

Spring 2016

Exploring the associations among college students self-reported resilience, coping behavior, goal orientation and passion for academics

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Exploring the Associations Among College Students Self-reported Resilience, Coping Behavior,
Goal Orientation and Passion for Academics

An Honors Program Project Presented to
the Faculty of the Undergraduate
College of Health and Behavioral Studies
James Madison University

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May 2016

Accepted by the faculty of the Department of Psychology, James Madison University, in partial fulfillment of the requirements for the Honors Program.

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PUBLIC PRESENTATION

This work is accepted for presentation, in part or in full, at [venue] CAA Research Conference on [date]

4/16/2016.

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Acknowledgements

I would like to acknowledge the faculty of the Psychology Department who has helped me to create and write my thesis. First, I would like to thank my advisor Dr. Monica Reis-Bergan who provided guidance throughout every step of the process and helped me to shape my project into what it is today. I would also like to thank Dr. Bryan Saville and Dr. Kethera Fogler for serving on my committee where they provided guidance and perspective to improve my thesis.

Additionally, I would like to thank the JMU Office of Research and Scholarship for providing funding to attend CAA Conference to present my thesis.

Abstract

The current study expanded research on resilience by examining associations between resilience, coping behaviors, goal orientation and passion for academics of college students. Participants were 252 undergraduate students (147 female, 105 male) with an average age of 19. Three resilience scales assessed in this study, Resilience Scale for Adults, Brief Resilience Scale and the Academic Resilience Scale, were positively correlated with each other. Resilience was positively correlated with adaptive coping, learning goals and harmonious passion. Resilience and maladaptive coping were negatively correlated. This study connected variables not previously examined in a college student population. Limitations and implications of the findings are discussed.

Exploring the Associations Among College Students Self-reported Resilience, Coping Behaviors, Goal Orientation and Passion for Academics

The concept of resilience originated from the observation that some people remain functional during and after stress inducing events. In order to investigate these observations researchers focused on populations especially prone to stressful experiences or with increased risk factors for stress such as maltreated children and child survivors of wartime tragedy (Masten et al., 1991). A natural expansion of the topic, as seen by the researcher, moves resilience research to the college student population with a focus on the general population compared to high-risk individuals in the community such as those that have experience trauma. There are many college specific stressors that students experience especially during the transition to college life. Some students may experience difficulty picking a major, navigating a novel social environment, pressure for good grades and temptation to use illegal substances such as drugs and alcohol (Bland, Melton, Welle, & Bigham, 2012; Magrys & Olmstead, 2015). This study will examine various behavior outcomes, including coping behaviors, goal orientation, passion for academics and substance use. An examination of resilience in conjunction with health behavior variables will allow a better understanding of college students' stress response. Hopefully, this research can contribute to an understanding of the health of college students.

Resilience

The concept of resilience originated in the natural science discipline of physics and engineering in reference to “the ability of materials to bounce back” following physical stress (Boyden & Mann, 2005, p. 5). The medical community soon adopted the term to refer to a patient's survival of physical trauma. The concept carried its definition in the natural sciences to the social science application in the field of psychology. As a psychological concept, resilience

was first explored in the discipline of psychopathology of at-risk children (Boyden & Mann, 2005). Researchers noticed some children flourished despite numerous risk factors; therefore, these children were labeled resilient (Boyden & Mann, 2005; Masten et al., 1991).

According to Masten et al. (1991), resilience is the “process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances” (p. 2). Historically, a prominent area of research in resilience entails investigating children with good outcomes. An example work by Gottesman and Shields (1982) examined children of schizophrenic mothers to see if they would develop the condition. Children with schizophrenic mothers have a ten times higher risk of developing schizophrenia compared to the general population, but only 10% of those at risk develop schizophrenia. According to Gottesman and Shields, the 90% of children who do not develop schizophrenia may be resilient. Additionally, Werner (1989) conducted a longitudinal study of risk for children in Hawaii. Multiple factors including poverty, low maternal education, and family instability increased risk for developmental issues. One third of participants had four or more risk factors and of them one third were identified as resilient because they did not develop any problems associated with the risk factors (Werner, 1989).

The second historically prominent area of research defines resilience as a method for restoring equilibrium (Masten et al., 1991). An area of research, which utilizes this definition of resilience, is examining the effects of divorce on children. Masten et al. (2011) presented conclusions from divorce research and concluded that children coping with parental divorce have an immediate crisis period following divorce then a gradual return to normal functioning. This is a pattern expected from a resilient response by the children. This research additionally concluded that boys of divorcing parents react with more conduct problems compared to girls which may be the result of continuing to reside with their same-sex parent otherwise known as their mother

(Masten et al., 1991). A positive outcome of divorce on children is the promotion of more responsibility (Masten et al., 1991).

