average range (M= 16.02, SD= 3.5) in-between the clinical (M=11) and the non-clinical

(M=19). Passion in the sample (M=18.34, SD 4.18) also scored in the average range in-

between the non-clinical (M=23) and the clinical (M=11). The only component that

scored low, causing a second mention is commitment. The scores for the sample were

very close to the scores obtained for the clinical population indicating very unusually low

levels of commitment for an average undergraduate sample population.

     A multiple regression model was tested to investigate whether the correlation

between actual stress and perceived stress depends on the level of resiliency of an

individual based on the four resiliency components. The components each individually

had a significant main effect with the PSS, as shown in Table 2. There was a significant

main effect of hope on the USQ as a predictor of low stress $F(3, 310) = 58.67$, $p < .001$,

however, there was a non-significant interaction $F(1,310) = 1.61$, $p = .205$. There was a

significant main effect of accountability on the USQ as a predictor of low stress $F(3, 310)$

$= 46.26$, $p < .001$, however, there was a non-significant interaction $F(1,310) = 1.24$, $p =$

.266. There was a significant main effect of passion on the USQ as a predictor of low

stress $F(3, 310) = 65.71$, $p < .001$, however, there was a non-significant interaction

$F(1,310) = 3.46$, $p = .064$.

Table 2

Table of Main Effects

	R	R-sq	MSE	F	df1	df2	p
HOPE	.6043	.3652	26.5919	58.6748	3	306	.0000
ACC	.5586	.3120	28.8185	46.2607	3	306	.0000
PASS	.6259	.3918	25.4768	65.7075	3	306	.0000
COMM	.5588	.3123	28.8086	46.3112	3	306	.0000

Results indicated that commitment (b= -.702, SE_b=.132, β= -.254, p=.000) and

actual stress (b= .233, SE_b=.025, p=.000) both had a significant main effect with

perceived stress levels, shown in Table 3. The interaction between commitment and

actual stress was also significant (b=.049, SE_b=.011, p=.000), suggesting that the effect of

actual stress on perceived stress depended on the level of commitment. Simple slopes for

the association between actual stress and perceived stress were tested for low (-1 SD

below the mean), moderate (mean), and high (+1 SD above the mean) levels of

commitment. Each of the simple slope tests revealed a significant interaction between

commitment with perceived stress and actual stress, but the commitment was more

strongly related to lower levels of perceived stress and actual stress (b=.346, SE_b=.036,

p=.000) than for moderate (b=..233, SE_b=..0252, p=.000) or higher levels (b=.120,

SE_b=.035, p=.000) of actual stress. Figure 2 plots the simple slopes for the interaction.

Table 3

Table of Commitment Model

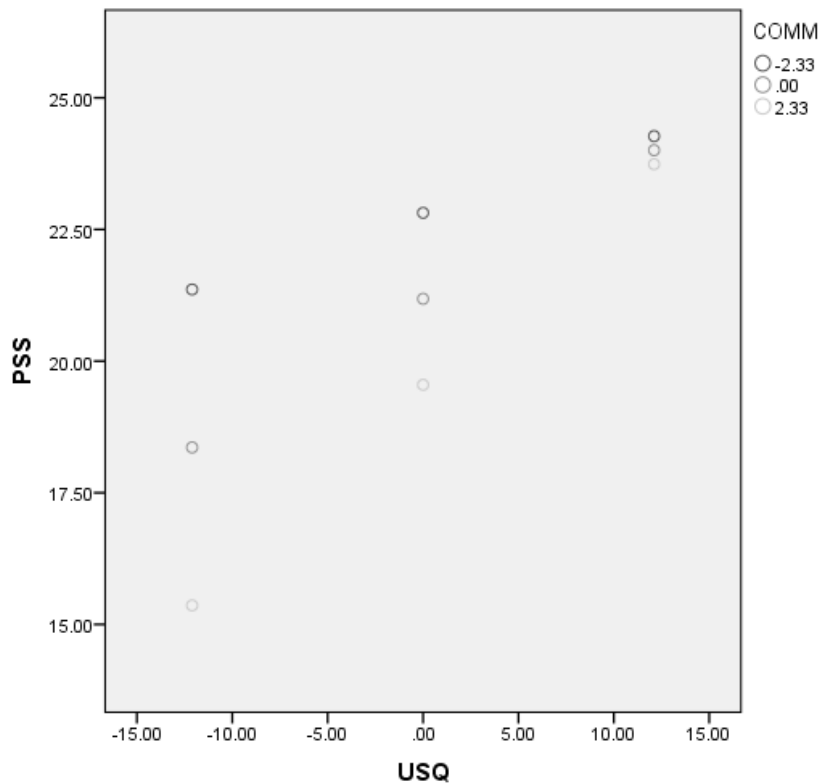|	coeff	se	Model t	p	LLCI	ULCI
Constant	21.183	0.3049	69.479	.0000	20.5831	21.783
COMM	-0.7018	0.1316	-5.3328	.0000	-0.9608	-0.4429
USQ	0.2331	0.0252	9.2416	.0000	0.1835	0.2828
int_1	0.0485	0.0107	4.5239	.0000	0.0274	0.0696

