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A SHORT STRESS COPING INTERVENTION IN FEMALE COLLEGIATE STUDENT-ATHLETES

by

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Thesis submitted in partial fulfillment of the requirements for the degree

of

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In the Department of Psychology

Approved:

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Abstract

This research examines the effect of a stress coping based intervention in the lives of female student-athletes. Sixteen female student-athletes attending Utah State University participated in a 60 minute intervention teaching skills such as progressive muscle relaxation, stressor identification, and stress coping. Participants completed the Inventory of College Students' Recent Life Experiences before and after the intervention. The scores collected from the inventory were used to determine whether the intervention had a significant impact on the amount of perceived stress in their lives.

The findings suggest that those who participated in the 60 minute intervention experienced no change in their perceived stress levels while the control group, which did not participate in the intervention, experienced increased levels of perceived stress. The implications of using a more comprehensive intervention are discussed. Suggestions for future research in this area are also presented.

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A Short Stress Coping Intervention in Female Collegiate Student-Athletes

Introduction

Several studies have documented the impacts of stress on college students as being positive, negative or a combination of both. Collegiate student-athletes experience a substantial amount of stress because they are trying to balance the demands of higher education with other competing aspects of their lives. Although everyone is affected differently by stress, lack of sleep, financial burdens, academics, and demands from extracurricular activities have been identified to have the greatest impact on the college population (Wilson, 2005). The stress resulting from these can have a potentially negative impact in the lives of student-athletes.

Collegiate student-athletes are a unique subpopulation that experiences the same stressors as other college students as well as unique stressors that come from their dual role of student and athlete. Student-athletes are often characterized or stereotyped as being "dumb jocks" and academically at risk (Harrison, 2009). There have been studies exploring the role of stereotyping and student-athletes. However, there have been very few studies documenting the negative effects of stress on student-athletes' academics, mental well-being, and physical well-being. There has also been even less research on the effect of a stress coping intervention in the lives of student-athletes. The majority of the literature suggests that if stress is not managed properly it may lead to burnout and play a negative role in their lives. A better understanding of the direct effect of stress in the lives of student-athletes and what role a stress coping intervention could play could greatly benefit them. Previous research has shown that helping student-athletes cope with stress has been beneficial and increased their mental and physical well being. This previous research functions as a good foundation to develop an intervention specifically designed to teach student-athletes how to successfully manage stressors that negatively impact their lives.

There has been a little research on the effects of stress in the lives of student- athletes. The studies have shown that, for the most part, female and male student-athletes experience the same type of stress. While the gender differences between males and females are minimal, there is a lack of research on how female student-athletes could benefit from an intervention program.

The purpose of this current research was to examine the impact of a stress coping intervention on female student-athletes' perceived levels of stress. Stress levels were first assessed using the Inventory of College Students' Recent Life Experiences. Then, some of the subjects participated in a brief intervention. The same inventory was given again after they participated in the intervention. The perceived stress levels were measured before and after implementation of the intervention in order to determine whether a significant change took place. The results from those who participated in the intervention were compared to a control group to show whether there was an actual difference or if it was incidental.

Review of the Literature

Defining stress

College students experience stress frequently. Stress is defined as the consequence of the failure of an organism to properly respond to emotional or physical stimuli, whether actual or imagined (Selye, 1956). Everyone encounters stress stimuli frequently but how they perceive these is what makes the difference. Lazarus (1966) suggested that stimuli are perceived as stressful only when they are appraised as such. This leaves the possibility for a stressor to be perceived as negative or positive. Studies have examined stress as both a positive and negative event.

Sources of stress

Stressors perceived by student-athletes that may lead to psychological and physiological problems are: time management, burnout, fear of failure, anxiety, depression, and self-esteem (Wilson, 2005). Demands from extra-curricular activities and lack of sleep were also stressors that were reported at a significant rate unique to student-athletes. These were not reported as frequently in the non-athlete sample (Wilson, 2005).

Other sources of stress in first year student-athletes were studied by Giacobbi, Lynn, Wetherington, Jenkins, Bodendorf, and Langley (2004) through a qualitative case study. They followed five first year swimmers through the season and conducted focus groups, and individual interviews with each swimmer. Their goal was to determine what stressors each had in common with the others. They found that there were five general dimensions of stress experienced by each swimmer. These dimensions are training intensity, high performance expectations, interpersonal relationships, being away from home, and academics. Coping methods were also discussed with the athletes. The most frequently used method was social support from friends and family, followed by active cognitive efforts, emotional release, and religion. These results shed light on the dynamic nature of coping processes and on sources of stress specifically in first year student-athletes.

Papanikolaou, Nikolaidis, Patsiarouras, and Alexopoulos (2003) also examined different origins of stress in collegiate athletes. They focused on freshmen student-athletes and their transition to college life identifying several key stressors that are involved with this transition and also their impact on academics. These stressors are changes in lifestyle, social groups, and environment, the threat of losing their stardom as an elite athlete, frustration with a new program, and conflict with team members or coaches.