The third prominent area of study includes resilience as it pertains to recovery, specifically as recovery following acute traumatic experiences such as surviving gun violence (Masten et al., 1991). Masten et al. (1991) explains the affects of gun violence on children by citing Pynoos et al. (1987) who examined the effects of sniper incident on children 5-13 years old. Pynoos et al. (1987) found that following a sniper incident proximity to the threat rather than sex or age of the children resulted in differences in traumatic response one month after the trauma. Masten et al. reported that following acute traumatic events the behavior of children is similar to that of adults such as sleep disturbances and heightened anxiety. All of the research previous discussed measures resilience as a behavioral variable, but there has been a move in the conceptualization of resilience so that it can be measured as an individual difference variable. More specifically this means that instead of resilience being measured by GPA or staying in course it varies across all individuals as a trait they carry with them. Many researchers have created these measures and one has not appeared to be universally accepted.

Much controversy surrounds the concept of resilience due to its ambiguity across literature as illustrated by the three avenues of conceptualization examined by Masten et al. (1991). A comprehensive theoretical model for resilience does not exist in the current literature. The lack of a distinct model has prevented a detailed discussion of the mechanisms underlying resilience (Windle, Bennett & Noyes, 2011). Windle et al. (2011) conducted a metanalysis in order to further understand resilience and the existing self-report measures, which attempt to quantify it. Windle et al. found 15 relevant measures for resilience. This included measures with a target population of children or adults. The variety of measures has led to inconsistency in the

concept and the protective factors associated with resilience. Inconsistency is exemplified in the prevalence rate of resilience, which varies from 25% to 84%, which begs the question what are researchers measuring with resilience scales? Each measure seems to have a different variation in factors contributing to resilience. Since the current study focuses on college students, resilience measures created for adults were selected. The review conducted by Windle et al. (2011) evaluated resilience scales for their “content validity, internal consistency, criterion validity, construct validity, reproducibility, responsiveness, floor and ceiling effects and interpretability” (p. 5). After evaluating the measures four were determined to be the best: Connor Davidson Resilience Scale (Connor & Davidson, 2003), the Brief Resilience Scale (Smith et al. 2008), and two versions of the Resilience Scale for Adults (Friborg et al. 2003), 33-items or 37-items. While these measures performed the best in the methodological review, each operationalized resilience differently. The Brief Resilience scale (Smith et al., 2008) focuses on resilience as the ability to “bounce back from stress” (Windle et al., 2011, p. 10). The Resilience Scale for Adults (Friborg et al., 2003) was developed from longitudinal data on the features of people with high resilience. The areas defined in the longitudinal research such as external support systems and family cohesion were the basis for the creation of the questionnaire items. This measure accounts for a wide variety of factors and levels of resilience. The Connor Davidson Resilience Scale (Connor & Davidson, 2003) is based on the idea of resilience reflecting an individual’s ability to cope with stress. This scale is not widely available for use, so was not utilized in the current study. Therefore, the Resilience Scale for Adults and the Brief Resilience Scale were used in this study. Some researchers argue that resilience is closely linked to coping responses and may not be completely separate (Davydov et al., 2010). The current study includes a measure of coping to explore covariation.

Although much of the existing research focuses on trauma or minority samples, some research has been conducted with samples of college students such as the research conducted by Hartley (2011). Hartley investigated resilience, mental health and academic persistence in college students. The researcher utilized the Connor-Davidson Resilience Scale (Connor & Davidson, 2003) to measure intrapersonal resilience and the Social Support Questionnaire (Sarason, Levine, Basham & Sarason, 1983) to measure interpersonal resilience. Hartley found that tenacity, tolerance of stress and spirituality factors of the Connor-Davidson Resilience Scale explained some variance for the students cumulative GPA.

Academic resilience, a sub-discipline of resilience, focuses on students' ability to maintain grades or GPA and motivation for academics while enduring a stressful event (Martin & Marsh, 2006). Levels of academic resilience predict factors such as positive self-esteem, class participation and enjoyment of academics (Martin & Marsh, 2008). The current study includes academic resilience as an additional measure relevant for college students.