*coeff= coefficient

Figure 2: Simple slopes plot.

The results displayed that each component of the H-CAP had a significant main effect with commitment reporting as the only one with a significant interaction. The high stress of the sample and the main effects all contributed to a correlation between stress and resiliency, which the discussion section will go into more detail about below.

Discussion

Overall, the components all displayed a significant main effect with the stress scores, indicating that the higher the resiliency component score, the lower the PSS score. This would indicate that those with higher functioning resiliency skills are able to better handle stress levels and keep perceived stress at a lower rate, assuming the stressful events experienced is on average about the same. Therefore, hope, accountability, and passion can be considered predictors of perceived stress. As the resiliency components scores are high, stress scores tend to decline.

The H-CAP measure is a new unpublished measure for resiliency and well-being. This study found evidence that each of the components studied; hope, commitment, accountability, and passion, were all significant in stress perception. Resiliency is the ability to bounce back to normal after a traumatic or stressful event (Fava & Tomba, 2009). In that all the components were significant in displaying their role in reduced stress, it can be concluded that the components are valid in measuring resiliency. This further indicates that each component is a needed and important aspect of resiliency and is reliable and valid to be used in further study.

In the analysis of the H-CAP scores, the sample of university students all fell within average ranges, with the specific consideration that commitment was reportedly closer to the clinical norms than to the non-clinical. A few outliers in the data, however, reported scores below the clinical norm minimums and also reported overly high stress scores. This indicates a strong relationship between the components of the H-CAP model and the perceived management of stress; each component has a main effect with the

stress measures. A passion score below "6" indicates obsessive passion, a type of passion that will affect each component, especially commitment. Obsessive passion describes the lack of balance of passion with the other components. During this lack of balance an individual becomes obsessed with an emotion that controls his or her behavior creating an unhealthy passion (Barclay, 2016). When the component of passion fails to balance, the individual will have trouble committing to do what they know they need to do as well as utilize the other aspects of resiliency. One passion score fell below "6" and also scored in accountability and commitment within clinical ranges. This same outlier correlated with elevated PSS scores signifying the lower the resiliency, the higher the stress and supporting the assumption of low passion score's impact.

It is possible that the students are not reporting high levels of stress as measured in this study year round. However, with no data to compare it to, the assumption that stress levels are higher at the end of the semester than at the beginning can only be based on that which is seen in previous research (Crandall et al., 1992). Furthermore, the assumption is made that without high levels of stress, resiliency scores would be higher, and closer to that of the non-clinical population due to the lack of negative pressure on resiliency. Another assumption that can explain some of the scores that were analyzed is that there is a difference between having resiliency tools, and using them. An individual can score high in accountability, however, if their stress is overwhelming or their peer group is also stressed, the accountability would not equate to helping to alleviate the stress. This can be a reason for the moderation insignificance of resiliency components affecting the perceived stressed state.