Negative consequences of stress

The negative consequences of stress can range from mild irritation and discomfort to extreme burnout and exhaustion (Lazarus, 1966). Dill and Henley (1998) measured the influence of stress in traditional and non-traditional students. The study used questionnaires to evaluate which items were more stressful to the respective sample groups. For the traditional students (those who entered the university immediately following high school) the main stressors were school performance and peer events. "Traditional students worried about school performance more frequently than the non-traditional students did" (Dill & Henley, 1998, p. 28). Along the same lines Wilson (2005) compared the stressor differences between freshmen non-athletes and student-athletes. He found that when it comes to academics, non-athletes and student-athletes do not differ in stress levels.

Hudd, Erdmann-Sager, Murray, Phan, and Soukas (2000) examined stress levels and effects of stress on health in college students. They administered a survey to 145 college students. They found that females and non-athletes are more likely to be stressed. They also found that students are less likely to practice healthy behaviors and are more prone to bad habits compared to the general population. Students under greater stress also exhibit lower levels of self-esteem and reduced perceptions of their own health. Consumption patterns of those who are more stressed showed that they ate more junk food and drank alcohol once or more each week. Those who had higher levels of perceived stress were less likely to exercise regularly. They also found a correlation between high stress levels and reduced self-worth, "however, whether stress is a by-product of poor academic performance and lower levels of fitness" is unclear (Hudd et al., 2000, p7).

Student-athletes experience a unique type of stress, which non-athletes do not experience. Ten percent of college athletes suffer from psychological and physiological problems; stress has been implicated by Hinkle (1994) to be a contributing factor. These problems are severe enough that athletes seek professional counseling (Hinkle, 1994). When athletes reach high levels of stress, it is often recommended that they seek professional counseling because it can lead to severe burnout.

Burnout

Burnout is defined as long-term exhaustion and diminished interest in specific areas of life caused by a depletion of the body's resources and the inability of the body to maintain normal functioning (ICD-10, 1994). High stress levels that require professional counseling are often accompanied by burnout, which can lead to lower academic achievement. Burnout was examined in detail by Chen, Kee, and Tsai (2009), who studied perfectionism in student-athletes as a potential predictor of burnout. The information was gathered from students in Taiwan at a private university. The results showed that perfectionism wasn't always a predictor of burnout, but that it depends on the student-athlete's view of their perfectionism. Athletes reporting high levels of perfectionism, who adopted a maladaptive style of coping, were more susceptible to burnout and other problems. The culture of student-athletes in Taiwan should also be considered, when looking at burnout, as it is different than that in the United States.

In 2010, Dubuc, Schinke, Eys, and Battochio conducted a case study on three female adolescent gymnasts. They examined the burnout process and described the contributors and symptoms of burnout. They found that common contributors to burnout were the physical demand of the sport, injuries, and maintaining balance in their lives between school, training, and social aspects. The symptoms that they found were consistent with the general model of

burnout. The symptoms were difficulty sleeping, decreased motivation, lack of focus, irritability, and making excuses for poor performance. The study also documented how each gymnast's experience of burnout was unique in relation to its causes. A common area in causation for each gymnast was the nature of them being a student and an athlete.

Dual role

A stressor unique to student-athletes is balancing a dual role of being both a college student and an athlete engaged in a highly competitive environment. Settles, Sellers, and Damas (2002) conducted a study on the dual roles of student-athletes and concluded that the student-athletes who learn to separate their roles do not have a negative impact on their well-being. Student-athletes who don't separate their roles, but view themselves as both a student and an athlete together have a lower level of well-being. Those who do not separate their roles often reach an imbalance in each area which results in role confusion and creates stress. The strength of the study is that it used a large and diverse sample making it easier to generalize to a larger population.

Miller and Kerr (2002) also examined the different roles that student-athletes balance in their lives. The domains that student-athletes must balance are divided into three sections: social, academic, and athletic. When too much attention is placed on one section the other two are neglected and are negatively affected. For example, if the athlete focuses solely on sports then academic performance will worsen and social relationships will decrease in quality. Miller also brings in the concept of commercialization, or the opportunity for student-athletes to move on into the pro leagues for their sport. The time demand of their sport at this competitive level creates the inclination to neglect their academic domain and focus on their athletic domain only.

The danger in this is that if they are not recruited to the pro league, then they are often left with a very poor academic career that leads to a dead end.

Positive consequences of stress

There are several articles which suggest that student-athletes benefit from their multiple roles. One study hypothesized that being a student-athlete would have a negative impact and lead to higher levels of stress (Kimball & Freysinger, 2003). The results contradicted the original hypothesis. Those athletes who maintained control over their roles and situation benefited from being involved with athletics and it helped raise their levels of self-esteem.

Hudd et al. (2000) studied the relationship between levels of wellbeing and stress within leisure participants. Researchers obtained information, using questionnaires, about life events that are perceived as stressors. The information was then correlated with self-reported health habits and perceptions. A positive correlation was found between reported wellbeing and amount of time devoted to leisure activities such as athletics. This study suggests that participation in leisure activities reduces stress levels and promotes wellbeing. This study did contain some bias in selection. Freshmen students and student athletes comprised a small minority of the sample group. Upperclassmen comprised the majority of the sample, which has the potential confounding variable of them already being adjusted to the college lifestyle and stressors that accompany it.