Coping Behaviors

In order to further understand the concept of resilience, behavioral and mindset variables were examined in the current research; the first of these variables is coping behavior. Lazarus (1966) describes coping as the process of responding to stress (as cited in Carver, Scheier & Weintraub, 1989). Two dimensions of coping emerged from Lazarus's research: problem-focused and emotion-focused coping. Problem-focused coping consists of actions to alter stress or problem solving. While, emotion-focused coping focuses on management of emotional distress. Research revealed further discrimination of the two dimensions in measures was necessary (Carver et al., 1989). Carver et al. (1989) aimed to create a new measure for coping with empirical and theoretical accuracy. Utilizing Lazarus's model of coping as the theoretical

underpinning, Carver et al. created the COPE measure with 13 dimensions including active coping, planning and seeking social support, to name a few. Additionally, Carver et al. created the COPE to include dysfunctional coping methods, such as mental disengagement from goals, in contrast to the functional methods such as active coping.

Previous research has not explored resilience and coping thoroughly, as the current study aimed. However, previous research has explored some aspects of resilience and coping behaviors assessed by the COPE specifically with the focus on trauma (Elliott et al., 2015; Grasso et al., 2012; Wolfe & Ray, 2015) and health (Yi-Frazier et al., 2010; Steinhardt & Dolbier, 2008). A discussion of research examples in the areas of trauma and health in the general population and then specifically with a college student population will follow in order to understand the current research linking resilience and coping behavior. The use of adaptive coping strategies was associated with resilience in the presence of war trauma (Elliot et al., 2015).

Elliot et al. (2015) discussed resilience of Iraq and Afghanistan war veterans and the connection to depression and post-traumatic stress disorder (PTSD). Elliot et al. utilized a sample of veterans for analysis from Project SERVE, which aims to assess post-war adjustment and war experience of Iraq and Afghanistan veterans. Elliot et al. assessed baseline resilience scores, before war, through self-report. Elliot et al. measured resilience using the Connor-Davidson Resilience Scale. Adaptive coping strategies were predicted to be associated with a resilient response and decreased frequency of depression and PTSD. Soldiers with higher self-reported resilience reported fewer avoidance coping behaviors, more perceived social support and had more psychological flexibility than soldiers reporting lower resilience. Moreover, soldiers with higher resilience reported fewer PTSD and depression symptoms than soldiers with lower

resilience scores. The authors speculated the reported resilience, coping, psychological flexibility and social support protected soldiers from the effects of war (Elliot et al., 2015).

An example of resilience and coping research conducted in the area of trauma with a focus on college students comes from Grasso et al. (2012). Grasso et al. investigated the possible effects of traumatic experiences on college students. The students who were diagnosed with PTSD following traumatic events utilized more avoidant coping behaviors and less active coping behaviors (Grasso et al., 2012). Wolfe and Ray (2015) explored gender differences in resilience and post-traumatic growth. Post-traumatic growth is the opposite result of PTSD because it entails positive adaptation following a traumatic event. Emotion-focused coping behaviors were associated with resilience and post-traumatic growth for women. Social support was associated with resilience and post-traumatic growth for men and women. Ineffective coping was negatively correlated with resilience in men and women (Wolfe & Ray, 2015). Research on resilience and coping behaviors following trauma establish a relationship between resilience and coping behavior.

Another area of established research between resilience and coping behavior is in the area of health care. Yi-Frazier et al. (2010) conducted research in this field. Yi-Frazier et al. (2010) studied the resilience and coping behaviors of diabetics. Consistent with previous research, the authors found maladaptive coping patterns and fewer resilience resources for the women compared to men. Resilient resources were defined by creating a resilience score from four measures: optimism measured by the Life orientation test (Scheier & Carver, 1987), self-esteem measured by the Rosenberg Self-esteem Scale (Rosenberg, 1979), self-efficacy measured by the Confidence in Diabetes Self-care Scale (Van Der Ven et al., 2003) and self-mastery measured by Pearlin and Schooler's (1978) Self-mastery scale. Yi-Frazier et al. (2010) found all maladaptive

coping subscales negatively associated to resilience and two of the adaptive subscales, acceptance and social support, associated with resilience.

