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Academic Stressors, Perceived Stress, and Coping Strategies Among Undergraduate Students

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

by Danielle J. Levin

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Accepted by the faculty of the Department of Health Sciences, James Madison University, in partial fulfillment of the requirements for the Honors College.

FACULTY COMMITTEE:

HONORS COLLEGE APPROVAL:

Project Advisor: Theresa Enyeart Smith, Ph.D.,
Professor, College of Health and Behavioral Studies

Bradley R. Newcomer, Ph.D.,
Dean, Honors College

Reader: Robert Koslow, P.E.D.,
Professor, College of Health and Behavioral Studies

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Abstract

Background: Stress is common among college students and is a predominant factor interfering with academic performance. The presence and severity of the academic stressors, as well as the coping strategies used, can influence the magnitude of the stress response experienced.

Objectives: This study evaluated how college students perceive their level of stress, the coping strategies used, and the use of resources to offset stress offered by the university.

Methods: Sample size of 244 was used. The study used the Perceived Stress Scale 4 (PSS-4), the Brief COPE Inventory, and demographic questions to evaluate perceived stressors, stress coping strategies, and the use of university resources to cope with experienced stress. The data were analyzed using IBM-SPSS. Descriptive analyses were run to assess the frequency of perceived stress and use of stress coping strategies.

Results: This study showed that overall, undergraduate students at JMU experienced moderate levels of stress. Pressure to succeed, balancing coursework, and lack of motivation were the most prevalent academic stressors experienced by students.

Conclusion: This study provides evidence that perceptions of stress greatly impact student behavior and use of coping strategies. Variation in coping strategies among students highlights the importance of increased awareness to stress management resources in order to maximize student well-being and potential.

Keywords: Stress, perceived stress, academic stressors, maladaptive coping, adaptive coping

Chapter One: Introduction

Introduction

According to the American College Health Association, stress is the most important factor interfering with student academic performance (American College Health Association, 2019). Stress levels among the college student population have been excessively studied and well documented, revealing consistencies among the causes and implications of the levels of stress experienced. Across all disciplines, receiving good grades, a demanding workload, being assigned excessive homework, having time and deadline pressures, financial concerns, and ultimately earning one's degree all contribute to feelings of stress (Oswalt & Riddock, 2007). Excessively high stress levels can have negative academic and emotional repercussions, which may be an underlying cause of the adoption of multiple unhealthy behaviors (Gustems-Carnicer, Calderón, Calderón-Garrido, 2019). Although there are consistent findings within studies examining the use of stress coping strategies among undergraduate students, there are gaps in the previous research that neglect to focus on the relationship stress has on the coping strategies used by different undergraduate populations. Inconsistent findings on the relationships between experienced stress and drinking behaviors, physical activity, sleep behavior, prescription stimulant misuse, and academic integrity highlight the need for further research in this area.

Significance

This study is significant to the undergraduate college population since stress is a predominant factor interfering with academic performance. Although many universities and colleges offer services and resources to address stress, determining prevalent stressors, perceived stress, and how students cope can help universities develop services and resources that more closely match the needs of their students. Students participating in this study may benefit from

reflecting on their stress coping strategies while being provided with a list of services and resources offered by James Madison University (JMU). Determining prevalent stressors and how students cope can aid JMU advisors and leadership in developing wellness initiatives and programs aimed at alleviating stress. The implementation of wellness initiatives that teach students adaptive stress coping strategies might be sufficient for reducing stress while maximizing their potential for academic, personal, and professional success.

Statement of the problem

Existing studies are limited to identifying stressors among all undergraduate students, or those programs of study, and have not looked more broadly at students in respect to their post-graduation plans. Considering this, the aim of the present study was to compare prevalent stressors, perceived stress, and stress coping strategies among students who are pursuing different post-graduation plans.

For the purpose of this study, participants were classified into academic discipline groups based on post graduate plans. The discipline groups were as follows: undergraduate students with intentions of starting a career within their bachelor's degree field of interest, undergraduate students with intentions of pursuing an advanced a degree from a professional health program or graduate school, and undergraduates with intentions of pursuing a degree from a graduate school not inclusive of professional health.

Research Questions

1. What are the top academic stressors reported by students?
2. What are the perceived graduate school stressor frequencies among the two student groups with intentions of attending graduate school?
3. What JMU resources are being utilized by students to address their stressors?

4. What are the perceived stress levels among students?
5. Does a trend exist between perceived stress levels and GPA?
6. Does stress impact student behavior?
7. How do students compare in their use of coping strategies from the Brief COPE Inventory?
8. Do any correlations exist between level of perceived stress and Brief COPE Inventory responses?

Limitations of the Study

300 responses were recorded, and of that, 244 were completed and used in data analysis. A higher completion rate of the current study may have been attained by limiting the amount of Likert scale questions. Many participants ended the survey upon viewing the first set of Likert style questions used with the PSS-4, and a majority of participants subsequently ended the survey upon viewing the next series of Likert style items used for the Brief COPE Inventory

A major limitation to this study is that the researcher only focused on academic-related stressors. Individual factors not examined in this study could predispose some students to experiencing higher levels of stress unrelated to academics. With this, it is important to understand that stress is multifactorial which may have influenced students' levels of academic-related stress. In addition to that, data collection from the survey was not longitudinal. As a result, responses could vary depending on past individual experiences regarding coping with stress.

Other limitations to this study include the proportion of students within each discipline group who completed the survey. As mentioned in the results, approximately half (51.1%) of the sample was students who plan to start a career with their bachelor's degree. The varying

distribution of participants among each group may not provide accurate insight into the prevalent stressors, perceived stress, and stress coping strategies used by undergraduate students. Equality and a greater sample size for each group would allow for a more effective and representative study to be conducted. Response bias may be a limitation in this study. Although anonymity was guaranteed, students may have falsely or underreported on some questions out of fear of repercussions.

Definitions of Terms

Adaptive coping strategy- Strategies generally considered to be healthy and effective ways of managing stressful situations (GoodTherapy, 2018).

Coping strategy- An action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation or in modifying one's reaction to such a situation. Coping strategies typically involve a conscious and direct approach to problems (American Psychological Association, 2020, Coping strategy section).

Maladaptive coping strategies- Ineffective coping strategies that can often be counterproductive or have unintended negative consequences (GoodTherapy, 2018). For the purpose of this project, maladaptive coping strategies will include drinking behaviors, the use of nonprescribed stimulants, physical activity avoidance, and academic dishonesty.

Stress- The physiological or psychological response to internal or external stressors; involves changes affecting nearly every system of the body, influencing how people feel and behave (American Psychological Association, 2020, Stress section).

Stressor- A general term for any factor that increases a person's mental or physical stress (Segen's, 2012, Medical dictionary section).

Chapter Two: Review of the Literature

Stress

Stress is the “physiological or psychological response to internal or external stressors which involves changes affecting nearly every system of the body, influencing how people feel and behave” (American Psychological Association, 2020). A certain amount of pressure is known to aid in one’s ability to perform better in given situations, however, when the pressure accumulates and someone is unable to cope with these exceeding demands, feelings of stress are produced (Gustems-Carnicer, Calderón, Calderón-Garrido, 2019). Academic stress is produced when academic related demands exceed the adaptive resources available to an individual (Scott, Modna, Khashchuk, Duke, 2019). The presence and severity of the academic stressors, as well as the inability to cope with exceeding academic demands, can influence the magnitude of the stress response experienced. As a result, students are then at greater risk for poor academic performance and greater academic stress, which perpetuates a cycle of stress, maladaptive coping, and compromised health (Scott et al., 2019). It is important to recognize and address the adverse effects stress has not only on academic achievement, but also the personal and social well-being in order to avoid long-term problems in both one’s professional and personal life (Gustems-Carnicer et. al., 2019).

Adaptive and Maladaptive Coping Strategies

Adaptive coping strategies are generally considered to be healthy and effective ways of managing stressful situations (GoodTherapy, 2018). Adaptive coping strategies that serve as a healthy form of stress relief include support, relaxation, problem solving, and physical activity (GoodTherapy, 2018). A support network that provides social and emotional support is beneficial in alleviating one’s perceptions of stress. According to Wang, Cai, & Peng (2014), the

use of social support has been found to increase an individual's perceived ability to cope when experiencing stress. Likewise, emotional support serves a protective factor, as it neutralizes the negative impact of stress (Cleveland Clinic, 2020). Problem-focused coping aims to remove or reduce the cause of the stressor, which in turn directly reduces the stress experienced (McLeod, 2015). Whereas adaptive coping is effective and promotes long-term well-being, maladaptive coping is ineffective and has potentially harmful long-term implications.