Another consideration could be the presence of depression. The measures did not account for this factor nor did the researchers consider its presence in the student body. Highly stressed and lower resilient individuals can experience suicidal ideation at their worst state (Shi et al., 2015), which can also be a sign of depression. Researchers Dahlin, Joneborg and Runeson (2005), looked at a sample of medical students to compare their depression scores and stress scores as well as suicidal ideation. Although the current sample was not medical students, the undergraduates did report high stress scores similar to the medical students. The medical students also reported depression that was correlated with stress to a degree, suggesting the relationship between the two factors. Several of the factors of stress that were studied were directly correlated with depression scores (Dahlin et al., 2005). Depression can have negative effects on one's resiliency level, possibly overpowering it. According to research, depression can encourage an individual to learn helplessness and lose motivation to get out of a current stressed state, and can increase withdrawal. Depression can also overpower positive emotions in resilient individuals, flexibility in thought, and acceptance of one's circumstances, as well as lower the desire for social support. The researchers suggest, due to the relation of social support to depression and therefore the outcome of resilience, increasing both physical and emotional social support during stressful times to enhance stress resilience (Southwick, Vythilingam, & Charney, 2005). All of these factors display that depression may have a role in lowering resiliency scores as measured by the concepts of hope, commitment, accountability and passion.

Due to the findings of high stress and the knowledge of lower resiliency among college age individuals, providing aid and support is crucial in order to help them lower the high stress levels. Resiliency training aims to increase constructs connected with advanced coping mechanisms so that an individual may through cognitive behavioral training become more aware of needed commitment in stressful times. Training in resiliency is beneficial to those at any level of stress because of the correlation it has with lower stress levels. A large amount of the research on resiliency training is on a concept called mindfulness-based stress reduction (MBSR) training. The training encompasses an individual's ability to see an event as it is actually happening, and learn to process in the moment, as opposed to unhealthy coping such as cutting. The training is based on changing individuals' perceptions on how they view experiences, and has been able to show results that indicate it is helpful in lowering stress levels (Nyklicek & Kuijpers, 2008). In addition to clinical interventions, research has supported that non-clinical interventions such as self-help books like The Mindfulness and Acceptance Workbook for Anxiety, by Forsyth and Eifert (2007), can benefit an individual's well-being. Mindfulness directly focuses on the perception of events or stress and can quickly show improvement once negative appraisals are turned down. Mindfulness has abundant evidence to lower perceived stress. Training in mindfulness would strengthen each component of resiliency (Weinstein, Brown & Ryan, 2009). Hope is encouraged by the ability to see things as they are, and increases the realization that the stressful event does not define the individual. Each aspect of resiliency positively correlates with another; therefore, as hope rises, commitment to act will become prominent as well. As hope and

commitment increase, accountability and passion will also increase in ability as the

individual realizes they are not alone, they can survive the event and move past it, as well

as become stronger because of it. Mindfulness training, in summary, enhances an

individual's positive well-being, which in turn acts as a coping mechanism for stress.

Commitment is a significant component of resilience that can make an impact in

the stress perception process. Therefore, training to enhance commitment skills would be

useful to those with low commitment, or individuals that have room for growth in that

area. Acceptance and commitment training has been well researched by Hayes, Luoma,

Bond, Masuda and Lillis (2006) and approaches the matter of commitment from the

perspective that the cognitions and language used to handle experiences effects the ability

or inability to change behavior. This process is achieved by following six steps:

acceptance, cognitive diffusion, being present, self as context, values, and committed

action. Acceptance is taught instead of avoidance, while cognitive diffusion is meant to

alter the way an individual relates with their thought. Being present is exactly as stated,

being able to psychologically relate with a moment as it occurs. Self as context is taught

by mindfulness exercises to make an individual aware of the flow of experiences without

investing in them. Values help create purposeful action as directions in life are declared

and committed action is the official commitment of those values by the use of a variety of

short-term, medium and long term goals (Hayes et al., 2006).