Steinhardt and Dolbier (2008) serves as an example of research conducted with resilience and coping behaviors with a focus on health of college students. Steinhardt and Dolbier investigated the effectiveness of a resilience intervention during a period of increased academic stress. The researchers define resilience as full recovery after a stressful situation. The researchers measured resilience before and after the intervention with the Connor-Davidson Resilience Scale (Connor & Davidson, 2003) and the Dispositional Resilience Scale (b, Ursano, Wright & Ingraham, 1989). The participants were randomly assigned to an experimental group, who received the intervention or a waitlist control group. The experimental group reported increased levels of resilience and effective coping behaviors following the resilience intervention. The resilience intervention reduced psychological symptoms such as stress or depressive symptoms, but not physical symptoms such as those associated with illness (Steinhardt & Dolbier, 2008). The previous research in trauma and health illustrates a relation between coping behaviors and resilience, which can apply to a general college sample. An extension of this reasoning links academic resilience and goal orientation.

Goal Orientation

According to Dweck and Leggett (1988), goals create a framework to interpret and react to experiences. With a focus on academics Dweck and Leggett found two goal orientations that people adopt, either learning goal or performance goal orientation. People with an learning goal orientation are concerned with improving their personal competence (Dweck and Leggett, 1988).

Contrastingly, people who adopt a performance goal orientation are concerned with others perception of their competence.

The two goal orientations create different cognitive frameworks. A person with performance goal orientation asks the question, “Is my ability adequate or inadequate?” and relies on the result to determine success (Dweck & Leggett, p. 260, 1988). If ability isn’t adequate, a helpless behavior pattern emerges. Helpless behavior is characterized by avoidance of challenges and low persistence in goals (Dweck, 1986). Performance goal orientation may also result in negative cognitions about the self while confronting a difficult task. In a study conducted by Leggett and Dweck, referenced in Dweck and Leggett (1988), eighth graders goal preferences were gathered and they determined performance goal orientation view effort as inversely proportional to ability. They believed that effort in schoolwork indicated lack of ability in that area.

Learning goal orientated individuals ask, “What is the best way to increase my ability?” (Dweck & Leggett, p. 260, 1988). Despite success or failure, outcomes provide information for revision of goals, which is consistent with a mastery-oriented behavior pattern. Mastery behavior is characterized by persistence in the face of challenges (Dweck, 1986). Children with a learning goal orientation show enjoyment when utilizing effort to complete a task. Dweck and Leggett (1988) associate each goal orientation with a theory of intelligence. Performance goal orientation is derived from entity intelligence theory, which describes intelligence as fixed. In contrast, learning goal orientation is derived from incremental intelligence theory where intelligence is malleable (Dweck & Leggett, 1988).

Eppler and Harju (1997) conducted a study that exemplified the investigation of goal orientation theory in the college student sample. Eppler and Harju (1997) applied the goal

orientations to college students and their academic performance, specifically with an interest in the differences of traditional (age 18-22) and nontraditional (22-50) students. All students reported more use of learning goals than performance goals. The older, nontraditional students utilized more learning goal orientation compared to younger, traditional students. The most successful students, by cumulative GPA, reported the most use of learning goal orientation. The use of only performance goals resulted in lower GPA's than those that included learning goals. However, the lowest cumulative GPAs were from students who did not identify with either goal orientation (Eppler & Harju, 1997).

In the face of difficulty, Dweck and Leggett (1988) found goal orientation results in either debilitating or facilitating factors in five categories: belief in efficacy, defensiveness, attention, affect, and intrinsic rewards. Performance goal orientation results in debilitating factors such as loss of belief, defensive withdrawal of effort, divided attention, negative affect and limited intrinsic rewards (Dweck & Leggett, 1988). While learning goals result in a facilitating factors including belief in efficacy, constant effort, undivided attention, affect in tasks, and many intrinsic rewards. There is a lack of research linking resilience with goal orientation theory, but it has been used in the academic setting before, so there may be a connection to academic resilience specifically.

Minimal research has linked resilience with goal orientation theory. There is no existing research using a self-report resilience measure with goal orientation theory. Though, there has been research measuring resilience as a behavioral variable such as Yeager and Dweck (2012). Yeager and Dweck (2012) define resilience as staying in a math course, which is specific to the situation and not a individual difference measurement of the variable. Yeager and Dweck's research is important to explore because establishes a vague link between resilience and goal

orientation theory. Of the established literature, academic performance and learning are areas of research. Yeager and Dweck (2012) investigate the relationship between resilience and mindset in the academic and social realms of students. Resilience was defined as staying in a math course. In a pilot investigation, Yeager and Dweck (2012) discover that presenting students in remedial math courses at community college with a difficult math problem can make them avoid completing difficult problems in the future. Yeager and Dweck created an intervention, which counteracts the effect of low resilience in students facing a stressful, math problem. To counteract this tendency, Yeager and Dweck present an incremental intelligence intervention to educate students on this mindset (Yeager & Dweck, 2012). A review and application of the intervention, conducted by Paneusku et al. (2012), revealed a significant amount of students remained in a math course when exposed to the incremental intelligence intervention (as cited in Yeager & Dweck, 2012). Of the minimal research, promise exists supporting the relationship between learning orientation goals and a resilient response in college students. Within the field of academics, passion can be an invaluable quality for good performance, which may be related to resilience.