Maladaptive coping strategies are ineffective and often be counterproductive or have unintended negative consequences (GoodTherapy, 2018). Maladaptive coping strategies prevent individuals from engaging emotionally, physically, or mentally, in stressful situations (Sutton, 2020). As a result, maladaptive coping does not avoid the cause of the stressor and only provides a temporary relief of stress. Although they appear successful in the short term, the continued use of maladaptive coping strategies can negatively impact mental wellbeing (Sutton, 2020).

Graduate School

Undergraduate academic achievement is used to provide graduate schools with a sense of how the student will succeed within the given program. Academic competition is at the forefront of the graduate school application process, as students must compete against others for acceptance into the graduate school program. Students pursuing professional health are highly aware of the competitive admissions process into their desired program, as a high GPA and an accumulation of hours of field related experience are required for admission (Dumke et al, 2018). Compared to their peers, health professions students report experiencing higher levels of stress (Stark, Hoekstra, Lindstrom Hazel, Barton, 2009). Pre-professional health students may be at risk for experiencing adverse mental health conditions resulting from the elevated levels of stress as well as the academic rigor their programs impose upon them due to the stressors of the

expectations (Hoying, Melnyk, Huston, Tan, 2020). Undergraduate students enrolled in a challenging program of study may play a critical role in the adoption and adaptation of existing advising practices used by advisors at their institutions to promote better outcomes and academic success of all students (Dumke et al, 2018). As a result, these students may then be able to utilize healthy stress coping strategies throughout both their graduate school and professional careers.

Binge Drinking Behaviors

The prevalence of binge drinking and the drinking culture on college campuses nationwide has long been a cause for concern. Binge drinking refers to consuming five or more drinks for men or four or more drinks for women within two hours or at one sitting that brings the blood alcohol concentration levels to 0.08 (National Institute, 2020). Despite the adverse health effects that often coincide with binge drinking, college students continue to engage in excessive alcohol consumption at an alarming rate. Alcohol is consumed, in some degree, by roughly 80% of college students, and of that, approximately 50% of those students binge drink (Galbicsek, 2020). Previous research has found that heightened perceptions of academic stress results in undergraduate students being more likely to engage in binge drinking and/or use alcohol as a coping mechanism (Norman & Ford, 2018). Students resorting to drinking or binge drinking to cope with stress is a cause for concern at both the individual and institutional level. Drinking alcohol provides a momentary relief from feelings of stress, and in an effort to forget about their problems, students resort to alcohol as a coping mechanism (Chen & Feeley, 2016). Although students believe they are alleviating their stress by drinking, they are ultimately subjecting themselves to a variety of consequences that can negatively impact their health and wellbeing. Academic problems have been related to binge drinking, with one in four college students missing class, performing poorly on a test or project, falling behind in class, or receiving

a lower overall grade (National Institute, 2020). These consequences, in turn, can then result in heightened stress levels that the students were initially trying to avoid.

Physical Activity

Physical activity is a broad term that encompasses exercise, sports, and physical activities done as part of daily living, occupation, leisure, and active transportation (Stults-Kolehmainen & Sinha, 2015). The U.S. Department of Health & Human Services recommends fitting in at least 150 minutes to 300 minutes of moderate-intensity, or 75 minutes to 150 minutes a week of vigorous-intensity aerobic physical activity (President's Council, 2019). This recommendation, however, is only being met by 45.6% of college students (American College Health Association, 2019). There has been evidence that physical activity is positively impacted by stress, as some may use exercise as a stress coping mechanism (Stults-Kolehmainen & Sinha, 2015). The positive relationship between stress and physical activity has shown that exercise plays an important role in improving mental health and the ability to cope with stress (Stults-Kolehmainen & Sinha, 2015). Although engagement in physical activity is linked to greater health outcomes, an inverse association between stress and physical activity exists (Stults-Kolehmainen & Sinha, 2015). Given this finding, it can be understood that higher levels of stress are associated with lower engagement in physical activity and/ or exercise and vice versa. According to Oswalt & Riddock (2017), students who describe themselves as being stressed report not exercising regularly and perceiving themselves as less healthy. The negative influence that stress has on physical activity may provide insight as to why less than half of the college student population is meeting the physical activity recommendation.

Stress and Sleep

Sleep plays a crucial role on everyday functioning and performance. Although young adults require about nine hours of sleep each night, college students average an estimated seven hours of sleep each night (Forquer, Camden, Gabriau, Johnson, 2008; Kloss, Nash, Walsh, Culnan, Horsey, Sexton-Radek, 2014). Given their sleeping habits, college students are one of the most sleep deprived age groups in the United States (Forquer, Camden, Gabriau, Johnson, 2008). In 2019, the American College Health Association reported stress and sleep difficulties as the two most important factors interfering with student academic performance (American College Health Association, 2019). At the collegiate level, a strong academic performance is desired by many students. This predisposition, however, can result in feelings of stress, which is a major contributor to poor sleep quality among college students (Lund, Reider, Whiting, Prichard, 2010). Sleep loss and stress are reciprocally related. These feelings often result in people experiencing trouble sleeping which then creates an intertwined cycle, as sleep deprivation increases the levels of anxiety and stress one may feel (Bologna, 2019). Previous research has found links between decreased academic success, such as academic motivation and GPA, and sleep disturbances (Oswalt & Wyatt, 2015). Poor sleeping patterns can be induced by a variety of academic stressors, including, but not limited to, class schedules, exams, academic obligations, deadlines, and financial burdens.

In cases where students may feel unprepared and stressed for an upcoming exam, project, or other academic related assignment, they may resort to pulling an all-nighter to make up for lost time. An all-nighter refers to “a night during which someone works on something instead of sleeping; specifically: an all-night study session” (Merriam-Webster, 2020, All-nighter section). This decision to cram in mass amounts of information in a short period of time, however, can negatively impact academic performance, as all-nighters activate short term memory, which can

lead to the once absorbed information disappearing in a few minutes or hours before the exam (Earnest, 2016). In addition to that, concentrating, problem solving, and abstract thinking abilities are impaired by sleep deprivation (Richter, 2015). These functions are essential in performing well, and in their absence, students may experience more difficulty understanding questions, focusing, and paying attention to the task at hand. This counterproductive decision to skip a full night of sleep to study or complete other academic responsibilities can then increase the levels of stress a student may experience.

Misuse of Prescription Stimulants

Undergraduate student engagement in the misuse of prescription stimulants is a growing cause for concern at both the individual and institutional level. Undergraduates are an at-risk population as they primarily engage in prescription stimulant misuse during especially high periods of academic stress to meet academic demands (Norman & Ford, 2019). Although made to counteract the effects of Attention Deficit Hyperactivity Disorder (ADHD), prescription drugs such as Concerta, Adderall, Ritalin, Vyvanse, and Dexedrine are commonly abused by college students who want to work, focus, or study for longer periods of time (Juergens, 2020). When looking at four-year trends focusing on undergraduate prescription stimulant misuse (PSM), Garnier-Dykstra and colleagues noted that students early in their undergraduate career were more likely to be motivated out of curiosity in the beginning of college, whereas studying motives became more common in the later years (Garnier-Dykstra, Caldeira, Vincent, O'Grady, Arria, 2012). Consistent with previous literature, this transition in motives aligns with the notion that PSM is heavily influenced by the desire to succeed academically and facilitate better academic performance. Although motives change as students progress through their college years, PSM

use is still prevalent across all class standings at the collegiate level (Garnier-Dykstra et al., 2012).

Previous research has shown that undergraduate students with lower GPAs have an increased likelihood of engaging in PSM (Norman & Ford, 2019). Approximately 10% to 35% of undergraduate students have misused prescription stimulants to improve academic performance (Norman & Ford, 2019). Students with intentions of attending graduate school may be more likely to abuse prescription stimulants compared to their peers who plan on entering the workforce postgraduation (Norman & Ford, 2019). Demanding graduate school requirements may influence student participation in the engagement of PSM. The pressure to succeed academically can drastically increase during exam periods including midterm and final weeks, which can result in elevated levels of stress, therefore increasing the likelihood that a student will engage in PSM (Norman & Ford, 2019).

Academic Integrity

Academic integrity is “the use, generation, and communication of information in an ethical, honest, and responsible manner” (Brown, Bourke-Taylor, Isbel, Gustafsson, McKinstry, Logan, 2019, p. 4). Academic integrity is upheld as a guiding principle in higher education. Academic dishonesty, on the other hand, is a prevalent occurrence that undermines the core of these institutions. Rates on the prevalence of academic dishonesty across higher education have been consistently estimated at over 40% (Schmelkin, Gilbert, Spencer, Pincus, Silva, 2008). Although the sense of competition for high grades in the college environment can push students to perform at their highest ability, it can cause others to engage in cheating behaviors (Brown et al, 2019). Honor Systems, Honor Codes and Honor Councils have been implemented at universities to effectively combat and investigate Honor Code violations by students. At James

Madison University, Honor Code violation penalties include, but are not limited to, a reduced or failing grade within the course, a failing grade with a transcript notation, suspension, or expulsion (Honor Council, 2020).