In a period of stress, people experience negative and positive emotions that can facilitate helpful coping strategies that actually benefit or motivate the individual (Folkman & Moskowitz, 2000). This supports the idea of positive stress, meaning that college students need a certain level of stress to stay motivated and perform to their fullest extent. Also, Folkman and Moskowitz (2000) suggested that this stress can help trigger coping strategies such as relaxation,

positive reappraisal, and the creation of positive events. These strategies serve as a buffer between stressors and the student. However, because this study was simulated, realism is hard to determine. Suggestions were made to conduct the same sort of study in the field as a correlational design to observe the impacts of stress in lives of college students. The study mentioned that negative stress also plays a role, but did not attempt to measure its influence.

Wilson (2005) showed that student-athletes benefit in ways that non-athletes do not. They benefit from an increased help with adjustment to college life and rarely have to worry about finances. It should be noted that this only applies to some groups of student-athletes; others don't attend school on a scholarship and still need to find a way to earn money. They also reported lower levels of stress concerning physical appearance and lack of attention. Student-athletes would not suffer in this area because they are generally in good shape and are often in the spotlight around campus.

Student-athletes also benefit from the support groups they form in athletic participation. Leisure by itself does not buffer life stresses but the social support that comes from leisure groups acts to buffer stress (Iso-Ahola & Park, 1996). When athletic participants fail to connect with their group a negative impact on their levels of stress and wellbeing is found.

Gender differences

An important area to examine is any possible gender differences in perception of stress amongst collegiate student-athletes. While a few studies have been focused specifically on gender differences, most studies only look at it as a side note for discussion purposes. One study that focused specifically on gender differences and stress coping was done by Crocker and Graham (1995). They used lack of goal attainment as the measure of stress. They report that females used higher levels of seeking social support and increasing effort to manage goal

frustration to cope with stress. They found that males are less likely than females to use problem-focused coping mechanisms, which was contrary to much of popular belief. Both males and females reported using problem-focused coping and self-blame coping at a high rate. It hypothesized that this is from the competitive nature of athletics experienced by both males and females.

Hudd et al. (2000) found gender differences in their study of the effects of stress on self-esteem and health habits. They found that the majority of females expressed feeling stress often, while a minority of males expressed this. The study suggests that high stressed females are more likely to practice poor health habits, and have a lower perception of self-esteem.

Help seeking

In Wilson's (2005) study it was found that "almost half of athletes interviewed indicated that stresses associated with sport participation, such as pressure to win, excessive anxiety, frustration, conflict, irritation and fear significantly affected their mental health" (p. 1-2). It is also mentioned that college students tend to avoid seeking help from professionals. This phenomenon is explained in Steinfeldt, Steinfeldt, England, and Speight's (2009) study on college football players in help seeking behaviors. The empirical study concluded that male football players have a higher level stigma toward seeking professional help with problems such as stress. It is also suggested that male athletes were less likely to seek help out of fear of being looked on as less masculine. The limitations of the study are that the surveys were administered during spring practice which did not have any seniors present so the survey consisted of mostly lower classmen.

Benefits of an intervention

The purpose of implementing an intervention with the student-athlete population would be to help them better cope with the demands of higher education, their dual role, and every day stressors. The outcomes of various interventions with student-athletes have shown positive results. Several different approaches have been taken to assist this specific population. Harris, Altekruse, and Engels (2003) used psychoeducational groups with freshman student-athletes in an attempt to help them better adjust to the demands of university life. In this intervention students were taught how to set proper goals, how to stay motivated, how to recognize and deal with stress, how to manage their time properly, and to maintain a balance between their academics, athletics, and social lives. The course yielded positive results in that student-athletes reported lower levels of stress after having participated and also adjusted to the college life faster than those student-athletes who did not participate. Stress was measured by a self-report inventory given before and after completion of the intervention.

Using the same general strategy, Allen (1988) designed a course to teach coping skills to student-athletes. These skills included imagery, positive self-talk, and goal setting. They then had opportunities to practice these skills in a more applied setting. Both upper and lower classmen participated in this course. The most significant results came from the lower classmen. This is explained as upper classmen have already adjusted to the college lifestyle and they are least likely to benefit through adapting to a new learning style. The effects of the intervention on stress levels had the largest impact. The study demonstrates that a school program, designed to aid student-athletes in learning skills that alleviate stress, can make a difference.

A descriptive study examined ways that sport counseling may be improved to help athletes better manage their stress and avoid turning to harmful ways of coping such as drugs and

alcohol (Hinkle, 1994). The main conclusion is that all athletes would benefit from learning how to identify stress and the efficient ways to deal with it. It is suggested that athletes undergo a course on stress management during their first semester of college.

In a 10 year case study Whitner (1986) describes in detail a student-athlete academic support program and makes suggestions to improve the program. The recommendations are as follows:

> Teach time and environmental management, provide traditional study skills instruction, identify and provide information about various university resources and how to use them, furnish information and instruction about how to use the university's academic literature, provide counseling for academic or personal concerns, assist in pre-diagnosis of possible learning disabilities or interferences, link the marginally prepared student-athlete with the appropriate university developmental and remedial programs, provide program participants with liaison services (Whitner, 1986, p. 671).

Although the information is considerably dated and academically focused it may still be useful to incorporate into program development. The more comfortable student-athletes are academically the lower their stress will be.

Kerr and Leith (1993) conducted a study using a stress management program with an experimental and control group. They found that the group who participated in the stress management program improved in their athletic performance more than their peers who did not participate in the program. There was also an increase in competitive anxiety levels for the experimental group. It is hypothesized that this is because of an increase in facilitative rather than debilitative anxiety. While the study did not document the effect of a stress management

program on perceived levels of stress, the implications of improved athletic performance are very important.