Passion

Passion is defined as a strong desire towards an activity a particular person likes, finds important and invests time and energy (Vallerand, 2008). Vallerand et al. (2003) developed the dualist model of passion delineating obsessive and harmonious passion. The two types of passion differ according to how they are internalized. Obsessive passion is the controlled internalization of an activity into the self, which results in an uncontrollable urge to participate in activities. Additionally, a rigid persistence towards the activity is seen. Harmonious passion is the autonomous internalization of an activity into the self. This results in individuals freely choosing

to participate in activities. Harmonious passion is a significant, but not overpowering part of the self (Vallerand, 2008).

Research on the dualistic model of passion has involved sports, dance and music (Stoeber, Childs, Hayward & Feast, 2011; Rip, Fortin & Vallerand, 2006). This model has also been researched in academics (Stoeber et al., 2011; Schellenberg & Bailis, 2015). Stoeber et al. (2011) investigated passion for studying, academic engagement and burnout in college students. Harmonious passion negatively correlated with academic burnout and positively correlated with academic engagement. Harmonious passion is associated with two subscales of academic burnout: cynicism (e.g. “I have become more cynical about the usefulness of my studies”) and inefficacy (e.g. “I can effectively solve the problems that arise in my studies” reverse code) (Stoeber et al., 2011). Also, harmonious passion is associated with two subscales of academic engagement: vigor and dedication (Stoeber et al., 2011). Additionally, harmonious passion positively correlated with autonomous motivation. Conversely, obsessive passion negatively correlated with cynicism and inefficiency in burnout and positively correlated with academic engagement. Additionally, obsessive passion is associated with the vigor and absorption (e.g. “When I am studying I forget everything else around me”) subscales of academic engagement (Stoeber et al., 2011, p.7). Stoeber et al. (2011) established a relationship between the dualistic model of passion and academics.

Schellenberg and Bailis (2015) investigated passion for first-year college students three times within a year to determine any changes in the quantity and quality of academic passion. An evaluation of the self-reported passion of students categorized them as obsessive or harmonious passionate. The researchers conducted a developmental trajectory analysis on the data that this analysis resulted in three-trajectory model. These trajectories were labeled as low and stable

passion, moderate and unstable passion and high and decreasing passion. The researchers found 72.32% of students self-reported increasing low or moderate harmonious passion in their first year. The researchers found 97.5% of students' self-reported stable obsessive passion in their first year. Only 2.5% of participants experienced large changes of obsessive passion. These participants also reported higher levels of perceived stress suggesting a connection between perceived stress of college and obsessive passion. If any change in passion for academics occurred, it was slow (Schellenberg & Bailis, 2015). The current study expanded research on passion for academics by evaluating its association with resilience and college student's motivation for academics.

Current Study

The current study expanded existing research by investigating multiple measures of resilience in college students and examining academic factors. Specifically, this study explored the associations between resilience measured by the Brief Resilience Scale (Smith et al., 2008), the Resilience Scale for Adults (Friborg et al., 2003) and the Academic Resilience Scale (Martin & Marsh, 2006) and coping behaviors measured by the COPE inventory (Carver et al., 1989), goal orientation measured by the Goals inventory (Roedel et al., 1994) and passion for academics measured by the Passion Scale (Vallerand et al., 2003) in a sample of college students. It is expected that adaptive orientations in terms of coping, academic goals and passion (i.e. adaptive coping, harmonious passion, learning goals) will be positively associated with resilience. The maladaptive orientations (i.e. maladaptive coping, obsessive passion, performance goals) will be negatively associated with resilience. Applications relevant for college student adjustment will be discussed.

Method

Participants

The participants were 252 undergraduate students from James Madison University. Students received course credit for participating in the study. The students were selected through the psychology participant pool that includes students in either PSYC 101 or 160. Of the total participants, 147 were female and 105 were male. The average age for the participants was 18.96 years with a range from 18 to 30 years old.