Conclusion

Maladaptive coping strategies are correlated with higher levels of perceived stress which can be detrimental if not addressed and managed properly. Adaptive coping strategies are correlated with lower instances of perceived stress as they effectively manage the situation at hand. It is critical that institutions of higher education recognize how perceptions of stress impact engagement in coping strategies among their students. Adaptive coping strategies can lay the foundation for stress prevention and management skills which promote the general health and wellbeing of those who are utilizing the resources available to them (Pelletier, Lytle, Laska, 2016).

Chapter Three: Methodology

A cross-sectional study was conducted to examine prevalent stressors, perceived stress, and stress coping strategies among students who are pursuing different post-graduation plans at James Madison University. All procedures used in this study were approved by the university's Institutional Review Board (#21-2137).

Sampling and Protection of Subjects

Upon receiving approval from JMU's Institutional Review Board (#21-2137), recruitment of participants was conducted using e-mail and social media platforms. A bulk email was sent to 18,667 undergraduate students who had completed a minimum of 12 credit hours. The email and social media script contained a brief explanation on the purpose of the study, a brief description on the questions that will be asked, and the time requirement. A direct link to

the Qualtrics survey was inserted at the bottom of the message. After following the link, students were provided with more in-depth information on the investigator and the purpose of the study (Honor's thesis), research procedures, time requirement, risks, benefits, confidentiality, voluntary participation and withdrawal, and with contact information for the investigator, faculty advisor, and the Institutional Review Board Chair. Participation in the study was voluntary and anonymous and informed consent was obtained from students prior to filling out the survey. All data was saved electronically to the researcher's password-protected laptop.

Instrumentation

The survey, consisting of a total of 25 questions, was developed and administered to the undergraduate student body. The first six questions were constructed to collect demographic information. The next question was formulated to gather data concerning perceived academic stressors and perceived graduate school stressors (if applicable to the participant). The remaining questions were presented in multiple choice and Likert scale formatting to gather data concerning stress coping strategies (see Appendix A). The finalized instrument was administered electronically through the Qualtrics Online Survey system. Following data collection, all data were exported into the statistical software platform IBM-SPSS for data analysis.

Perceived Stress

To assess levels of perceived stress, the Perceived Stress Scale 4 (PSS-4) was used. The PSS-4 consists of the four items that were correlated most highly in the Perceived Stress Scale 14 (PSS-14) and is appropriate for situations in which a very brief measure of stress perceptions and a very short scale is required. The PSS-4 uses a five-point Likert scale to measure the degree of which situations in the past month were appraised as stressful (Cohen, Kamarck, Mermelstein, 1983). Questions 1 and 4 use a five-point Likert-scale in which 0=never, 1=almost never,

2=sometimes, 3=fairly often, and 4=very often. Questions 2 and 3 will be reverse coded so that 4=never, 3=almost never, 2=sometimes, 1=fairly often, and 0=very often. The PSS-4 has a possible range of scores from 0-16. All scores were added together with a higher score indicating a higher level of perceived stress.

Stress Coping Strategies

The Brief COPE Inventory (Carver, 1997) was used to measure student coping strategies in response to various stressors. The Brief COPE Inventory is a self-report questionnaire that includes 28 items which measure 14 conceptually different coping strategies in response to various stressors. According to Carver (1997), researchers can “selectively use the scales that are of the greatest interest in their samples” (p.98). For this reason, coping strategies were selectively chosen from the scale to align with the specific stress coping strategies students engage in. The maladaptive subscales of substance use (e.g., using alcohol or other drugs to make myself feel better), behavioral disengagement (e.g., giving up trying to deal with it), and self-blame (e.g., criticizing myself), were utilized to represent maladaptive coping strategies. Planning (e.g., thinking about steps to take), and emotional support (e.g., getting emotional support from others), were utilized to represent adaptive coping strategies. The use of self-distraction (e.g., doing something to think about it less), as a maladaptive or adaptive coping strategy is situational. The phrasing of the response options and orienting instructions were assumed in a retrospective, situational format. The frequency in which a person used the different coping strategies was rated on a scale with 1 being: “I haven’t been doing this at all”, 2: “I’ve been doing this a little bit”, 3: “I’ve been doing this a medium amount” and 4: “I’ve been doing this a lot”. The items were summated for each coping strategy subscale with a possible range of scores from 2-8. Higher scores indicated more frequent use of that particular coping strategy.

Procedures

Data Collection

The instrument used within the current study was segmented with the first part of the asking demographic questions collecting information for year in school, college(s) the student will be graduating from, current minor declaration, most recent cumulative GPA, and post undergraduate plans. In the second part of the instrument, participants selected the five most prevalent academic stressors they have experienced so far in their undergraduate career. The next part of the instrument only appeared to students who selected that they will be pursuing an advanced degree from the post undergraduate plans question within the demographics section. This set of questions asked students about the frequency of experienced stress when thinking about graduate school topics including undergraduate GPA being high enough for acceptance, the application process, admissions testing, competition for acceptance, financing graduate school tuition, and their ability to succeed in the program.

Following the demographics section, the participants were directed to the Perceived Stress Scale (PSS-4) section. Participants who did not have access to the graduate school section of the survey were immediately directed to the PSS-4 section which asked students about their perceived stress. In the next section, the Brief COPE Inventory was used to measure coping strategies that participants use in response to various stressors. After this section, agreement questions on risking academic integrity were asked. This next section also included one question regarding the use of nonprescribed stimulants to help with academics. Following that, agreement questions related to coping strategies used by the participants were asked. Behaviors analyzed were binge drinking behaviors including drinking to alleviate feelings of stress, drinking avoidance, drinking while experiencing stress, and rewarding oneself by drinking, engagement in

physical activity each week and during a time when they have a demanding schedule, and regular sleep patterns and sleep behavior while experiencing stress related to academic responsibilities.

The final portion of the survey asked a series of questions regarding the use of resources to discuss one's stress levels. Students were asked if they have met with their advisor to discuss wanting to drop their major or minor due to the stress it causes, as well as their source of receiving emotional support, help, or advice when discussing their stress levels. Finally, participants were asked if they were aware of the resources JMU has for helping students cope with stress. If a student selected that they were aware, they were asked to select from a list indicating which JMU resources provided within the Student Success Center (SSC) or the University Recreation Center (UREC) they use, as well as an "Other" option in which they could write in their response if a resource they use was not listed. Participants who selected they were unaware of the JMU resources, were instead directed to a different series of questions asking how likely they would be to utilize the same listed resources.

Research Questions

1. What are the top academic stressors reported by students?
2. What are the perceived graduate school stressor frequencies among the two student groups with intentions of attending graduate school?
3. What JMU resources are being utilized by students to address their stressors?
4. What are the perceived stress levels among students?
5. Does a trend exist between perceived stress levels and GPA?
6. Does stress impact student behavior?
7. How do students compare in their use of coping strategies from the Brief COPE Inventory?

8. Do any correlations exist between level of perceived stress and Brief COPE Inventory responses?

Data Analysis

Following the collection of surveys, the data was exported from Qualtrics and analyzed using IBM-SPSS Statistics 26 software. Research questions one through seven were analyzed in frequencies using descriptive statistics. Bivariate Pearson correlations were conducted for research question eight to evaluate the association between post undergraduate plans, perceived stress, and coping strategies.

Before beginning data analysis on the PSS-4 results, the two positively stated items (Question 10, items 2 & 3) were reverse coded. In order to generate a total perceived stress score, the four items of the PSS-4 were summed together. The PSS-4 does not have predetermined scores to represent different levels of perceived stress. For this study, a total PSS score of 5 and below was categorized as low level of stress; a total score of 6 to 11 was categorized as moderate level of stress, and a total score of 12 and above was categorized as a high level of stress. A reliability analysis was conducted to determine the internal consistency of the PSS-4. Cronbach's Alpha was reported at .618, which indicated an acceptable level of consistency for the scale being used with this specific sample.

In order to calculate an individual's tendency to use a specific coping strategy measured in the Brief COPE Inventory, the two items within each subscale were added to calculate a total score representative of the coping strategy being used. A reliability analysis was conducted to determine the internal consistency of the Brief COPE Inventory. Cronbach's Alpha was reported at .494, which indicated weak correlations. Selectively choosing the subscales from the 28 item Brief COPE Inventory may have contributed to these weak correlations. Therefore, it was

determined that the resulting data was still worth exploring, with the idea that future research refine the Inventory to examine if a stronger correlation could be reached.