There is an apparent need for an intervention or instructional course about stress coping for student-athletes. An intervention that could be implemented specifically for this population to moderate major stressors would be very beneficial. While some literature suggests that stress plays a positive role in the lives of student athletes, the majority of it suggests that stress, if not dealt with properly, can play a negative role and lead to lower self-esteem, lower physical and mental well-being and lower academic performance.

If a course or intervention was designed focusing on the needs of this specific population and using the recommendations of previous studies, the findings could assist collegiate athletic programs and better support their athletes. Once student-athletes learn to recognize negative stress and learn to effectively deal with it they will succeed more as a student and as an athlete. If a program was shown to be successful and could easily be used at a national level then it would be possible to build off that program in the future. The literature generates the question of what potential outcome a stress focused intervention could have in the lives of student-athletes.

Progressive Muscle Relaxation

Progressive Muscle Relaxation (PMR) is a method often used to help people relax and control their anxiety. The concept behind PMR is that when attention is paid to each muscle group and that group in tensed then relaxed the difference in feeling generates a sense of relaxation. PMR has widespread usage from clinical counseling to sports psychology. The benefits of using PMR have been documented in many studies.

McCallie, Blum, and Hood (2006) analyzed the development of PMR, reviewed current research and discussed the implications of PMR in social work. They suggest that almost anyone

can benefit from implementation of PMR in their lives as a regular event. PMR is often prescribed in combination with other treatment methods ranging from cognitive behavioral therapy to patients experiencing chronic pain. The main advantage in using PMR is that it is very easy to teach and learn and also requires a minimal time commitment each day. The specific method of PMR can also be adapted to fit the needs of the individual. McCallie, Blum, and Hood (2006) argue that the implementation of PMR in social work could be very beneficial but that there is not any research to support it.

In 2001, Matsumoto and Smith compared the psychological effects of PMR and breathing exercises in a clinical setting. Using an experimental and control group they documented the effects of PMR using a Relaxation States Inventory. They found that PMR participants scored higher on disengagement, mental quiet, and joy scales. Breathing participants scored higher on strength and awareness scales. They suggest that PMR should be practiced for five weeks in order to obtain the greatest benefit. Their conclusion is that PMR and breathing exercises be practiced in unison.

Methods

This study is a test-intervention-retest design with the goal of determining whether a brief intervention can have a significant impact on perceived levels of stress. The score from the Inventory of College Students' Recent Life Experiences (ICSRLE) (Kohn, Lafreniere & Gurevich, 1990) (Appendix A) will serve as the dependent variable. The independent variable will be whether the student-athlete participated in the intervention or not.

Participants

The target sample size was 30 female student-athletes, but due to availability and subject dropout it consisted of 16 female student-athletes from the Track and Field team at Utah State

University. The sample size is smaller than anticipated but still large enough to determine whether the intervention has potential for having a beneficial effect. The participants ranged from 18-25 years old. Their ethnicity was mainly Caucasian but also included mixed ethnicities. Participants were recruited through their coaches. All participants volunteered to participate and signed an informed consent (Appendix C) form prior to the research.

Participants were told that they would be completing an inventory that assessed their level of perceived stress. They would then participate in an hour long intervention that would focus on stress identification, coping skills, progressive muscle relaxation and visualization. A week after completing the intervention they would complete the inventory one more time. All the participants were also informed of the possible risks of the study, the risks being minor social discomfort and loss of confidentiality.

Procedures

Once participants had signed the informed consent they were administered the first version of the ICSRLE (Appendix A). The actual content of the ICSRLE remains unchanged but demographic questions have been added by the current researchers. Participants were identified by the last 4 digits of their student ID numbers, so that the scores were not linked to the participants' names. Once all participants completed the inventory they were randomly assigned to either the control or experimental group. This was done by placing a small mark in the top left corner of the inventory. Exactly half of the inventories had this small mark on them and they were randomly shuffled in with the plain inventories. The participants who completed the inventory with the mark on them were told, after completion, that they would need to attend the brief intervention. Email addresses were collected from the participants in order to establish a group meeting time.

The completed ICSRLE's were scored according to instructions provided by Kohn, Lafreniere, and Gurevich (1990). The scores were entered into a spreadsheet along with demographic data for each participant. The demographic data included year in school (freshman, sophomore, junior, or senior), age range (18-21, 22-25, 26+), and ethnicity.

After two weeks the participants who were randomly selected to attend the brief intervention met with the student-researcher who conducted the one hour session. The student-researcher volunteers in the REACH Peer program under the guidance of Utah State University Counseling and Psychological Services. This program trains undergraduate students how to teach skills such as progressive muscle relaxation, visualization, and distress tolerance to other students.

The student researcher began the training session with discussing how to identify stressors in one's life. The material was taken from a distress tolerance training packet assembled by Utah State University Counseling and Psychological Services, which relies on Dialectical Behavioral Therapy Skills Training by Linehan (1993). First the environmental, interpersonal, and intrapersonal sources of stress were discussed. Then participants were taught to recognize physical, behavioral, and emotional symptoms of stress. Next the student-athletes were taught deep breathing techniques and how to use progressive muscle relaxation. The progressive muscle relaxation script used was taken from The Anxiety & Phobia Workbook by Bourne (2000). Preliminary analysis of participants' data was also discussed with them. This included the top seven stressors reported by the sample. Finally they were taught crisis survival strategies using the five senses (Linehan, 1993) and how they could be implemented into daily life. After the skills teaching portion participants were given the opportunity to ask questions or

request additional practice material. They were instructed to practice the skills they were taught and encouraged to implement them on a daily basis.