Materials

The study consisted of a series of questionnaires given to the students to evaluate their resilience, coping behaviors, goal orientation, passion and demographics.

Resilience. Windle et al. (2011) methodologically evaluated all existing resilience scales in order to determine the reliability and validity of the measures coinciding with the purpose of each measure. From this research, the Resilience Scale for Adults (RSA) and the Brief Resilience Scale best measured the aspects of resilience this study targets while possessing solid reliability, internal consistency and feasibility of use. Windle et al. (2011) rated the RSA and Brief Resilience scale with the highest overall rating after assessment of the content validity, internal consistency, criterion validity, construct validity, test-retest reliability, responsiveness, and interpretability.

Friborg et al. (2003) created the Resilience Scale for Adults (RSA) as a 37-item measure total. The items were broken into a 5-factor structure including personal competence, social competence, family coherence, social support and personal structure. The measure used a 7-item

Likert-type scale from strongly disagree to strongly agree. The measure was analyzed which revealed high internal consistency, at least .70 for all but one subscale (Windle et al., 2011). Windle et al. (2011) reported a high construct validity for the scale. The test-retest reliability of the RSA was greater than .70 for all subscales except for .69 for the social support subscale (Windle et al., 2011). The scale was found to be correlated with the Big 5 personality characteristics (Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005) and positively correlated with the Sense of Coherence scale for psychological and personal adjustment (Friborg et al., 2003).

The Brief Resilience Scale was a 6-item measure on a 7-item Likert-type scale from strongly disagree to strongly agree. Smith et al. (2008) operationalized resilience as to test a person's ability to bounce back from a stressful event. The internal consistency ranged from .70 to .95 for different studies (Windle et al., 2011). The test-retest reliability in two different samples was .62 and .69 (Windle et al., 2011). The Brief Resilience scale was rated with high construct validity (Windle et al., 2011).

Martin and Marsh (2006) developed a one-dimensional scale to test academic resilience. This was a 6-item scale with a 7 point Likert-type scale where 1 equals "strongly disagree" and 7 equals "strongly agree". The scale aimed to evaluate five dimensions of academic resilience including self-efficacy, control, planning, low anxiety and persistence. The measure of academic resilience was correlated with some psychological outcomes namely school enjoyment, participation in class and self-esteem. The internal consistency evaluation resulted in a Cronbach's alpha of .89 (Martin & Marsh, 2006).

Coping Behaviors The dispositional COPE inventory (Carver et al., 1989) consisted of 14 dimensions each with 4 items across adaptive and maladaptive coping methods. The 14

dimensions included in the scale were active coping, planning, restraint coping, suppression of competing activities, social support for instrumental reasons, social support of emotional reasons, positive reinterpretation and growth, acceptance, turning to religion, focus on and venting of emotions, denial, behavioral disengagement, mental disengagement, and alcohol-drug disengagement. Responses were recorded on a 4-point Likert-type scale from “I usually don’t do this at all” to “I usually do this a lot” by placing the answer next to each item. The Cronbach’s alpha for the internal consistency of the measures varies between .45 and .92. When creating the COPE measure and its subscales, Carver et al. (1989) found correlations between subscales were not strong which implied the empirical separation between coping types and the necessity to use a multitude of coping strategies when enduring stress. Even though the correlations are small, two categories appear of coping strategies: adaptive and maladaptive. Adaptive coping consists of active coping, planning, restraint coping, positive reinterpretation, social support, and positive reinterpretation. Maladaptive coping includes denial, behavioral disengagement, venting emotions and alcohol use. Gender differences in the scale were determined for females who utilized more strategies in seek social support subscale for both emotional and instrumental reasons (Carver et al., 1989).

Goal Orientation Roedel, Schraw and Plake ‘s (1994) Goals Inventory utilized a 5-item Likert type scale for each of the 25 items. The Goal Inventory aimed to evaluate the behaviors associated with goal orientations as defined by Dweck and Leggett (1988). The goal inventory consisted of two subscales for performance and learning goals respectively with additional distractor items. The internal consistency was evaluated using Cronbach’s alpha for each of the goal orientation types: performance, .75 and learning, .80. The test-retest reliability for each orientation style was $r = .76$ and $r = .73$, respectively. The Goal Inventory highly correlated with

the Reactions to Tests measure for test anxiety, positively for performance goals and negatively for learning goals. Additionally, the learning goals subscale of the Goal Inventory positively correlated with the Hope scale (Roedel, Schraw & Plake, 1994)

