

Physical Activity and Coping Tactics in Undergraduate Students

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Abstract

College can be stressful, making it important for students to have effective coping mechanisms in place. While some research has examined how college students deal with stress, very little has examined the effectiveness of physical activity as a coping mechanism for college students. The present study did just that. College students enrolled in Introductory Psychology completed A Quantitative Assessment of Stress Tolerance (Bland, Melton, Bigham, & Welle, 2014). This survey assessed college student stress levels and coping tactics. We also assessed how effective physical activity is as a coping mechanism compared to other forms of coping mechanisms. We found that most students in our population did not exercise; thus, it was difficult to test our hypothesis. Keywords: physical activity, coping mechanism, undergraduate students

College can be very stressful (University of Florida, n.d.). Academic performance, pressure to succeed, and post-graduate plans are the top concerns that are causing college students stress (Beiter et al., 2015). Other stressors can include maintaining relationships, extracurricular activities, jobs, and financial stability. In fact, 80% of college students say they frequently or sometimes experience daily stress. Although most college students are under a lot of stress, it only becomes harmful when it is excessive (University of Florida, n.d.). When stress becomes excessive, it may negatively impact mental and physical well-being. Effects of stress risks include high blood pressure, colds and other illnesses, depression and anxiety, anger, and forgetfulness (University of Florida, n.d.). Although college can be stressful on students, some have more effective coping mechanisms than others (Choa, 2012).

Because college can be so stressful, it is important for students to have effective coping mechanisms in place. Bland et al. (2014) conducted a study quantifying the impact of physical activity on stress levels in college students. The researchers surveyed 250 undergraduate students using The Stress Tolerance Questionnaire (STQ) and found some of the most common causes of stress in college students include the transition to college from high school, feelings of uncertainty about the future/future career, summer job plans, moving, transferring to a new university, and changes in living conditions (Bland et al., 2014). To cope with these changes, students reported listening to music, sleeping, getting support from friends/family/instructors, and surfing the Internet (Bland et al., 2014).

Unfortunately, not all coping mechanisms are effective. In fact, sleeping away stress is a dysfunctional coping mechanism (Carver et al., 1989). Bland et al. (2014) reported that listening to music, sleeping, and surfing the Internet do not relieve stress, but rather might exacerbate it. On the other hand, getting social support, engaging in social interaction, and participating in vigorous physical activity, stretching exercises, and strength training were shown to be more effective at dealing with stress. This is not surprising given what we know about coping styles. The way one deals with stress is an important component of psychological well-being (Thome & Espelage, 2004).

According to Richard Straub, coping is defined as “the cognitive, behavioral, and emotional ways that people deal with stressful situations and includes any attempts to preserve mental and physical health—even if it has limited value” (p. 153). There are four main approaches to dealing with stress: approach (vigilant) coping, avoidant coping, problem-focused coping, and emotion-focused coping (Straub, 2014). Approach (vigilant) coping is attempting to deal with the problem by directly confronting the stressor. Problem-oriented coping is doing something constructive to problem solve. Emotion-oriented coping is managing the uncomfortable effect associated with a stressor, and avoidance-oriented coping is seeking a distraction or social diversion.

Welle and Graf (2013) surveyed 429 college students to examine the most effective lifestyle habits and coping strategies for dealing with stress. They found that participants that took better care of themselves (e.g.,

feeling well supported, getting regular exercise, having a balanced diet, and being involved in an extracurricular sport) had lower levels of stress. These are all related to physical health, which supports the correlation between physical health and coping mechanisms (Welle & Graf, 2014).

In the area of physical activity and stress, most psychologists agree that students' stress levels rise when entering college (D'Zurilla & Sheedy, 1991) while physical activity levels are decreasing (Brownson, 2005). According to the Center for Disease Control and Prevention (2105), an adult can meet the weekly physical activity requirements by engaging in at least two days of muscle-strengthening activities and including one of the following: 1) at least 150 minutes of moderate-intensity aerobic activity, 2) at least 75 minutes of vigorous-intensity aerobic activity, and 3) an equivalent mix of moderate- and vigorous-intensity aerobic activity. However, this becomes problematic when researchers are unable to find an effective way to get students to meet these requirements while maintaining a healthy stress level. Recent research indicates that when students are more active, participating in sports for example, they have enhanced emotional and behavioral well-being (Donaldson & Ronan, 2006). In addition, exercise may help reduce anxiety and depression (Dishman, 1995) and serve as a stress buffer (Flueckiger, 2016), but the reason is still unknown.

Researchers have shown that exercise can be very beneficial as a coping mechanism. Thome and Espelage (2004) found that exercise decreases depression and anxiety and improves mood state, self-esteem, and body image. Thome and Espelage (2004) go so far as to suggest that "exercise-oriented coping" should be its own style, making physical activity a coping mechanism. They found exercise-oriented coping modestly correlated with life satisfaction (Thome & Espelage, 2004).