Limitations

A few limitations should be mentioned involving this study. The study is slightly

limited in the applicability of the results due to the time frame of when the study was

conducted. The measures were given in a very high stress time for college students;

therefore providing the results expected about high stress states. However, there was no

control group from the general unstressed population to compare to the samples stress

scores so the stress is only assumed to be higher than normal as supported by previous

research (Crandall et al., 1992). Another limitation is that the external value of this study

is limited due to the nature of an evangelical Christian university possessing a Christian

worldview that tends to reduce stress levels as reported in previous research. In a trial

college education course, researchers sought to find if teaching religion and spirituality in

the context of stress management and spiritual growth would be beneficial to the

students. They found that the implementation of such a course would encourage the

students to generate their own opinions on religion and then implement them into stress

management; an act that works at reducing stress due to spiritual acts such as meditation,

and an increase in character strengths (Oman, Flinders, & Thoresen, 2008). Another

study reported that religiosity is correlated with lower levels of depression and other

conflicting factors that keep an individual from strengthening resiliency (Southwick et

al., 2005). Furthermore, the population of students fell within the norms of society in

terms of resiliency.

　　　　A final discussed limitation is the convenience sample format. The convenience

sample provided students who would be presumed to be more committed than their peers

by completing a survey for class credit, providing data that does not include the low end

of the commitment spectrum. Another important note is that the H-CAP is a new

unpublished measure, although the research done from it so far has supported the

reliability and validity of the components.

Future Research

There are a few considerations and suggestions for future research. In further

studies, the limitations could be taken into account and adapted in order to provide more

sound research. The first consideration would be to collect data in a non-convenience

sample format, for example, a random selection from several different schools. It would

be beneficial to collect data during a stressful time of the semester and compare it to data

collected at a non-stressful time of the semester, in order to confirm stress norms and

confirm the stress change in the individuals. Another consideration for future research

would be the use of a comparative score, for example, GPA; this could provide a

comparison point of how much the stress has a physical effect on the student, other than

only self-reported resiliency. Furthermore, the study lacked a comparison group or a

control group so the data obtained is compared to assumed norms and researched based

conclusions. There is a need to eliminate the limitation of the lack of comparison

measures from different times of high stress and low stress. In order to eliminate the

limitation, an implementation of comparison that would provide the study with test-retest

reliability would be to give the surveys at multiple times in order to find an average of

scores and obtain comparison measures. More research is also needed on the new H-CAP

measure. This study provided further support for the validity of each component existing

as a strong aspect of resiliency and well-being; however, further research should continue

to evaluate its application in different environments.

References

Barclay, T.H. & Barclay, R.D. (2016). The high capacity model of resilience and well-being scale [Assessment instrument]. Unpublished instrument.

Barclay, T.H. (2016). *Development and validation of the high capacity model of resilience and well-being*. Manuscript Submitted for publication.

Bovier, P. A., Chamot, E. & Perneger, T. V. (2004). Perceived stress, internal resources, and social support as determinants of mental health among young adults. *Quality of Life Research 13*, 161-170.

Bowman, N. A. (2010). The development of psychological well-being among first-year college students. *Journal of College Student Development, 51*(2), 180-200.

Carver, C. S. (1998). Resilience and thriving: Issues, models, and linkages. *Journal of Social Issues 54*(2), 245-266.

Cicchetti, D. (2010). Resilience under conditions of extreme stress: A multilevel perspective. *World Psychiatry 9*(3), 145-154.

Cohen, S. (1992). Stress, social support, and disorder. In H. Veiel & U. Baumann (Eds.), *The Meaning and Measurement of Social Support*, (pp. 109-124). New York: Hemisphere Press.

Cohen, S. and Williamson, G. Perceived stress in a probability sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) The Social Psychology of Health. Newbury Park, CA: Sage, 1988.

Crandall, C. S., Preisler, J. J., & Aussprung, J. (1992). Measuring life event stress in the lives of college students: The undergraduate stress questionnaire (USQ). *Journal of Behavioral Medicine, 15*(6), 627-662.

Cutrona, C. E., & Russell, D. W. (1990). Type of social support and specific stress:

  Toward a theory of optimal matching. In B. R. Sarason, I. G. Sarason, & G. R.

  Pierce (Eds.), *Social Support: An Interactional View* (pp. 319-366). New York:

  Wiley.

Dahlin, M., Joneborg, N., & Runeson, B. (2005). Stress and depression among medical

  students: A cross-sectional study. *Medical Education, 39*(6), 594-604.