Passion. Vallerand and colleagues' (2003) created the Passion Scale, which consisted of 14 questions and two distinct factors. The two factors measured the two types of Passion, obsessive passion ("I cannot live without it") and harmonious passion ("This activity is in harmony with the other activities in my life") with 7 items for each type measured on a 7 point Likert scale. A confirmatory factor analysis of the dual factor design revealed a good fit for the data and all factor loadings were significant (Vallerand et al., 2003). The reliability of the obsessive passion subscale was .89 and for the harmonious passion subscale was .79. According to Vallerand et al. (2003), a correlation existed between the subscales, $r = .46$. A modified version of the original Vallerand et al. (2003) scale has been used in this study to focus on academic passion. Instead of the participants selecting a passion to rate on the scale, the participants are told to rate their passion for academics.

Results

Table 1 contains the mean, standard deviation and Cronbach's alpha for all the major scales and subscales. The three resilience measures, Resilience Scale for Adults ($M = 5.7$, $SD = .68$), Brief Resilience Scale ($M = 4.3$, $SD = 1.1$) and the Academic Resilience Scale ($M = 4.5$, $SD = 1.3$) were significantly correlated to each other (See Table 1). Resilience Scale for Adults was significantly positively correlated with Brief Resilience Scale, $r(250) = .31$, $p < .01$ and Academic Resilience Scale $r(250) = .35$, $p < .01$, see Table 2. Brief resilience scale was significantly positively correlated to the Academic resilience scale, $r(250) = .44$, $p < .01$. Since the relations of the three measures are consistent across all variables in the study, the most

common resilience scale, Resilience Scale for Adults, as determined by Windle et al. (2011), will be the only one reported within the text as resilience. The results of the three scales will be reported in the tables.

Table 2 reports the correlations among the variables and the subscales. If the data follow the predictions, the adaptive orientation (i.e. adaptive coping, harmonious passion, learning goals) should significantly correlate with resilience. As predicted, resilience and adaptive coping were significantly positively correlated, $r(250) = .50, p < .01$, such that higher scores on the resilience measures occur with higher scores of adaptive coping. Resilience and harmonious passion were significantly positively correlated, $r(250) = .34, p < .01$, such that more reported resilience occurs with more reported harmonious passion for academics. Resilience and learning goals were significantly positively correlated, $r(250) = .44, p < .01$ such that higher scores on resilience measures were reported with higher scores on use of learning goals.

Following predictions resilience was significantly negatively correlated with maladaptive coping, $r(250) = -.23, p < .01$, such that a higher score on resilience measures occur with lower scores for maladaptive coping behaviors. This result follows the expected direction for a correlation following previous research. Inconsistent with predictions for the maladaptive orientation of the variables (i.e. maladaptive coping, obsessive passion, performance goals), there was a non-significant correlation of $-.08 (p = n.s.)$ between resilience and obsessive passion. Additionally, there was a non-significant correlation of $.09 (p = n.s.)$ between resilience and performance goals. For details concerning the other two resilience scales see Table 2.

The adaptive orientation variables were significantly correlated with each other. Adaptive coping and harmonious passion were significantly positively correlated, $r(250) = .35, p < .01$, such that higher scores for adaptive coping were associated with high scores for harmonious

passion for academics. Additionally, adaptive coping and learning goals were significantly positively correlated, $r(250) = .45, p < .01$, such that reported use of more coping behaviors occurred with more use of learning goals. Harmonious passion and learning goals were significantly positively correlated, $r(250) = .49, p < .01$, such that higher harmonious passion scores were associated with more use of learning goals for students.

Although no predictions were made, the maladaptive orientation variables were significant correlations. Maladaptive coping and obsessive passion were significantly positively correlated, $r(250) = .39, p < .01$, such that more reported use of maladaptive coping behavior were associated with more reported obsessive passion for academics. Also, maladaptive coping and performance goals were significantly positively correlated, $r(250) = .19, p < .01$, such that higher scores for maladaptive coping behavior were associated with higher scores for performance goals. Performance goals and obsessive passion were significantly positively correlated, $r(250) = .25, p > .01$, such that students reported more use of performance goals while also reporting more use of obsessive passion. Interestingly, performance goals and harmonious passion were significantly positively correlated, $r(250) = .22, p > .01$, such that higher scores for performance goals were associated with higher scores for harmonious passion.