Thome and Espelage also examined the difference between males and females in using exercise as a coping mechanism. Thome and Espelage (2004) found that males "go to the gym to workout" more often than do females when faced with difficult situations. However, the researchers also found that there were no gender differences in the amount of time spent in the gym. So, while women and men may spend the same amount of time at the gym each week, they may do so for different reasons.

Dinger, Brittain, and Susan (2014) conducted a study examining physical activity and health related factors in 18-20-year-olds. They found that only 50% of college-aged students are meeting the moderate to vigorous physical activity recommendation. The researchers indicated that after controlling for all other variables, the students that were meeting the moderate to vigorous physical activity recommendation also showed less perceived depression.

Considering that the literature indicates stress levels are rising and effective coping mechanisms are lacking, the present study will assess physical activity and stress levels to determine the effectiveness of physical activity as a coping mechanism in college students. We will also examine how physical activity compares to other coping mechanisms and what factors are causing college students the most stress. I hypothesize that physical activity will serve as an effective coping mechanism for college students and will improve students' stress levels. That is, I hypothesize that students who participate in more physical activity will score lower on stress scales than students who do not.

Method

This study used a survey with questions from Bland et al.'s (2014) A Quantitative Assessment of Stress Tolerance. The survey was administered twice online using Qualtrics, and all participants were tested individually with no time limit. In the first survey, *Physical Activity Behavior* questions began with, "In the past 7 days..." However, there is no way to know what a person may have gone through in the past seven days that could have influenced their exercise behavior. Thus, in the second survey, the wording of these questions was changed from, "In the past 7 days," to "On average, how many times do you" to more accurately represent what a "normal" week looked like in terms of physical activity. In addition, although Survey 1 asked about their exercise behavior, it did not ask specifically if students were exercising to cope with stress. Thus, in Survey 2, we added an additional questionnaire to assess why students were exercising. The reason for the addition of the second study was due to the confusion the wording of the questions may have brought. The second study was used to get a more accurate representation of what "normal" exercise behavior looked like for the participants.

Survey 1

Participants. All Introduction to Psychology students at Boise State University were invited to participate in this study. One hundred fifty-two students participated in the study. The demographics for this specific population were

not collected. Based off the demographics of the university, the sample was most likely predominantly female, with approximately 65% freshmen (18-20 years of age). Participants were recruited through the Introduction to Psychology students subject pool, and the students received course credit for their participation. The study was administered online using Qualtrics, and all participants were tested individually with no time limit. Participants answered questions from Bland et al.'s (2014) A Quantitative Assessment of Stress Tolerance.

Life events. This portion of the survey consisted of 30 statements that were answered on a Yes/No scale (Bland et al., 2014). The participants were asked to answer "Yes" or "No" based on if the life event had happened to them in the past 12 months. A few examples include, "Beginning college," "Currently failing a class," and "Working while attending school."

Daily hassles. Forty statements were used in this portion of the survey, which were also answered on a Yes/No scale (Bland et al., 2014). Participants were asked about events they could encounter on a daily basis and if they had experienced it in the past month. A few examples of the daily hassles statements include, "Lack of finances for school, i.e., books," "Pressure to do well in school/parental expectations," and "Balancing social and school commitments."

Coping mechanisms. This section consisted of 31 different ways of coping with stress (Bland et al., 2014). These too were answered on a Yes/No scale based on if the individual had participated in such coping behaviors during the past two weeks. All four types of coping mechanisms were represented in at least one statement. Examples include, "Prayed before stressful situation" (approach coping), "Engaged in social interaction" (avoidant coping), "Wrote in a journal" (problem-focused coping), and "Used a substance, like alcohol, to deal with feelings or avoid problems" (emotion-oriented coping).

Physical activity behavior. Only four questions were used to ask about the participants' exercise behavior (Bland et al., 2014). The questions did not specifically ask if the participants participated in physical activity as a coping mechanism, just about their physical activity in general. Questions were answered on a 5-point scale based on how often they participated in the exercise behavior in the past 7 days (0 days, 1-2 days, 3-4 days, 5-6 days, 7 days). One of the four questions was, "In the past 7 days, how many times did you exercise to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?"

Results

The three most commonly used coping strategies were sleeping (92%), listening to music (94%), and social support (93%). On average, students only exercised one to two days per week. Given their level of inactivity, it is not surprising that we found no correlation between stress from major life events and physical activity, or between stress symptoms and reported physical activity. We found a slight positive correlation between physical activity via stretching and daily hassles, $r = .16, p < .05$, and between activity via weightlifting and daily hassles, $r = .16, p < .05$.

Survey 2

Participants. Three hundred twelve students participated in the study second survey. The demographics during the second study were collected. The participants had an average age of 19.90 years ($SD = 4.81$). In Study 2, 75.00% ($N = 219$) were freshman, 13.01% ($N = 38$) sophomores, 7.88% ($N = 23$) juniors, and 3.77% ($N = 11$) seniors. The majority of our participants were female (74.32%; $N = 217$), with males making up 25% ($N = 73$), and transgender 0.68% ($N = 2$). Caucasians made up 78.69% ($N = 229$), Latino 8.59% ($N = 25$), Other 5.50% ($N = 16$), Asian/Asian American 3.44% ($N = 10$), African American 2.75% ($N = 8$), and Native American/Pacific Islander 1.03% ($N = 3$). Participants were recruited through the Introduction to Psychology students subject pool, and the students received course credit for their participation. The study was administered online using Qualtrics, and all participants were tested individually with no time limit. Once again, participants answered questions from Bland et al.'s (2014) A Quantitative Assessment of Stress Tolerance. The measures were identical to that of Study 1 except where noted below.