Durand-Bush, N., McNeill, K., Harding, M., & Dobransky, J. (2015). Investigating stress,

  psychological well-being, mental health functioning, and self-regulation capacity

  among university undergraduate students: Is this population optimally

  functioning? *Canadian Journal of Counseling and Psychotherapy, 49*(3), 253-

  274.

Earvolino-Ramirez, M. (2007). Resilience: A concept analysis. *Nursing Forum, 42*(2),

  73-82.

Fava, G. A., & Tomba, E. (2009). Increasing psychological well-being and resilience by

  psychotherapeutic methods. *Journal of Personality, 77*(6), 1903-1934.

Forsyth, J. P. & Eifert, G. H. (2007). *The mindfulness and acceptance workbook for*

  anxiety: A guide to breaking free from anxiety, phobias, and worry using

  acceptance and commitment therapy (2nd ed.). Oakland, CA: New Harbinger

  Publications.

Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are

  positive emotions in crises? A prospective study of resilience and emotions

  following the terrorist attacks on the United States on September 11th, 2001.

Journal of Personality and Social Psychology, 84, 365-376. doi: 10. 1037/0022-3514. 84. 2. 365.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Journal of Behaviour Research and Therapy 44*, 1-25.

Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping.* New York: Springer Pub.

Lightsey, O. R. (2006). Resilience, meaning, and well-being. *The Counseling Psychologist*, *34*(1), 96–107. doi:10.1177/0011000005282369

Ng, D. M., & Jeffery, R. W. (2003). Relationships between perceived stress and health behaviors in a sample of working adults. *Health Psychology, 22*(6), 638-642.

Nyklicek, I. & Kuijpers, K. F. (2008). Effects of mindfulness0based stress reduction intervention of psychological well-being and quality of life: Is increased mindfulness indeed the mechanism? *Annals of Behavioral Medicine 35,* 331-340.

Oman, D., Flinders, T., & Thoresen, C. E., (2008). Integrating spiritual modeling into education: A college course for stress management and spiritual growth. *The International Journal for Psychology of Religion, 18,* 79-107.

Ong, A. D, Bergeman, C. S., Bisconti, T. L. & Wallace, K. A., (2006). Psychological resilience, positive emotions, and successful adaption to stress in later life. *Journal of Personality and Social Psychology, 91,* 730-749. doi: 10. 1037/0022-3514. 91. 4. 730

Ozbay, F., D., Johnson, C., Dimoulas, E., Morgan, C. A., D., Charney, D., & Southwick,

      S. (2007). Social support and resilience to stress: From neurobiology to clinical

      practice. *Psychiatry, 4*, 35-40.

Riet, P. V. D., Rossiter, R., Kirby, D., Dluzewska, T., & Harmon, C. (2015). Piloting a

      stress management and mindfulness program for undergraduate nursing students:

      Student feedback and lessons learned. *Nurse Education Today, 35*, 44-49.

Shi, M., Wang, X., Bian, Y., & Wang, L. (2015). The mediating role of resilience in the

      relationship between stress and life satisfaction among Chinese medial students:

      A cross-sectional study. *BMC Medical Education, 15*(16), 1-7.

Sippel, L. M., Pietrzak, R. H., Charney, D. S., Mayes, L. C., & Southwick, S. M. (2015).

      How does social support enhance resilience in the trauma-exposed individual?

      Ecology and Society, *20*(4), 10.

Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of

      depression and resilience to stress: Implications for prevention and treatment.

      Annual Review of Clinical Psychology, 1, 255-291.

Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What

      next? *Journal of Health and Social Behavior*, 53-79.

Thoits, P. A. (1986). Social support as coping assistance. *Journal of Consulting and

      Clinical Psychology, 54*(4), 416-423.

Weinstein, N., Brown, K. W., & Ryan, R. M. (2009). A multi-method examination of the

      effects of mindfulness on stress attribution, coping, and emotional well-being.

      Journal of Research in Personality, 43, 374-385.

Wethington, E., & Kessler, R. C. (1986). Perceived support, received support, and

    adjustment to stressful life events. *Journal of Health and Social Behavior*, 27(1),

    78-89.