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**The Assessment of NCAA Division I Student-Athletes' Perceptions of
Athletic Stress and the Carry-Over Effects into Academics**

**A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville**

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DEDICATION

This thesis is dedicated to my parents

Mr. Joseph Vincent Caputo

and

Ms. Sarah Gray Carson

who have given me essential educational support.

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ABSTRACT

This study attempted to determine if NCAA Division I student-athletes perceived athletic related stress as having an effect on their academic performance. The purpose of this study was to review stressors related to athletics and determine the possible carry-over effect they may have on academic performances. An attempt was made to discern if there were perception differences among the gender, race, and team subgroups concerning whether athletic stressors interfered with their academic performances. The three types of athletic stressors which were evaluated included NCAA requirements, time constraints, and injuries. In this study, two research objectives were developed: (a) review the three subgroups individually, to determine if significant differences existed in the perceived carry-over effects of the three stressor types, and (b) review the individual questions of the three stressor types to determine if significant differences existed in the perceived carry-over effects among the three subgroups.

The subjects in this study included student-athletes participating in all varsity sports who engaged in intercollegiate competition during the Spring Semester at one Division IA university in the southeast region of the United States. The results of the subgroup analyses revealed consistent patterns of perceptions across all three subgroups. Injuries were perceived as stressful by all three subgroups. On the other hand student-athletes consistently perceived NCAA requirements as non-stressful or they were neutral about the topic. Finally, time constraints were also perceived as stressful, but not according to the specific subgroups but rather a specific type of time constraint and/or by the individual athletes.

The results of this study will help the support staff and athletic administrators at this NCAA Division I university and other universities enhance their awareness of student-athlete's perceptions about athletic stressors that may have an adverse effect on their academic performances. Not only can this knowledge benefit athletic departments, but it may directly affect the student-athletes by allowing them a greater sense of commonality with their fellow athletes.

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CHAPTER 1

INTRODUCTION AND PURPOSE

Student-athletes have endured many external influences throughout their college experience. Their intercollegiate experiences have been much different from that of their non-athlete peers. Student-athletes must not only achieve social and academic development, but they must also develop athletically. Occasionally, student-athletes experience additional stressors to which non-student athletes remain unexposed. These additional stressors are related to their involvement in an intercollegiate sport. Therefore, it is important to study intercollegiate student-athletes as a separate population or subculture.

The results of academic studies conducted with student-athletes at the University of Utah by Henschen and Fry (1984) consistently revealed that white women had the highest GPA's and the highest graduation rates, whereas black men athletes rated the lowest in these categories. In all cases of race and gender, the graduation rates of student-athletes declined with each passing year of the studies Shapiro (1984) conducted. Despite these findings, the student-athletes continued to have higher graduation rates than non-student athletes.

Camp and Epps (1984) were the only researchers to directly address student-athlete role conflict. The authors expressed that role conflict may have been the underlying cause for the low academic performance by many student-athletes. Hawkins (1994) and Taylor (1995) agreed that student-athletes needed assistance in their academic studies. Gaining the students' trust was the first step for academic advisors and

consultants in both studies. Assessing the student-athletes' needs and interests was the second step. Mental preparation and mental strategies were the bases of Hawkins (1994) and Taylor's (1995) models. Hawkins (1994) reported that a variety of strategies could be helpful in improving academic performance, and Taylor (1995) designed a model to be followed specifically in order to assist in improving academic performances.

Jones and Hanton (1996) and Scott (1995) agreed that student-athletes have more stress than non-student-athletes. Both articles assessed stress as it pertained to competition. They also attempted to answer how stress specifically affected athletic performance. The research by Jones and Hanton (1996) contradicted the results of Scott (1995) who reported that skill performance decreased or was lower when attempted in a stressful situation. Indeed, Jones and Hanton (1996) found that stress in specific performance situations could be facilitating rather than debilitating to performance.

Statement of Purpose

This study attempted to determine if NCAA Division I athletes perceived athletic performance stress as having an effect on their academic performance. The purpose of this study was to review stressors related to athletic performances and determine the possible carry-over effect they may have on academic performances. An attempt was made to discern if there were perception differences among the gender, race, and team subgroups concerning whether athletic stressors interfered with their academic performances. The three types of athletic stressors which were evaluated included: (a) NCAA requirements, (b) time constraints, and (c) injuries. In this study, two research objectives were developed.

1. Review the three subgroups individually, to determine if significant differences existed in the perceived carry-over effects of the three stressor types.
2. Review the individual questions of the three stressor types to determine if significant differences existed in the perceived carry-over effects among the three subgroups.

Definition of Terms

Following are the key terms pertinent to this study.