One week later participants completed the second version of the ICSRLE (Appendix B). All the original questions of the ICSRLE were retained between versions but other demographic information was added, that being marital status in place of ethnicity. The inventory also asked whether they participated in the intervention or not. Once the inventories had been completed the student-researcher collected all of them and debriefed the participants. The debriefing consisted of answering questions and informing participants of their right to learn the outcome of the study once all the analyses had been completed.

Timeline

Recruitment of participants began during the first two weeks of spring semester by contacting coaches of the various teams to find a team that would be willing to participate. The first meeting and completion of ICSRLE v1 happened during the 8th week of the spring semester. The hour long skills training intervention took place two weeks later during the 10th week. The administration of ICSRLE v2 and debriefing occurred one week later during the 11th week.

Measures

The Inventory of College Students' Recent Life Experiences (ICSRLE) was developed by Kohn, Lafreniere, and Gurevich (1990). ICSRLE was designed to identify individual exposure to sources of stress in a college student's life and to assess the extent to which those stressors are experienced over the past month. This inventory consists of 49 items which were selected on the basis of having significant correlations against the Perceived Stress Scale. Alpha reliabilities between these two scales were very high. The alpha for the entire ICSRLE scale was .922 (Osman, Barrios, Longnecker & Osman, 1994). The advantage of using ICSRLE over the

PSS is that it is specifically designed for the sample (college students) that was used in this study.

Data Analysis

To measure the relationship between the ICSRLE scores before and after the intervention, a two level repeated measures ANOVA was used to determine whether a statistically significant difference existed. This allowed the researcher to conclude whether the brief stress coping intervention had a significant effect on the amount of perceived stress in the lives of the female student-athletes or not. The means of each group, before and after the intervention, were also calculated for additional comparisons.

Results

The purpose of this study was to determine whether a brief stress coping intervention would have any significant impact on the reported stress scores of female student-athletes. Using a two level repeated measures Analysis of Variance there was no statistical relationship found between implementation of the intervention and reported stress scores. This is likely due to the small sample size. When comparing the averages of the control and experimental groups' pre and post intervention there is an interesting interaction. The averages of the experimental group before and after the intervention were 54.9 and 54.1, respectively. The averages of the control group before and after the intervention were 56.5 and 61.5, respectively. The table and figure below illustrate this interaction.

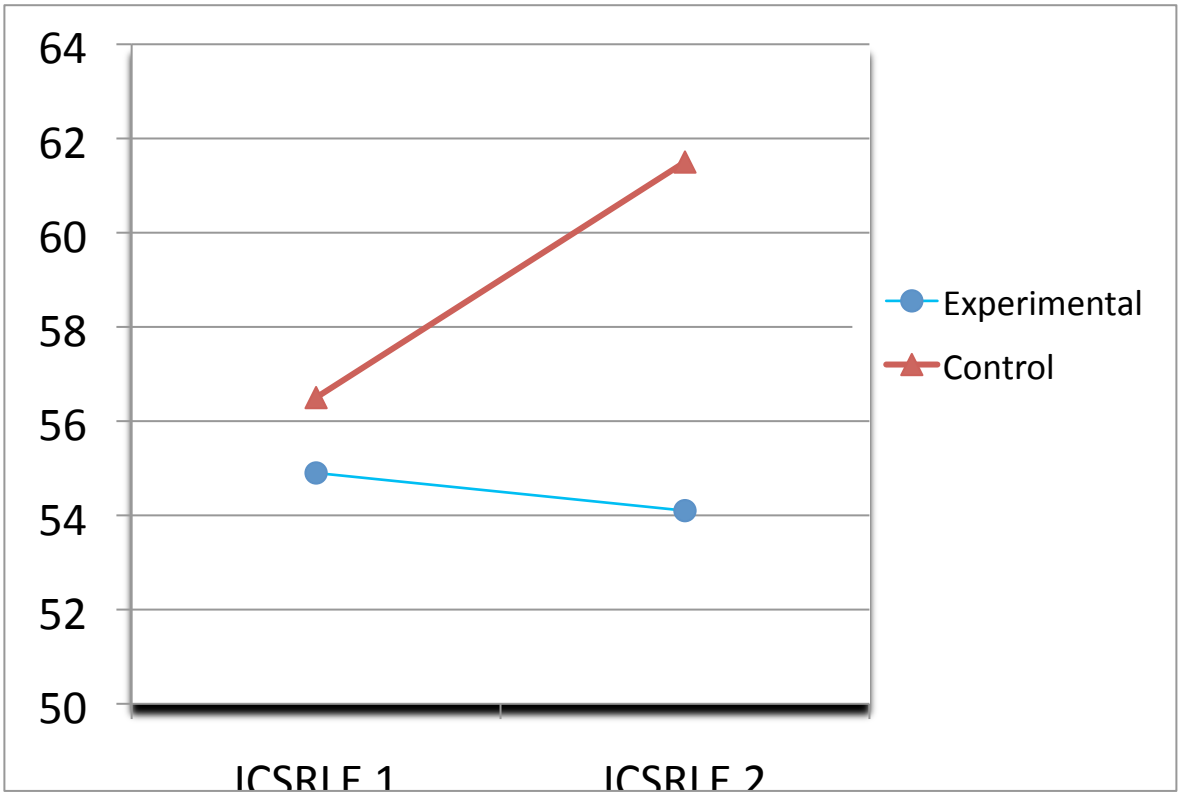
Table 1

Averages of Control and Experimental Groups

Control Group (No Intervention)		Experimental Group (Intervention)	
ICSRLE 1	ICSRLE 2	ICSRLE 1	ICSRLE 2
56.5	61.5	54.9	54.1