"Prefer not to answer" was chosen sporadically and at a low selection response rate, making it not significantly relevant to data evaluation. Because of this, "prefer not to answer" was excluded from data analysis from the items focused on prescription stimulant use, academic integrity, and binge drinking. To measure academic integrity, binge drinking behaviors, and engagement in physical activity responses for "strongly disagree" and "somewhat disagree" were recoded into one variable to represent "disagree", as were "strongly agree" and "somewhat agree" to represent a single variable labeled "agree". For the likeliness of using JMU resources, responses for "extremely unlikely" and "somewhat unlikely" were combined to represent "unlikely", as were the responses for "somewhat likely" and "extremely likely" to represent "likely" in order to determine the overall likelihood of students using the available resources.

Chapter Four: Results

Although there were 300 total responses to the survey, 56 were excluded due to incompleteness. The final sample size used in data analysis included 244 participants (Table 1). Of the sample population, the year in school distribution was 15.2% freshmen (n=37), 23.8% sophomores (n=58), 21.3% juniors (n=52), 35.7% seniors (n=87), and 4.1% 5th year seniors (n=10). The College of Health and Behavioral Studies was selected by a majority of students (36.9%, n=90) as the college they would be graduating from, while the College of Education (4.5%, n=11), and College of Integrated Science and Engineering (4.9%, n=12) were the least reported colleges. When asked if they were pursuing a double major from more than one college, 8.2% (n=20) of participants selected "yes", in which the College of Arts and Letters (2.5%, n=6), College of Health and Behavioral Studies (2.0%, n=5), College of Science and Math (1.6%,

n=4), College of Visual and Performing Arts (1.2%, n=3) and the College of Business (0.8%, n=2) were chosen. For the purpose of this study, students were separated into three comparative groups based on their post undergraduate intentions after JMU. Although 14.8% of participants (n=36) selected a pre-professional health minor declaration, a total of 22.1% of participants (n=54) intend to pursue an advanced degree from a professional health program or graduate school. Table 2 shows further comparisons between post undergraduate plans and minor declaration. A similar number of participants intend to pursue an advanced degree from a graduate school not inclusive of public health (26.2%, n=64), and approximately half of the participants (51.6%, n=126) intend to start a career within their bachelor's degree field of interest.

For this study, "bachelor's degree" referred to undergraduate students who intend to start a career within their bachelor's degree field of interest, "professional health" referred to undergraduate students with intentions of pursuing an advanced degree from a professional health program or graduate school, and "non-professional health" referred to undergraduates with intentions of pursuing a degree from a graduate school not inclusive of professional health.

Research Question One: What are the top academic stressors reported by students?

Overall, the participants responded similarly when indicating most prevalent academic stressors they have experienced so far in their undergraduate career. Responses for all prevalent academic stressors are listed in Table 3. Although students in the bachelor's degree group reported lack of motivation as their most prevalent academic stressor (71.4%), approximately half of the professional health students (51.9%) and non-professional health students (53.1%) reported this stressor. Whereas pressure to succeed was reported as the top stressor among both student groups intending to pursue an advanced degree, with 75.9% professional health students

and 73.4% of non-professional health students, students in the bachelor's degree group experienced pressure to succeed as the second most frequent stressor (66.7%). Across all three groups, balancing coursework was found to be one of the top three experienced stressors, with bachelor's degree reporting it as the third most frequent, (61.1%), professional health as the second most frequent (68.5%), and non-professional health as the third most frequent (60.9%). Interestingly, while bachelor's degree (49.2%), and non-professional health students (51.6%) had studying for and taking exams as their sixth most frequent stressor, professional health students (61.1%) were found to experience studying for and taking exams as their second most prevalent stressor. On the other hand, financial obligations and competition among peers were found to be the least prevalent academic stressors across the three groups. In addition to the prelisted stressors, 5.7% of all participants identified additional stressors that contributed to their experienced stress. From this, work-life balance, online learning, and mental health were reported.

Research Question Two: What are the perceived graduate school stressor frequencies among the two student groups with intentions of pursuing an advanced degree?

There were notable differences in frequency of experienced graduate school stressors among students with intentions of pursuing an advanced degree from a professional health program or graduate school and students with intentions of pursuing an advanced degree not inclusive of professional health. Professional health students had consistent higher frequencies of “always” experiencing stress when thinking about the following graduate school topics in comparison to their non-professional health peers: Undergraduate GPA being high enough for acceptance (Professional health=50% vs. Non-professional health=12.5%), the graduate school application process (Professional health=29.6% vs. Non-professional health=12.5%), graduate

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school admissions tests (Professional health=38.9% vs. Non-professional health=10.9%), competition for acceptance into one's desired graduate school program (Professional health=61.1% vs. Non-professional health=21.9%), financing graduate school tuition (Professional health=44.4% vs. Non-professional health=35.9%), and ability to succeed in the graduate school program (Professional health=46.3% vs. Non-professional health=15.6%). Similarly, professional health students had consistent lower frequencies of "never" experiencing stress when thinking about the graduate school topics in comparison to their non-professional health peers. These findings implied that professional health students experience stress related to graduate school at an overall higher rate than non-professional students (See table 4).

Interestingly, whereas 22.2% of professional health students reported competition among peers as a prevalent academic stressor in their undergraduate career, competition for acceptance into one's desired graduate school program was the most frequently reported perceived graduate school stressor (61%). Although pressure to succeed was the most prevalent undergraduate stressor among professional health students (75.9%), and non-professional health students (73.4%), only 46.3% of professional health students and 15.6% of non-professional health students selected "always" when asked about the frequency of their experienced stress when thinking about their ability to succeed in the graduate school program. This discrepancy is surprising, as graduate level courses are known to be more rigorous and demanding than undergraduate level courses.

Research Question Three: What JMU resources are being utilized by students to address their stressors?

When asked if they were aware of the resources JMU has available for helping students cope with stress, 82.5% (n=202) selected that they were aware, and 17.2% (n=42) selected that

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they were unaware. Of those who were aware of the resources, 48% of the respondents selected that they have not used any JMU resources. Less than 15% of the participants who were aware of resources to cope with their levels of stress utilized the following options found within the Student Success Center (SSC): Self-Care Spaces at the Counseling Center (I.e., The Oasis, The Studio), the University Career Center, Learning Strategies Instruction, and group counseling workshops through the Counseling Center. Similar to these findings, of the participants who were unaware of the resources, 83.3% responded that they were unlikely to use group counseling workshops through the SSC counseling center, and only 2.4% responded that they were likely to use this resource. Learning Strategies Instruction, the Learning Centers, and individual counseling all received a higher response rate of being unlikely to be used by students who had selected they were unaware of the resources being offered. Self-Care Spaces, the University Career Center, and UREC all received a higher response rate of likely to be used by those who were unaware.

Also consistent with the findings from the overall resource utilization, not using any JMU resources was most frequently reported by approximately half of the students within each group (Bachelor's degree= 47.6%, Professional health= 54.3%, Non-professional health= 43.1%). Likewise, UREC mind/body exercise classes remained the second most frequently used resource (Bachelor's degree= 35.2%, Professional health= 34.8%, Non-professional health=33.3%). Individual counseling and the Learning Centers were the third and fourth most reported resources among bachelor's degree (19.0%, 15.2%), and non-professional health (21.6%, 13.7%) respondents. Professional health students had the learning centers as the third most frequently used (17.4%), and individual counseling as the fourth most frequently used (10.9%). In addition to the prelisted resources, participants could identify additional JMU resources they utilize top

cope with their stress. Of the 3.0% of students who took this opportunity, Therapy Assistance Online (TAO), clubs and organizations, and the meditation room in The Union were listed as being used to help cope with stress levels (See Table 5).

Research Question Four: What are the perceived stress levels among students?

An overall mean perceived stress score of 6.98 (SD=2.51) was calculated from all participants. These results suggested that undergraduate students at JMU experience a moderate level of perceived stress (See Table 6). In comparison to the overall reported levels of perceived stress by all participants, students from the professional health group had the highest average score of moderate levels of stress, with a mean of 7.20 (SD=2.55). Students in the bachelor's degree group had the second highest score of perceived stress, with a mean of 6.98 (SD=2.56). Students from the non-professional health group had the lowest mean score of perceived stress (M=6.78, SD=2.39).

Research Question Five: Does a trend exist between perceived stress levels and GPA?