Discussion

The aim of this study was to examine multiple measures of resilience for college students and the possible associations with other behavioral variables. The results supported the predictions that associations existed between resilience and coping behavior, goal orientation, and academic passion. The three resilience measures were positively associated with each other, although each measure used a different operational definition of resilience. This illustrates consistency across the resilience measures when evaluating college students even with the

inclusion of an academic resilience scale. There may be more consistency across the resilience measures than was assumed by Windle et al. (2011).

Consistent with predictions for the adaptive orientation, students with a higher level of resilience used more adaptive coping strategies, endorsed more learning goals and reported more harmonious passion for academics. Resilience was negatively correlated with maladaptive coping such that students with a high level of resilience reported low levels of maladaptive coping. Previous research on coping behavior and resilience, specifically the study conducted by Yi-Frazier et al. (2010) reported finding resilient individuals using maladaptive coping strategies rarely. Therefore, some previous research has found a relationship between resilience and maladaptive behaviors.

To the best of the researcher's knowledge, this research is the first of its kind. The results are able to establish significant relationships between all of the predicted variables. Even within the adaptive and maladaptive orientation variables there were significant associations. The relationships between goal orientation and maladaptive coping are intriguing. Since both types of goals, learning and performance are positively associated with maladaptive coping. This is an example of the fluidity of the constructs. A student can use learning and performance goals at the same time and even in the same context such as academics. This presents an interesting problem when trying to apply research to students because students will likely to exhibit a mix of the adaptive and maladaptive behaviors.

The constructs of resilience, coping behavior, goal orientation and passion for academics all have important implications for college student health. There is evidence that stress in college is overwhelming to the students and may be the reason for increasing mental health rates among students (McMurtrie, 2013). If resilience can be understood more fully by researchers, this

information could be applied to students. The impact of mental health on resilience was not examined in this study, but would be a great next step to understand resilience in students.

As with all research, there were limitations for this study. The research was conducted using an online survey. Although convenient in certain respects, there was some troubleshooting necessary. Additionally, it is difficult to know the level of effort each participant made while completing the survey. Students may have had numerous distractions present while completing the survey, which diverted their attention and changed the results. As is inherent in correlational research, a causal relationship between variables could not be determined. Causation would be extremely helpful to determine if behaviors, such as coping, are the result of resilience or if they facilitate resilience. This knowledge will aid in the creation of interventions for college students to promote student wellness and success. Future research should try and answer this question.

This study confirmed the presence of associations between resilience, coping behavior, goal orientation, and academic passion. Future research could explore more the temporal nature of the variables. Unfortunately, these variables are difficult to manipulate in order to explore causation except for goal orientation. In the college setting, it would be possible to create an intervention for goal orientation because of the use of goals in academics. Most people use both types of goal orientations, so teaching goal creation to students would not be difficult. Researchers should continue to investigate resilience and further understand the nature of the variable. It would be especially helpful to study resilience in a longitudinal study. The researcher could investigate behaviors prior to college and compare them to college behaviors to see if and how resilience and the associated behaviors change over time.

Table 1

Mean, Standard Deviation and Cronbach's Coefficient for the Major Variables

Major Variable	M	SD	α
Resilience Scale for Adults (RSA)	5.7	.68	.94
Brief Resilience Scale	4.3	1.1	.82
Academic Resilience Scale	4.5	1.3	.92
COPE	—	.34	.91
Adaptive Coping	2.8	.44	.91
Maladaptive Coping	2.1	.45	.85
Goals Inventory	—	.41	.79
Performance Goals	3.5	.77	.80
Learning Goals	3.8	.55	.85
Academic Passion Scale	—	.93	.89
Harmonious Passion	4.7	1.0	.88
Obsessive Passion	3.4	1.3	.82

Table 2

Major Correlations

Measure	1	2	3	4	5	6	7	8	9
1. Resilience Scale for Adults (RSA)	—								
2. Brief Resilience Scale (BRS)	.31**	—							
3. Academic Resilience Scale (ARS)	.35**	.44**	—						
4. Adaptive Coping	.50**	.18**	.28**	—					
5. Maladaptive Coping	-.23**	-.30**	-.13*	.14*	—				
6. Harmonious Passion	.34**	.21**	.30**	.35**	-.03	—			
7. Obsessive Passion	-.08	-.04	-.01	.05	.39**	.45**	—		
8. Learning Goals	.44**	.24**	.35**	.45**	.49**	.49**	.13*	—	
9. Performance Goals	.09	-.04	-.07	.09	.19**	.22**	.25**	.26**	—

*=Correlation is significant at the 0.05 level; **=Correlation is significant at the 0.01 level.

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