Figure 1

Graph of Averages of Control and Experimental Groups



The average of the control group's scores rose by five while the average of the experimental group's scores remained relatively the same. This suggests that the intervention does not reduce the amount of stress experienced by the female student-athletes but it does prevent them from experiencing an increase in stress or helps them maintain the current levels.

Another finding to note is that by doing an item analysis it was possible to see which areas are reported as the most stressful for the student-athletes. The top six reported areas from ICSRLE v1 were: a lot of responsibilities, too many things to do at once, heavy demands from extracurricular activities, important decisions about your future career, struggling to meet your own academic standards, and dissatisfaction with your athletic skills. The top six reported areas from ICSRLE v2 were: too many things to do at once, a lot of responsibilities, heavy demands from extracurricular activities, lower grades than you hoped for, important decisions about your career future, and struggling to meet your own academic standards. Many of the items overlap on both lists showing a strong correlation between the first administration and the second administration of the ICSRLE. These findings also support previous research on the sources of stress in the lives of student-athletes.

While there was nothing of statistical significance found in this study the results do show that a stress coping intervention has possible benefits in the lives of student-athletes. It also explores the specific sources of stress in the lives of female student-athletes and adds validity to previous research. The difference between the averages in the control and experimental groups suggest that the intervention was effective and given a bigger sample may have been statistically significant.

Discussion

The intent of this study was to examine the effect a brief stress coping intervention could have in the lives of female student-athletes. This is important because previous research has documented that student-athletes have a significant amount of stress in their lives and are often not equipped to deal with high levels of stress. Some items that could improve on this current

research are a larger sample size, a more comprehensive intervention, a follow up on skills training, and demographics.

Sample Size

The target sample size for this study was 30 participants but due to subject availability only 17 participants were obtained. There was one participant who dropped out and did not complete the second ICSRLE. The participant's data was thrown out and not included in data analysis. The sample size of this study was relatively small consisting of 16 participants. Based on the interaction of the averages of both groups it is possible to see that there was a difference between them. However, there was no statistical significance detected by a repeat measures two level Analysis of Variance. This is likely due to the small sample size. It's possible that if a larger sample size were obtained, statistical significance may be found. The other problem with a small sample size is that one person's scores can heavily influence the results.

Intervention

A longer and more comprehensive intervention should be considered for future research. The current research lasted four weeks total, with only one 60 minute intervention. Matsumoto and Smith (2001) suggest that Progressive Muscle Relaxation should be practiced for five weeks before the maximum effects can be seen. There was also a lot of information about stress and coping skills that could not be conveyed in 60 minutes. All of the previous research has used longer interventions with student-athletes.

Demographics

All participants were randomly assigned to either the control group or the experimental group. Despite random assignment there were more upper classmen (juniors or seniors) in the

control group. The control group consisted of four upper classmen and two lower classmen. The experimental group consisted of two upper classmen and eight lower classmen. The implications of this are that upper classmen are often in harder classes than lower classmen. However, they are often more adjusted to the college lifestyle and don't have the stress of transitioning to college life. Research needs to be done on the differences between the classes and their levels of stress to further explore this.

Conclusion

Although there was no statistical significance found in this study the implications are important. The differences between the experimental and control groups' ICSRLE scores suggest that there is a benefit in using stress coping interventions with female student-athletes. The effect of a brief intervention implies that a more comprehensive intervention could have an even larger effect. This study serves to validate previous studies by identifying sources of stress and serves as a foundation for future research in the area of stress coping interventions with this unique population.

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APPENDICES

Appendix A

ICSRLE v1

Last 4 Digits of A# _____ Year in School_____

Age Range: 18-21 22-25 26+ Ethnicity _____

The following is a list of experiences which many students have some time or other. Please indicate for each experience how much it has been a part of your life over the past month. Mark your answers according to the following guide:

Intensity of Experience over the Past Month

0 = not at all part of my life

1 = only slightly part of my life

2 = distinctly part of my life

3 = very much part of my life

____1. Conflicts with boyfriend's/girlfriend's/spouse's family

____2. Being let down or disappointed by friends

____3. Conflict with professor(s)

____4. Social rejection

____5. Too many things to do at once

____6. Being taken for granted

____7. Financial conflicts with family members

____8. Having your trust betrayed by a friend

____9. Separation from people you care about

____10. Having your contributions overlooked

____11. Struggling to meet your own academic standards

____12. Being taken advantage of

____13. Not enough leisure time

____14. Struggling to meet the academic standards of others

____15. A lot of responsibilities

____16. Dissatisfaction with school

____17. Decisions about intimate relationship(s)

____18. Not enough time to meet your obligations

____19. Dissatisfaction with your mathematical ability

____20. Important decisions about your future career

____21. Financial burdens

____22. Dissatisfaction with your reading ability

____23. Important decisions about your education

____24. Loneliness

____25. Lower grades than you hoped for

____26. Conflict with teaching assistant(s)

____27. Not enough time for sleep

____28. Conflicts with your family

____29. Heavy demands from extracurricular activities

____30. Finding courses too demanding

____31. Conflicts with friends

____32. Hard effort to get ahead

____33. Poor health of a friend

____34. Disliking your studies

____35. Getting “ripped off” or cheated in the purchase of services

____36. Social conflicts over smoking

____37. Difficulties with transportation

____38. Disliking fellow student(s)

____39. Conflicts with boyfriend/girlfriend/spouse

____40. Dissatisfaction with your ability at written expression

____41. Interruptions of your school work

____42. Social isolation

____43. Long waits to get service (e.g., at banks, stores, etc.)

____44. Being ignored

____45. Dissatisfaction with your physical appearance

____46. Finding course(s) uninteresting

____47. Gossip concerning someone you care about

____48. Failing to get expected job

____49. Dissatisfaction with your athletic skills

Scoring the ICSRLE

Add your total points: _____

Your score on the ICSRLE can range from 0 to 147. Higher scores indicate higher levels of exposure to hassles. Focus on two key outcomes from your results. First, you can determine your current level of stress by adding your score for each hassle and getting a total. Second, you can discover which of the hassles play a greater part in your life. Higher scored items that you rated with a 3 indicate those stressors are more of an issue for you.

Appendix B

ICSRLE v2

V2 Did you participate in the stress training?_____

Last 4 Digits of A# _____ Year in School_____

Age Range: 18-21 22-25 26+ Marital Status _____

The following is a list of experiences which many students have some time or other. Please indicate for each experience how much it has been a part of your life over the past month. Mark your answers according to the following guide:

Intensity of Experience over the Past Month

0 = not at all part of my life

1 = only slightly part of my life

2 = distinctly part of my life

3 = very much part of my life

____1. Conflicts with boyfriend's/girlfriend's/spouse's family

____2. Being let down or disappointed by friends

____3. Conflict with professor(s)

____4. Social rejection

____5. Too many things to do at once

____6. Being taken for granted

____7. Financial conflicts with family members

____8. Having your trust betrayed by a friend

____9. Separation from people you care about

____10. Having your contributions overlooked

____11. Struggling to meet your own academic standards

____12. Being taken advantage of

____13. Not enough leisure time

____14. Struggling to meet the academic standards of others

____15. A lot of responsibilities

____16. Dissatisfaction with school

____17. Decisions about intimate relationship(s)

____18. Not enough time to meet your obligations

____19. Dissatisfaction with your mathematical ability

____20. Important decisions about your future career

____21. Financial burdens

____22. Dissatisfaction with your reading ability

____23. Important decisions about your education

____24. Loneliness

____25. Lower grades than you hoped for

____26. Conflict with teaching assistant(s)

____27. Not enough time for sleep

____28. Conflicts with your family

____29. Heavy demands from extracurricular activities

____30. Finding courses too demanding

____31. Conflicts with friends

____32. Hard effort to get ahead

____33. Poor health of a friend

____34. Disliking your studies

____35. Getting “ripped off” or cheated in the purchase of services

____36. Social conflicts over smoking

____37. Difficulties with transportation

____38. Disliking fellow student(s)

____39. Conflicts with boyfriend/girlfriend/spouse

____40. Dissatisfaction with your ability at written expression

____41. Interruptions of your school work

____42. Social isolation

____43. Long waits to get service (e.g., at banks, stores, etc.)

____44. Being ignored

____45. Dissatisfaction with your physical appearance

____46. Finding course(s) uninteresting

____47. Gossip concerning someone you care about

____48. Failing to get expected job

____49. Dissatisfaction with your athletic skills

Scoring the ICSRLE

Add your total points: _____

Your score on the ICSRLE can range from 0 to 147. Higher scores indicate higher levels of exposure to hassles. Focus on two key outcomes from your results. First, you can determine your current level of stress by adding your score for each hassle and getting a total. Second, you can discover which of the hassles play a greater part in your life. Higher scored items that you rated with a 3 indicate those stressors are more of an issue for you.

Appendix C

Institutional Review Board
9530 Old Main Hill, Suite 214
Logan, UT 84322-9530
Telephone: (435) 797-1821
Fax: (435) 797-3769

USU Assurance: FWA#00003308
Protocol # 2792

11/15/2010

SPO #:
AES #: UTA00

MEMORANDUM

TO: John Kras
Brett Steadman

FROM: Richard D. Gordin, Acting IRB Chair
True M. Fox, IRB Administrator

SUBJECT: A Short Stress Coping Intervention in Female Collegiate Student-Athletes

Your proposal has been reviewed by the Institutional Review Board and is approved under expedite procedure #7

X There is no more than minimal risk to the subjects.
There is greater than minimal risk to the subjects.

This approval applies only to the proposal currently on file for the period of one year. If your study extends beyond this approval period, you must contact this office to request an annual review of this research. Any change affecting human subjects must be approved by the Board prior to implementation. Injuries or any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Institutional Review Board.