Among bachelor's degree students, there was an inverse trend between cumulative GPA and levels of perceived stress. As cumulative GPA increased, levels of perceived stress (GPA=2.0-2.399, PSS=9.25) decreased (GPA=3.7-3.899, PSS=5.67). There was one exception to this trend, as bachelor's degree students with a GPA range of 3.9-4.0 reported a higher level of perceived stress (PSS=6.56) in comparison to their peers with lower GPA's. Except for the lowest and highest cumulative GPA (2.4-2.799; 3.9-4.0), and levels of perceived stress (7.4; 7.29), an inverse trend existed among professional health students. The variability in cumulative GPA and levels of perceived stress did not show a major trend among non-professional health students (See Figure 1).

Research Question Six: Does stress impact student behavior?

Of the students included in data analysis (n=234), 22.5% agreed they were willing to risk academic integrity if it meant getting a good grade. Of the 238 students included in the second data analysis for academic integrity, 57% responded that they were more likely to risk academic integrity when they are stressed and need to get their work done. When asked about the use of prescription stimulants not prescribed to them, 89.9% of students reported that they had not used prescription stimulants help with academics.

Of the students included in data analysis (n=242), 21.3% agreed they resorted to binge drinking and/or alcohol to alleviate their feelings of stress, 44.7% agreed they rewarded themselves for making it through a stressful week by binge drinking and/or using alcohol, and 82.8% of students disagreed that they would binge drink/ use alcohol to cope with stress they experienced over an upcoming assignment(s), project(s), or exam(s). Of those included in data analysis (n=237), 55.3% of students agreed they avoided drinking when they had a stressful week ahead.

When assessing physical activity engagement, 78.7% of students agreed they felt there was not enough time in the day to engage in physical activity when they had a demanding schedule. Further, 50.8% of the students indicated they did not engage in physical activity when they had a demanding schedule. Moreover, 47.5% of students agreed they engaged in physical activity to relieve their feelings of stress when they had a demanding schedule.

On an average school night, 86% of students reported sleeping eight hours or less and received an average seven and a half hours of sleep. On the night before an exam, presentation, or other heavily weighted academic assignment that caused stress, 91.4% of students reported sleeping eight hours or less, and received an average of roughly six to seven hours of sleep. Of

the responses included in data analysis (n=231), 76.6% of students reported being unlikely to pull an all-nighter on the night before an exam, presentation, or other heavily weighted academic assignment that caused stress.

Across all three discipline groups, friends (84%) and family (70.1%) were the most frequently reported resource for students to receive emotional support, help, or advice from when discussing their stress levels. The use of a therapist or counselor was reported by 31.1% of students, followed by professors (11.5%) and academic advisors (9.8%). Not receiving emotional support, help, or advice from others was reported by 7% of students. Students also reported their pets, significant other, mentors outside of academics, and social media accounts as their resource for emotional support, help, or advice.

Research Question Seven: How do students compare in their use of coping strategies from the Brief COPE Inventory?

Professional health students had the highest average score for the adaptive coping strategy of planning (M=6.0, SD=1.5), and bachelor's degree students had the highest average score for the adaptive coping strategy of using emotional support (M=5.4, SD=1.8). Bachelor's degree students had the highest average scores of using the maladaptive coping strategies of behavioral disengagement (M=3.5, SD=1.6) and substance use (M=3.6, SD=1.9). Bachelor's degree students (M=5.7, SD=1.8) and professional health students (M=5.7, SD=1.9) had the same average score of using the maladaptive coping strategy for self-blame (See Table 7).

Research Question Eight: Do any correlations exist between level of perceived stress and Brief COPE Inventory responses?

Pearson's correlation analysis was conducted to assess the relationship between PSS scores and coping strategies measured using the Brief COPE Inventory (See Table 8). Probability

levels at $p < 0.05$ were considered statistically significant. There were significant positive correlations between PSS scores and the coping strategies of substance use ($r = .181$, $p = .004$), behavioral disengagement ($r = .379$, $p = .001$), and self-blame ($r = .426$, $p = .001$). Higher stress levels were correlated with a greater use of maladaptive coping, specifically, substance use, behavioral disengagement, and self-blame coping strategies. There were no significant correlations ($p > 0.05$) between PSS scores and coping strategies of self-distraction, emotional support, and planning.

Chapter Five: Discussion and Conclusions

Introduction

The current study shed light on the prevalent stressors, perceived stress, and use of stress coping strategies among undergraduate students. Overall, students at JMU experienced moderate levels of stress which may serve as a valid reference for perceived stress among undergraduate students. Greater levels of maladaptive coping strategies, including self-blame, behavioral disengagement, and substance use were correlated with greater levels of perceived stress. The results of this study showed the adaptive coping strategy “planning” as the most frequently used coping strategy, while substance use and behavioral disengagement were the least frequently used.

Discussion

The inverse relationship between the emotional support and perceived stress not being significantly correlated to one another was unexpected, as the use of emotional support mediates the severity of experienced stress (Cleveland Clinic, 2020). Likewise, the absence of a significant correlation between planning and perceived stress was unexpected since it was the most frequently used coping strategy and it plays an important role in minimizing levels of stress (McLeod, 2015).

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Although students experienced an overall moderate level of stress, students with intentions of pursuing an advanced degree from a professional health program or graduate school experienced higher levels of stress in comparison to their peers. This finding supports the research that has focused specifically on health professions students (Stark, Hoekstra, Lindstrom Hazel, Barton, 2009). The competitive nature for graduate school acceptance and having a high undergraduate GPA were the most frequently experienced stressors among students with intentions of attending a professional health program or graduate school. This aligns with previous research that has focused specifically on health professions students' high awareness of the competitive admissions process (Dumke et al, 2018). The stressor discrepancies between competition among peers and pressure to succeed at the undergraduate level compared to competition for acceptance and ability to succeed in the graduate school program opens the discussion to student perceptions of undergraduate versus graduate school expectations. Students ultimately compete against one another to gain acceptance into their program, and graduate level courses are known to be more rigorous and demanding than undergraduate level courses.

This study did not take into account if the therapist or counselor students reported seeing was provided through the counseling services within the Student Success Center. With this, however, the use of the emotional support opens the discussion to the use of and effectiveness of individual and group counseling. Attitudes and knowledge (including stigma), lack of time, and concerns about privacy inhibit students from seeking help from a counseling service (Eisenberg, Golberstein, Gollust, 2007). It is worth noting that students may have similar preconceived notions regarding counseling, which may have influenced the low rates at which individual and group counseling were used/ likely to be used. Although self-distraction was not significantly correlated with levels of perceived stress, students engaging in physical activity to relieve their

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feelings of stress may explain why this coping strategy tends to be used by students. In this case, self-distraction serves as an adaptive coping strategy as it is being used to help students cope with their stress in a natural and healthy manner. Since UREC was the most used resource among all students, effectively advertising mind/body exercise classes that are offered may contribute to a greater number of students meeting the exercise requirement while alleviating their feelings of stress.

Although they were least used, Learning Strategies Instruction and the Learning Centers are beneficial resources that could make a significant difference in managing the prevalence of academic stressors experienced by students. Students with intentions of attending graduate school experienced additional stressors and would greatly benefit from Learning Strategies Instruction. The strategies established using this resource at the undergraduate level can then be further honed at the graduate level. In turn, the frequency and severity in which they experience stress regarding undergraduate GPA being high enough for acceptance, ability to succeed in the graduate school program, and graduate school admissions testing might be alleviated.

Across all three discipline groups, GPA's ranging from the 2.8-3.699 were most reported, whereas GPA's ranging from 2.0-2.799 and 3.7-3.0 were the least reported. The variability in responses to each range contributed to the inconsistency in trends looking at GPA and perceived stress level within each discipline group. However, trends found within the most reported GPA ranges showed an inverse relationship between cumulative GPA and level of perceived stress among bachelor's degree and professional health students. Non-professional health students experienced a positive trend in which an increase in GPA corresponded to an increase in level of perceived stress.

Academic integrity motivations and perceptions of stress played an important role in one's willingness to partake in academic dishonesty. More than half of the participants responded that they would be more likely to risk academic integrity when stressed and need to complete their work. This finding not only aligns with, but exceeds, the estimated rates of academic dishonesty among college students (Schmelkin et al, 2008).

Inconsistent with the literature from Norman & Ford (2018), students with intentions of attending graduate school reported lower rates of prescription stimulant misuse compared to their peers who plan on starting a career within their field of interest following graduation. Although a majority of students had not engaged in PSM, 10.1% of students reporting that they have is alarming as it is nearly double the nationally reported statistics from the American College Health Association (2019).

Inconsistent with the findings from Norman & Ford (2018), students were not more likely to engage in binge drinking and/or using alcohol as a coping mechanism when experiencing heightened perceptions of academic stress. Although more than three quarters of students did not use binge drinking/ alcohol as coping mechanism during the week they are experiencing academic related stress, roughly half of the students reported binge drinking/ using alcohol as a reward for making it through a stressful week. This finding, as well as the correlations between substance use, self-distraction, and behavioral disengagement, align with Chen & Feeley (2016), and show that alcohol is being used as a coping strategy to provide momentary relief from stress that has just been experienced.