Physical activity behavior. Only four questions were used to ask about the participant's exercise behavior (Bland et al., 2014). The questions did not specifically ask if the participants participated in physical activity as a coping mechanism, just about their physical activity behavior in general. Questions were answered on a 5-point scale based on how on average of how often they participated in the exercise behavior (0 days, 1-2 days, 3-4 days, 5-6 days, 7 days). One of the four questions was, "On average, how many times per week do you exercise to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?"

Reason for exercise. For Survey 2 we added in an additional scale to examine the reasons for exercise, using the Exercise Motivations Inventory (EMI-2). This scale consisted of 52 items that were scored on a 6-point Likert scale (0=Not At All True For Me, 5=Very True For Me). A few examples include, "To lose weight," "To help manage stress," and "Because I find physical activities fun, especially when competition is involved."

Results

The four most commonly used coping strategies were sleeping (87.7%), social interaction (87.7%), listening to music (92%), and social support (93.5%). On average, students only exercised one to two days per week. There were no correlations between physical activity and stress.

Discussion

The purpose of this study was to determine the effectiveness of physical activity as a coping mechanism in college students. I hypothesized that students who participated in more physical activity would score lower on stress scales than students who did not. Unfortunately, our participants were too inactive to be able to assess this hypothesis. Having no correlation between physical activities and stress was no surprise given the high levels of inactivity. With the changing of the wording of the questions from Survey 1 to Survey 2, I was hoping to get better results, but I instead received the opposite. Survey 1 had two correlations between daily hassles and stretching and daily hassles and weight lifting, whereas Survey 2 had no correlations between any stressor or any form of physical activity.

Limitations and Future Directions

Given that the majority of the participants of the study were all students in Introduction to Psychology, this could have influenced how the questions were answered. As with all self-report surveys, the answers are only as true as the participants wanted them to be. The participants could have been answering the way they felt was "correct" even if the answers were not true for them personally. After completing this study, I found the problem is not the use of physical activity as a coping mechanism, but that our undergraduate population is living a very sedentary lifestyle. Future research needs to be done on why our undergraduate population so inactive and what we can do to improve activities levels.

References

- Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., & Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of Affective Disorders, 173*90-96.
- Bland, H. W., Melton, B. F., Bigham, L. E. & Welle, P. D. (2014). Quantifying the impact of physical activity on stress tolerance in college students. *College Student Journal, 48*(4), 559-568.
- Brownson, Ross C. (2005). Declining rates of physical activity in the United States: What are the contributors? *Annual review of public health, 26*(1), p. 421.
- Carver, C. S., & Scheier, M. F. (1994). Situational coping and coping dispositions in a stressful transaction. *Journal of Personality and Social Psychology, 56*, 267-283.
- Centers for Disease Control and Prevention. (2017, February 1). *How much physical activity do you need?* Retrieved from <http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html>

- Chao, R. C. (2012). Managing perceived stress among college students: The roles of social support and dysfunctional coping. *Journal of College Counseling, 15*(1), 5-21.
- Dinger, M. K., Brittain, D. R., & Hutchinson, S. R. (2014). Associations between physical activity and health-related factors in a national sample of college students. *Journal of American College Health, 62*(1), 67-74.
- Dishman, R. K. (1995). Physical activity and public health: mental health. *Quest (00336297), 47*(3), 362-385.
- Donaldson, S. J., & Ronan, K. R. (2006). The effects of sports participation on young adolescents' emotional well-being. *Adolescence, 41*(162), 369-389.
- D'Zurilla, T. J., & Sheedy, C. F. (1991). Relation between social problem-solving ability and subsequent level of psychological stress in college students. *Journal of Personality And Social Psychology, 61*(5), 841-846.
- Flueckiger, L., Lieb, R., Meyer, A. H., Witthauer, C., & Mata, J. (2016). The importance of physical activity and sleep for affect on stressful days: Two intensive longitudinal studies. *Emotion, 16*(4), 488-497.
- Thome, J., & L. Espelage, D. (2004). Relations among exercise, coping, disordered eating, and psychological health among college students. *Eating Behaviors, 5*(4), 337-351.
- Straub, R. O. (2014). *Health Psychology*. New York, NY: Worth Publishing.
- University of Florida. (N.D.) *Stress and College Students*. Retrieved from <http://www.counseling.ufl.edu/cwc/stress-and-college-students.aspx>
- Welle, P. D., & Graf, H. M. (2011). Effective lifestyle habits and coping strategies for stress tolerance among college students. *American Journal of Health Education, 42*(2) 96-104.