Athletic Stressors: Pressure relating to a sport function. For the purpose of this study athletic stressors referred to NCAA requirements, athletic injuries, and time pressures related to athletics.

Carry-Over Effect: The student-athletes perceptions' of the degree to which athletic stressors influenced their academic performance.

In-Season: The time period during which intercollegiate sports were in intercollegiate competition.

National Collegiate Athletic Association (NCAA): A private organization which governs more than 800 four-year colleges and universities in the United States. Each school is obligated to follow the NCAA rules and regulations.

NCAA Academic Requirements: The satisfactory progress requirements are in effect during each year of eligibility. They state that a total of 18 degree hours applicable toward the degree must be earned during the Fall and Spring semesters, and a total of 24 degree hours applicable toward the degree must be obtained during the entire year. The

academic requirements for maintaining eligibility include the percent of the degree to be completed as well as GPA requirements for each year of eligibility.

<u>Year of eligibility</u>	<u>% of degree to be completed</u>	<u>GPA requirements</u>
1	N/A	N/A
2	N/A	N/A
3	25%	1.8
4	50%	1.9
5	75%	1.9

Perception: Knowledge obtained by being aware. For the purpose of this study, perception was defined as the result of the student athletes' survey ratings about athletic stress carry-over effects.

Assumptions of the Study

Four assumptions were made in this study.

1. NCAA Division I student-athletes experience performance stress to some extent throughout their intercollegiate athletic career.
2. The subjects were aware of the NCAA academic eligibility requirements.
3. The subjects answered honestly when completing the survey.
4. Student-athlete's perceptions of stress carry-over can be measured.

Scope of the Study

While conducting the research, there were limiting factors which were not under the control of the researcher.

1. The subjects were limited to men and women student-athletes participating in a sport that was in-season during the Spring semester of 1997.
2. The survey did not address the type of stress individual student-athletes were experiencing.

There were also factors which the researcher controlled.

1. The selection of a Division I institution belonging to the Southeastern Conference and governed by the rules of the NCAA.
2. All sports in-season during the Spring of 1997 were included. These sports included the men's baseball, golf, swimming, tennis, and track and field teams; and the women's crew, golf, softball, swimming, tennis, and track and field teams.

Significance of the Study

This study suggested new areas of research that needed to be explored to facilitate the understanding of why athletes are not performing as well as they might in the classroom. Findings from studies such as this can be applied by athletic academic advisors and sport psychology consultants. The study of athletic stress and possible carry-over effects into academic achievement has opened a new area of research for sport psychology consultants. Assessment tools will need to be designed by future researchers to pinpoint accurately which stressors cause carry-over effects into areas other than athletics. Athletic academic advisors can use these and other results to help design improved advising techniques and mentoring programs.

CHAPTER 2

REVIEW OF LITERATURE

The nature of this review was to provide a structured background of the research conducted on athletic and academic performance of student-athletes, and to review the literature concerning determinants and solutions to problems in the area of student athletics. Research and reviews were prepared by scholars and professionals in sport. The research summarized here provided the theoretical background for this studies conclusions. The organization of the review was structured to explore the connection between athletic performance stress and its effects on academic performance including: (a) student-athletes' academic standings, (b) reasons for low academics, (c) strategies to help improve academic performance, and (d) stress/anxiety in athletics.

Student-Athletes' Academic Standings

Henschen and Fry (1984) investigated men and women student-athletes' graduation rates related to athletic participation. All men athletes participating in the University of Utah collegiate sports from 1973-1982 and women athletes participating from 1976-1982 were the subjects in the study. Each year the athletes' names were compared to the official graduation list supplied by the University Registrar.

The results indicated the overall graduation rate for the selected athletes was almost 49%, with football having the most graduates and basketball having the least. The men athletes' graduation rate was 48.76%, while women athletes graduated at a rate of 48.93%. The women's basketball team had the highest number of graduates while the gymnastic team was the lowest. The total athletes' graduation rate was higher than the

entire student body during the same period (45%). Alarming to Henschen and Fry (1984), the graduation rates dropped considerably during the last three years of the study. Additional results revealed that of the 28 athletes who advanced to professional careers during that period, only 17.8% graduated. The data also suggested: (a) that the teams that traveled the most and had the longest seasons graduated the fewest athletes, and (b) that the sport which received national recognitions had the lowest graduation rates.

Graduation rates of men student-athletes at Michigan State University (M.S.U.) were studied over a 25-year time period. Shapiro (1984) created subcategories based on the sport played, the decade of enrollment, race, and athletic success. The graduation rates of the athletes were also compared to those of non-athletes at M.S.U and national data of other student-athletes. Data were obtained from the Registrar's Office and Sports Information Service to determine graduation rates and student-athletes' race. A total of 1,624 men freshmen football, basketball, baseball and hockey players who played between the fall of 1950 and the fall of 1974 were included in the study.