It was not specified if students engaged in moderate or vigorous-intensity exercise. However, the less than half of the students meeting the minimum exercise recommendation is consistent with previous findings from the American College Health Association (2019).

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Previous research has documented that physical activity is associated with improved mental health and the ability to cope with stress (Stults-Kolehmainen & Sinha, 2015). The prevalence of academic stressors including balancing coursework, academic overload, demanding coursework, and studying for and taking exams may influence students' perceptions of having a demanding schedule. The negative influence that a demanding schedule had on engagement in physical activity provided insight as to why half of the students did not engage in physical activity during this time. The inverse relationship discussed by Stults-Kolehmainen & Sinha (2015) was seen among students who did not engage in physical activity to alleviate their feelings of stress when faced with a demanding schedule. Conversely, some students reported using exercise as a stress coping strategy to alleviate their feelings of stress, which also aligns with the findings from Stults-Kolehmainen & Sinha (2015). These contradicting findings highlight the need for future research in discerning the effect that stress has on physical activity perceptions.

Aligning with previous research, students at JMU received approximately seven hours of sleep on an average school night (Forquer, Camden, Gabrielau, Johnson, 2008; Kloss, Nash, Walsh, Culnan, Horsey, Sexton-Radek, 2014). Stress experienced the night before an exam, presentation, or other heavily weighted academic assignment contributed to poor sleeping patterns among students. These sleep disturbances can affect perceptions of academic stressors including lack of motivation, studying for and taking exams, and academic performance, which is consistent with the literature from Oswald & Wyatt (2015).

Most students did not receive emotional support, help, or advice from their advisor when discussing their stress levels. However, students who met with their advisor to discuss wanting to drop their major due to the stress it caused remained in their major at a considerably higher rate than those who decided to drop. The same is true for students who have a minor. This shows the

influential role that academic advisors have on taking their students' stress levels into consideration while keeping them on track with their program of study.

Suggestions for future research

This study aimed to increase awareness among university leadership on prevalent academic stressors, perceived stress, and stress coping strategies used by different undergraduate students, so that university leadership can recognize the need for more effective and adaptable resources. Future research could benefit by using a regression analysis approach rather than a bivariate approach, as it would allow for a more thorough investigation of the relationships between perceived stress and coping strategies. The results from this study did not provide ample evidence as to why students were not using the resources provided by the university. Future research should examine if the factors discussed by Eisenberg et al., (2017), impact individual's willingness to seek support from the Counseling Center. Doing so may provide an explanation regarding the low rate at which individual and group counseling were utilized by students.

Both internal and external factors that contribute to academic stress should be considered in future research. The impact of mental health, as mentioned in the perceived academic stressors section, might play an important role in one's overall perception of stress. Likewise, some stress may be self-imposed, and the way in which one manages this stress may exacerbate their overall perceptions of stress. In addition to that, internal factors, such as self-care, organizational, and time management skills, as well as external factors, such as intensity of academics, workload, and work-life balance should be considered.

Conclusions

The current study has added to the existing literature by examining the impact of that stress has on student behaviors including binge drinking, physical activity, sleep, and academic

integrity. From a leadership perspective, the overall academic climate and availability of resources influencing these levels of stress and stress coping strategies must be further examined. Information regarding the current use and likeliness of using JMU resources to cope with stress allows for future research to be conducted to examine the overall effectiveness of the resources that are being used.

From an administrative perspective, student intake forms asking about post-graduation plans could be an effective way for advisors to identify which of their students might be at an increased likelihood of experiencing stress. Students with intentions of pursuing an advanced degree from a professional health program or graduate school may serve as a reference for students who are likely to experience higher levels of stress within the undergraduate population. These results are also useful at the graduate level, as the way they describe their admissions requirements may influence individual's understanding of program expectations. By providing more comprehensive statistics and descriptions of their graduate school admissions criteria, advisors at the undergraduate level may play a significant role in helping their students prepare for these requirements.

Professors would play a critical role in increasing their students' awareness of resources, specifically Learning Strategies Instruction and the Learning Centers. To do so, professors could discuss these resources with their students and include information about them in their class syllabus. In addition to that, a module or file containing links and information about these recourses could be placed at the top of their Canvas page. As a result, professors would improve their contribution as a resource to their students and would play a significant role in managing their perceptions of academic stress.

Finding that nearly half of the participants did not use resources offered by JMU was surprising, as they could play a critical role in minimizing stress levels among students. To improve these utilization rates, the use of Canvas would be essential in sharing and promoting resources offered by JMU to help students cope with stress. To accomplish this, a Canvas course page accessible to all students containing information on and links to what is offered should be created. This is a convenient and practical approach to increase students' awareness of and access to these resources.

Concluding/ Summarizing Remark

There are ample services offered to those who are experiencing stress, but with modifications and additions to pre-existing services, such as those offered through the Student Success Center, JMU can optimize their support resources. The promotion and dissemination of information on stress management resources offered by JMU might lead to an increase in interest and student turnout rates. Since coping strategies varied among students, it is important to offer different types of programs and opportunities in order to maximize student engagement. By doing so, students will have access to effective stress prevention or stress management resources that appeal to their coping styles. The findings from this study can underpin the actions of university leadership in modifying existing resources and in the development of wellness initiatives to create a healthier and more productive environment for its undergraduate students.

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Table 1*Demographic Characteristics of Participants*

Characteristic	n	%
Year in School		
Freshman	37	15.2
Sophomore	58	23.8
Junior	52	21.3
Senior	87	35.7
5 th Year Senior	10	4.1
College		
College of Arts and Letters	54	22.1
College of Business	34	13.9
College of Education	11	4.5
College of Health and Behavioral Studies	90	36.9
College of Integrated Science and Engineering	12	4.9
College of Science and Math	28	11.5
College of Visual and Performing Arts	15	6.1
Minor Declaration		
No minor	93	38.1
Pre-Professional Health	36	14.8
Not Pre-Professional Health	115	47.1
Post Undergraduate Plans		
Bachelor's degree	126	51.6
Professional health	54	22.1
Non-professional health	64	26.2

Note. Bachelor's degree=Start a career within bachelor's degree field of interest;

Professional health= Professional health program or graduate school;

Non-professional health= Non-professional health graduate school.

ACADEMIC STRESSORS, PERCEIVED STRESS, AND COPING AMONG UNDERGRADUATES

Table 2

Participants by Post Undergraduate Plans and Current Minor Declaration

Minor Declaration	Post Undergraduate Plans		
	Bachelor's degree	Professional health	Non-professional health
No minor	48.4	20.4	32.8
Pre-Professional Health	1.6	61.1	1.6
Not Pre-Professional Health	50.0	18.5	65.6

Note. % reflects the Minor Declaration percentage within Post Undergraduate Plans.

Table 3

Prevalent Academic Stressors Among Students

Bachelor's degree		Professional health		Non-professional health	
Stressor	%	Stressor	%	Stressor	%
Lack of motivation	71.4	Pressure to succeed	75.9	Pressure to succeed	73.4
Pressure to succeed	66.7	Balancing coursework	68.5	Academic overload	64.1
Balancing coursework	61.1	Studying for and taking exams	61.1	Balancing coursework	60.9
Academic overload	54.8	Academic overload	59.3	Lack of motivation	53.1
Demanding coursework	54.8	Academic performance	55.6	Demanding coursework	51.6
Studying for and taking exams	49.2	Lack of motivation	51.9	Studying for and taking exams	51.6
Meeting coursework deadlines	36.5	Demanding coursework	48.1	Academic performance	40.6
Academic performance	31.0	Competition among peers	22.2	Financial obligations	28.1
Financial obligations	25.4	Financial obligations	18.5	Meeting coursework deadlines	26.6
Competition among peers	17.5	Meeting coursework deadlines	18.5	Competition among peers	10.9

Table 4*Frequency of Experienced Graduate School Stress*

Stressor	Frequency (%)			
	Never	Sometimes	Most of the time	Always
Professional health				
GPA	0.0	25.9	24.1	50.0
Process	3.7	27.8	38.9	29.6
Testing	7.4	33.3	20.4	38.9
Competition	1.9	13.0	24.1	61.1
Tuition	9.3	24.1	22.2	44.4
Success	3.7	29.6	20.4	46.3
Non-professional health				
GPA	23.4	29.7	34.4	12.5
Process	10.9	48.4	28.1	12.5
Testing	31.3	37.5	20.3	10.9
Competition	14.1	28.1	35.9	21.9
Tuition	12.5	31.3	20.3	35.9
Success	12.5	40.6	31.3	15.6