Prior to involving human subjects, properly executed informed consent must be obtained from each subject or from an authorized representative, and documentation of informed consent must be kept on file for at least three years after the project ends. Each subject must be furnished with a copy of the informed consent document for their personal records.

The research activities listed below are expedited from IRB review based on the Department of Health and Human Services (DHHS) regulations for the protection of human research subjects, 45 CFR Part 46, as amended to include provisions of the Federal Policy for the Protection of Human Subjects, November 9, 1998.

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Appendix D

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UtahState University
Department of Psychology
2810 Old Main Hill
Logan UT 84322-2810
Telephone: (435) 797-2810

Full AAHRPP Accreditation

INFORMED CONSENT
Athletes' Struggle

Introduction/ Purpose Dr. John M. Kras (PI) in the Department of Health, Physical Education and Recreation and Brett Steadman (CO PI) in the Department of Psychology at Utah State University are conducting a research study to find out more about female student athletes' stress levels. You have been asked to take part because you are a female student athlete. There will be approximately 15 participants at this site. There will be approximately 30 total participants in this research.

Procedures If you agree to be in this research study, the following will happen to you.
1. You will be put into a group of 7 participants. The group will be lead by a group leader who is another student attending Utah State University.
2. You will be expected to complete the Inventory of College Students' Recent Life Experiences. This will require 15-30 minutes to complete.
3. You will be asked to participate in a 90 minute group meeting which will focus on stress coping.
4. Three weeks later you will again be expected to complete the Inventory of College Students' Recent Life Experiences.

New Findings During the course of this research study, you will be informed of any significant new findings (either good or bad), such as changes in the risks or benefits resulting from participation in the research, or new alternatives to participation that might cause you to change your mind about continuing in the study. If new information is obtained that is relevant or useful to you, or if the procedures and/or methods change at any time throughout this study, your consent to continue participating in this study will be obtained again.

Risks Participation in this research study may involve some minimal added risks or discomforts. These include:
1. Loss of Confidentiality
2. Minor Social Discomfort
However, there are no anticipated risks involved in this study.

Benefits There may or may not be any direct benefit to you from these procedures. The investigator, however, may learn more about developing an intervention that may benefit female student athletes cope with stress. The participant may benefit by learning more about stress and stress coping techniques such as relaxation, imagery, and positive self talk. The results may have a direct benefit on participants in the future.

Explanation & offer to answer questions Brett Steadman has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may reach Professor Kras at (435) 797-3881.

v6 8/27/2009

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10/28/2010

UtahState University
Department of Psychology
2810 Old Main Hill
Logan UT 84322-2810
Telephone: (435) 797-2810

INFORMED CONSENT
Athletes' Struggle

Voluntary nature of participation and right to withdraw without consequence Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits. You may be withdrawn from this study without your consent by the investigator if you are unable to participate in all of the surveys and group meetings.

Confidentiality Research records will be kept confidential, consistent with federal and state regulations. Only the Dr. John M. Kras (PI) and Brett Steadman (CO PI) will have access to the data which will be kept in a locked file cabinet in a locked room. Personal, identifiable information will be kept for the duration of the study until it can be converted into non-identifiable form. All identifiable information will be destroyed after completion of the study.

IRB Approval Statement The Institutional Review Board for the protection of human participants at USU has approved this research study. If you have any pertinent questions or concerns about your rights or a research-related injury, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu. If you have a concern or complaint about the research and you would like to contact someone other than the research team, you may contact the IRB Administrator to obtain information or to offer input.

Investigator Statement "I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered."

Signature of PI & student or Co-PI

Dr. John M. Kras Principal Investigator (435) 797-3881 *(john.kras@usu.edu)*	Brett Steadman Co-Principle Investigator *801-842-6001* *(brett.steadman@aggiemail.usu.edu)*

Signature of Participant By signing below, I agree to participate.

Participant's signature	Date

Appendix E

Author's Biography

Brett Steadman was born in Sandy, UT and lived there until he began attending Utah State University. He graduated from Alta High School in June 2006. He was awarded the Presidential Scholarship and the Undergraduate Research Fellowship during his first year at Utah State University. He participated in the Honors program all three years of attendance.

In the fall of 2006, Brett began researching with Dr. Tamara Ferguson in the Psychology department in the area of guilt induction. The following spring he presented the findings at the Utah Conference of Undergraduate Research. Brett finished his first year of university being on the Dean's list both semesters. The summer of 2007, Brett took a leave of absence for two years.

Upon returning from the leave of absence, in 2009, he resumed his academic studies and began doing research with Dr. Scott Bates in the area of student-athletes and study groups. During the next two semesters he investigated career options in detail and settled on Forensic Psychology as the emphasis for graduate school. During the spring semester Brett was accepted into the REACH Peer program through Counseling and Psychological Services. This provided him with the opportunity to get some applied experience in the area of Clinical Psychology. During his final two semesters he continued research on student-athletes and how stress affects their lives.

Brett will graduate with Honors in May 2011 with a Bachelor's degree in Psychology and minor in Russian. He will take one year off of school, while his wife finishes her own schooling, and find a job that will allow him to gain more experience in the field. He will begin applying to graduate programs in fall of 2011, in the area of Forensic Psychology, to earn a Ph.D.