ACADEMIC STRESSORS, PERCEIVED STRESS, AND COPING AMONG UNDERGRADUATES

Table 5

Utilization of JMU Resources by Students

Bachelor's degree		Professional health		Non-professional health	
Resource	%	Resource	%	Resource	%
Have not used	47.6	Have not used	54.3	Have not used	43.1
UREC	35.2	UREC	34.8	UREC	33.3
Individual counseling	19.0	Learning Centers	17.4	Individual counseling	21.6
Learning Centers	15.2	Individual Counseling	10.9	Learning Centers	13.7
Self-Care Spaces	11.4	University Career Center	10.9	Self-Care Spaces	11.8
University Career Center	8.6	Self-Care Spaces	6.5	Group counseling	9.8
Learning Strategies Instruction	4.8	Learning Strategies Instruction	4.3	University Career Center	7.8
Group counseling	2.9	Group counseling	0.0	Learning Strategies Instruction	5.9
Other	2.9	Other	0.0	Other	5.9

Table 6

Perceived Stress Scores Among Students

Characteristic	Perceived Stress Score	
	M	SD
Bachelor's degree	6.98	2.56
Professional health	7.20	2.55
Non-professional health	6.78	2.39
Total	6.98	2.51

ACADEMIC STRESSORS, PERCEIVED STRESS, AND COPING AMONG UNDERGRADUATES

Table 7

Brief COPE Inventory Strategy Scores

COPE strategy	Overall		Bachelor's degree		Non-professional health		Professional health	
	M	SD	M	SD	M	SD	M	SD
Behavioral disengagement	3.3	1.5	3.5	1.6	3.2	1.4	3.2	1.4
Emotional support	5.2	1.9	5.4	1.8	5.2	1.8	5.0	2.0
Planning	5.8	1.6	5.7	1.6	5.6	1.4	6.0	1.5
Self-blame	5.5	1.9	5.7	1.8	5.1	1.9	5.7	1.9
Self-distraction	5.5	1.5	5.7	1.3	5.0	1.5	5.5	1.7
Substance use	3.3	1.9	3.6	1.9	3.1	1.9	3.0	1.6

Table 8

Correlations Between Perceived Stress and Brief COPE Strategies

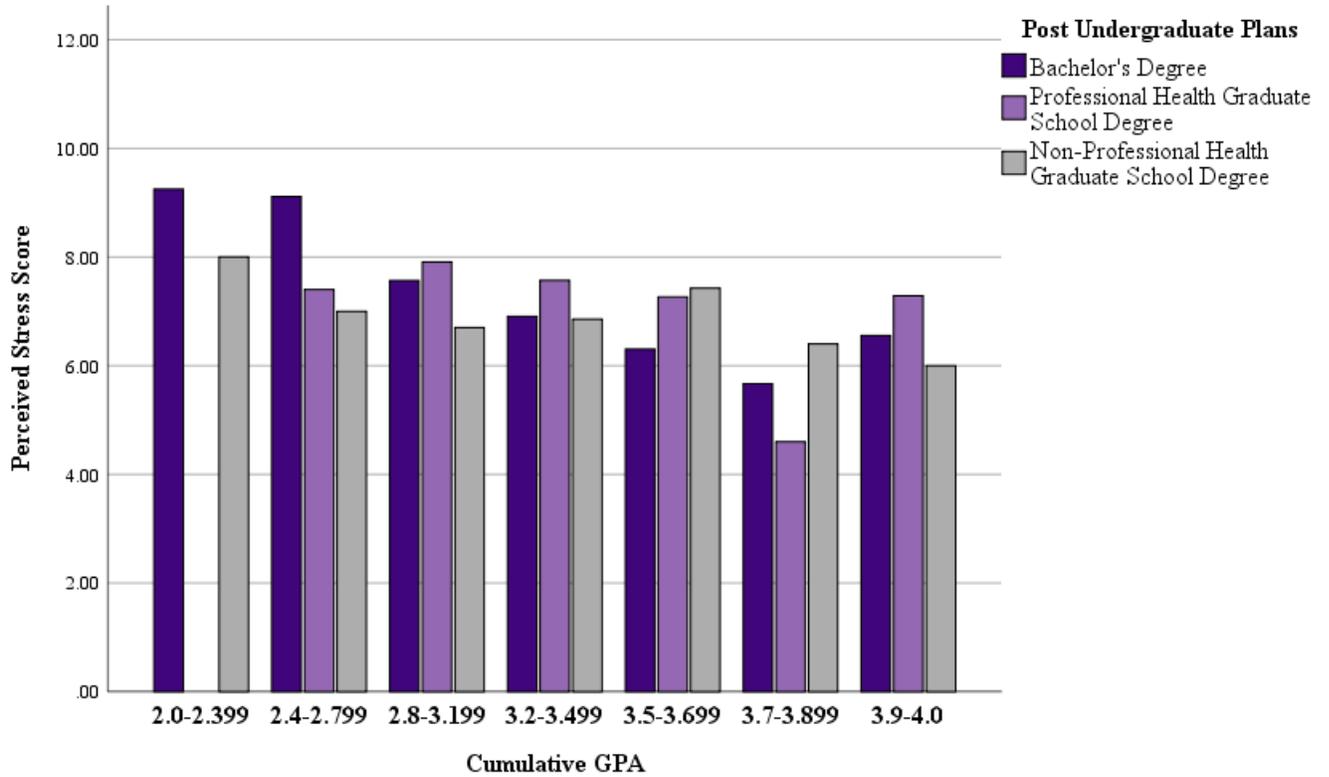
Measure	1	2	3	4	5	6	7
1. Perceived stress	—						
2. Self-distraction	.117	—					
3. Substance use	.181**	.126*	—				
4. Emotional support	-.092	.127*	-.014	—			
5. Behavioral disengagement	.379**	.169**	.204**	-.099	—		
6. Self-blame	.426**	.252**	.210**	.038	.412**	—	
7. Planning	.028	.222**	.090	.279**	-.079	.218**	—

Note. ** Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Figure 1

Trends between post-graduation plans, cumulative GPA, and perceived stress score



APPENDIX A

Demographic Questions

1. Year in school
 - A. Freshman
 - B. Sophomore
 - C. Junior
 - D. Senior
 - E. 5th year
2. Are you currently pursuing a double major from more than one college at JMU?
 - A. Yes
 - B. No
3. Please select the college you will be graduating from
 - A. College of Arts and Letters
 - B. College of Business
 - C. College of Education
 - D. College of Health and Behavioral Studies
 - E. College of Integrated Science and Engineering
 - F. College of Science and Math
 - G. College of Visual and Performing Arts
4. (USE DISPLAY LOGIC HERE IF “yes” FROM #2). Please select the college you will be graduating from
 - A. College of Arts and Letters
 - B. College of Business
 - C. College of Education
 - D. College of Health and Behavioral Studies
 - E. College of Integrated Science and Engineering
 - F. College of Science and Math
 - G. College of Visual and Performing Arts
5. Current minor declaration
 - A. I have not declared a minor
 - B. I have declared a Pre-Professional Health minor (e.g., Pre-OT, etc)
 - C. I have declared a minor(s) that is NOT Pre-Professional Health
6. As of the most recent semester, my cumulative GPA is...
 - 2.0 - 2.399
 - 2.4 - 2.799
 - 2.8 - 3.199
 - 3.2 - 3.499
 - 3.5 - 3.699
 - 3.7 - 3.899
 - 3.9 - 4.0
7. After graduation, I intend to...
 - A. Start a career within my field of interest with my Bachelor’s Degree
 - B. Pursue an advanced degree from a professional health program or graduate school (i.e. Physical/Occupational Therapy, Physician’s Assistant, Medical School, etc.)

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- C. Pursue an advanced degree from a graduate school not inclusive of professional health
8. Please select the five most prevalent academic stressors you have experienced so far in your undergraduate career.
- A. Demanding course work
 - B. Academic overload
 - C. Pressure to succeed
 - D. Lack of motivation
 - E. Meeting coursework deadlines
 - F. Balancing coursework
 - G. Competition among peers
 - H. Studying for and taking exams
 - I. Academic performance
 - J. Financial obligations
 - K. Other
- Write in option available

Grad School and Pre-Professional Graduate School Stressors

9. Please select the frequency of your experienced stress when thinking about the following graduate school topics:
- 1=Never, 2= Sometimes, 3= Most of the time, 4= Always
 - 1. Undergraduate GPA being high enough for acceptance
 - 1, 2, 3, 4
 - 2. The graduate school application process (e.g., receiving letters of recommendation, writing a personal essay, meeting observation hour requirements, etc.)
 - 1, 2, 3, 4
 - 3. Graduate school admissions tests (e.g., GRE, MCAT)
 - 1, 2, 3, 4
 - 4. Competition for acceptance into my desired graduate school program
 - 1, 2, 3, 4
 - 5. Financing my graduate school tuition
 - 1, 2, 3, 4
 - 6. My ability to succeed once admitted into my graduate school program
 - 1, 2, 3, 4

Perceived Stress Scale 4 (PSS-4)

10. In the last month, how often have you felt...
- 0= Never, 1= Almost never, 2= Sometimes, 3= Fairly often, 4= Very often
 - 1. you were unable to control the important things in your life?
 - 0, 1, 2, 3, 4
 - 2. confident about your ability to handle your school related problems?
 - 0, 1, 2, 3, 4
 - 3. things were going your way in school?
 - 0, 1, 2, 3, 4

4. academic difficulties were piling up so high that you could not overcome them?
- 0, 1, 2, 3, 4

Brief COPE Inventory

11. The following questions will ask about your coping strategies in response to various stressors.

- 1= I haven't been doing this at all, 2= I've been doing this a little bit , 3= I've been doing this a medium amount, 4= I've been doing this a lot
1. I've been turning to work or other activities to take my mind off things
 - 0, 1, 2, 3, 4
 2. I've been using alcohol or other drugs to make myself feel better
 - 0, 1, 2, 3, 4
 3. I've been getting emotional support from others
 - 0, 1, 2, 3, 4
 4. I've been giving up trying to deal with it
 - 0, 1, 2, 3, 4
 5. I've been using alcohol or other drugs to help me get through it
 - 0, 1, 2, 3, 4
 6. I've been criticizing myself
 - 0, 1, 2, 3, 4
 7. I've been trying to come up with a strategy about what to do
 - 0, 1, 2, 3, 4
 8. I've been getting comfort and understanding from someone
 - 0, 1, 2, 3, 4
 9. I've been giving up the attempt to cope
 - 0, 1, 2, 3, 4
 10. I've been doing something to think about it less
 - 0, 1, 2, 3, 4
 11. I've been thinking hard about what steps to take
 - 0, 1, 2, 3, 4
 12. I've been blaming myself for things that happened
 - 0, 1, 2, 3, 4

12. Academic Integrity

- 1=Slightly Disagree, 2= Disagree, 3= Neutral, 4= Slightly Agree, 5= Agree, 6=Strongly Agree
1. I am willing to risk academic integrity if it means getting a good grade
 - 1, 2, 3, 4, 5, 6
 2. I am more likely to risk academic integrity when I am stressed and need to get my work done
 - 1, 2, 3, 4, 5, 6

Substance Use

13. For the purpose of this question, prescription stimulants include Adderall, Ritalin, Vyvanse, Dexedrine, Concerta, or Focalin.
During the past academic year did you use any prescription stimulants, not prescribed to you, to help with academics?
- Yes
 - No
 - Prefer not to answer

14. Drinking Behaviors

“Binge drinking” refers to consuming five or more drinks for men or four or more drinks for women within two hours or at one sitting that brings the blood alcohol concentration levels to 0.08 or higher.

- 1=Strongly disagree, 2= Somewhat disagree, 3= Neither agree nor disagree, 4= Somewhat agree, 5= Strongly agree, 6= Prefer not to answer

1. I resort to binge drinking and/ or using alcohol to alleviate my feelings of stress
 - 1, 2, 3, 4, 5, 6
2. I avoid drinking when I have a stressful week ahead
 - 1, 2, 3, 4, 5, 6
3. If I am experiencing stress over an upcoming assignment(s), project(s), exam(s), etc., I will binge drink and/ or use alcohol to cope with my stress
 - 1, 2, 3, 4, 5, 6
4. I reward myself for making it through a stressful week by binge drinking and/ or using alcohol
 - 1, 2, 3, 4, 5, 6

15. On average, I spend _____ minutes working out each week

- 0-30
- 30-90
- 90-150
- 150-210
- 210-270
- 270-300
- 300+

16. The following questions will use a 5-point Likert Scale, where:

- 1=Strongly disagree, 2= Somewhat disagree, 3= Neither agree nor disagree, 4= Somewhat agree, 5= Strongly agree

1. When I have a demanding schedule, I engage in physical activity
 - 1, 2, 3, 4, 5
2. When I have a demanding schedule, I feel like there is not enough time in the day to engage in physical activity
 - 1, 2, 3, 4, 5
3. When I have a demanding schedule, I engage in physical activity to relieve my feelings of stress
 - 1, 2, 3, 4, 5

17. On an average school night, how many hours of sleep do you get?

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- 4 or less hours
 - 5-6 hours
 - 6-7 hours
 - 7-8 hours
 - 8-9 hours
 - 9-10 hours
 - 10 or more hours
18. On the night before an exam, presentation, or other heavily weighted academic related assignment, how many hours of sleep do you get?
- 4 or less hours
 - 5-6 hours
 - 6-7 hours
 - 7-8 hours
 - 8-9 hours
 - 9-10 hours
 - 10 or more hours
19. For the purpose of this question, an “all-nighter” refers to working throughout the night without sleeping.
On the night before an exam, presentation, or other heavily weighted academic related assignment that causes you to be stressed, how likely are you to pull an all-nighter?
1= Extremely unlikely, 2= Unlikely, 3= Neutral, 4= Likely, 5= Extremely likely
- o 1, 2, 3, 4, 5
20. The following statements address meeting with your academic advisor(s) to discuss wanting to drop your major due to the stress it causes
Please select the option that best applies to you:
- I have met with my academic advisor(s) to discuss wanting to drop my major due to the stress it causes
 - o I have met with my advisor(s) and have decided to keep my major
 - o I have met with my advisor(s) and have dropped my major
 - o I have thought about meeting with my advisor(s) but did not end up meeting with them
 - o My major does not cause enough stress to the point where I would consider meeting with my advisor(s) and dropping it
21. The following statements address meeting with your academic advisor(s) to discuss wanting to drop your minor due to the stress it causes
Please select the option that best applies to you:
- I have met with my academic advisor(s) to discuss wanting to drop my minor due to the stress it causes
 - o I have met with my advisor(s) and have decided to keep my minor
 - o I have met with my advisor(s) and have dropped my minor
 - o I have thought about meeting with my advisor(s) but have not followed through
 - o My major does not cause enough stress to the point where I would consider meeting with my advisor(s) and dropping it

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22. I get emotional support, help, or advice from the following when discussing my stress levels.

Choose all that apply:

- A therapist, counselor, etc.
- My academic advisor(s)
- My professor(s)
- Family
- Friends
- I do not receive emotional support, help, or advice from others
- Other (Option for write in answer available)

23. I am aware of the resources JMU has for helping students cope with stress.

- A. Yes
- B. No

24. (USE SKIP LOGIC HERE) **If aware, check all that apply**

- I have used the following JMU resources to help me cope with my stress levels
 - o Individual counseling through the SSC Counseling Center
 - o Group counseling center workshops through the SSC Counseling Center
 - o Self-Care Spaces in SSC at The Counseling Center (i.e., The Oasis, The Studio)
 - o Learning Strategies Instruction in SSC
 - o The University Career Center in SSC
 - o The Learning Centers in SSC
 - o UREC mind/body exercise classes
 - o Other (write in option available)
 - o I have not used any JMU resources

25. (USE SKIP LOGIC HERE) **If unaware**

- 1= Extremely unlikely, 2= Unlikely, 3= Neutral, 4= Likely, 5= Extremely likely
 - How likely would you be to utilize the following on campus resources?
 - o Individual counseling through the SSC Counseling Center
 - 1, 2, 3, 4, 5
 - o Group counseling center workshops through the SSC Counseling Center
 - 1, 2, 3, 4, 5
 - o Self-Care Spaces in SSC at The Counseling Center (i.e., The Oasis, The Studio)
 - 1, 2, 3, 4, 5
 - o Learning Strategies Instruction in SSC
 - 1, 2, 3, 4, 5
 - o The University Career Center in SSC
 - 1, 2, 3, 4, 5
 - o The Learning Centers in SSC
 - 1, 2, 3, 4, 5
 - o UREC mind/body exercise classes

- 1, 2, 3, 4, 5

END OF SURVEY MESSAGE

Thank you for your time in completing this survey. If you would like to learn more about the resources JMU has available for students please use the following links:

The Counseling Center in SSC: <https://www.jmu.edu/counselingctr/index.shtml>

Learning Strategies Instruction in SSC: <https://www.jmu.edu/lsi/>

The University Career Center in SSC: <https://www.jmu.edu/cap/>

The Learning Centers in SSC: <https://www.jmu.edu/learning/>

UREC Resources: <https://www.jmu.edu/recreation/index.shtml>