According to the results, graduation rates declined significantly every ten years across all sports (Shapiro, 1984). One explanation was the amount of time taken to graduate. While 28% of the athletes graduated in four years, 20% of them were graduating between 6-18 years after their first semester of enrollment. Another explanation was the increase of black men athletes who were admitted with inadequate preparation. Over the 25-year span the graduation rate for the black athletes was 57% while the white athletes graduated at a rate of 74%. The rising popularity of specific sports may have also been a reason for the drop in graduation rates. As the sports became

more popular, student-athlete's attrition rates increased while the graduation rates dropped.

Shapiro (1984) noted that dual sport athletes had the highest graduation rates (80%). It was suggested that because of their well roundedness they were able to carry their success throughout athletics and academics. A significant relationship between scholarship athletes and graduation also existed. Scholarship players graduated at a rate of 81% while walk-ons graduated at a rate of 58%. This may have been an eligibility issue rather than due to true academic performance.

When the student-athletes' graduation rates were compared to non-athletes' it was found that student-athletes graduated at the same or better rates than non-athletes. It was concluded from those results that collegiate sport participation had a positive effect on degree attainment, (Shapiro, 1984).

To conclude, Shapiro (1984) suggested areas in which additional work needs to be done. First, representative institutions should be selected to do standardized work on graduation rates. Second, admission test scores should be compared with graduation rates to determine if the tests accurately predict academic success. Third, interviews with the student-athletes should be conducted to determine if choice of major and course decisions are made based on eligibility reasons or personal goal attainment. Finally, academic and occupational success should be correlated with parental social economic status to determine which had the most effect on athletic participation (Shapiro, 1984).

In large university settings, Cone and Rosenbaum (1990) indicated that student-athletes were often the focus of the public image of the university. The majority of the

public information being released dealt with the athletic success of the student-athletes rather than their academic successes. The reason for this may have been that most academic performances were marginal at best. As a result of scandals, lawsuits and congressional intervention, universities are now held accountable for the graduation rates of the student-athletes (Cone & Rosenbaum, 1990).

Many arguments were made for the low success rates of student-athletes. Some studies were designed to specify which groups of athletes were doing the poorest. Other studies attempted to predict graduation rates based on a standardized test. The conclusion was that many factors led to academic success rather than one single factor. The paper attempted to determine those factors that help predict the graduation rates of student-athletes. Cone and Rosenbaum (1990) based their study on four groups of variables: (a) high school preparation, (b) university related variables, (c) athletic participation, and (d) demographics.

The sample was composed of 105 student-athletes enrolled at the university during the 1983 and 1984 school years and participating in at least one of eight top sports including men's basketball, football, baseball and gymnastics, and women's basketball, volleyball, softball and gymnastics. The final sample consisted of 75% men and 25% women. Over half of the sample was white, the other subjects were of ethnic minorities. The sample consisted of first time freshmen, 51%; community college transfers, 39%; and four year college transfers, 10%. Admissions and Records provided the information pertaining to high school preparation, university academic performance and demographics. SAT scores were only available for 88% of the subjects. Coaches

provided the information that pertained to athletic participation. Twenty-four percent of the players did not play for one year because they were red shirted, 11% started four consecutive years, and 42% never started a game (Cone & Rosenbaum, 1990).

The results of an analysis of the bivariate relationships revealed that graduation rates were highly related to ethnicity, gender, and other demographic variables. Women graduated at a rate of 68% while the men graduated only at 20% rate. The women's team with the lowest graduation rate (basketball, 42%) was the same as for the men's team with the highest graduation rate (football also 42%). Forty-four percent of white student-athletes graduated and only 11% of minority student-athletes graduated, minority men being the lowest percentage to graduate. According to the percentages, white women had the best athlete graduation rates (Cone & Rosenbaum, 1990).

According to Cone and Rosenbaum (1990), many high school preparation variables had effects on predictions of graduation rates, but SAT scores were of small significance. High school GPA, the number of college preparatory math and english classes and the number of F's received in high school had the greatest effect on graduation rates. Only two university related variables affected graduation rates, i.e., the number of semesters a student remained on academic probation and the number of academic disqualifications. Student-athletes' graduation rates were not affected by any athletic participation variables.

Cone and Rosenbaum (1990) utilized a regression analysis to determine which of the four variables was the best predictor of graduation rates. The results indicated that high school preparation explained the greatest amount of variance, 36%; then

demographic variables, 20%; while athletic participation variables explained the least, 14%.

Cone and Rosenbaum's (1990) findings can help identify potentially successful student-athletes in the classroom although using demographic variables as predictors should be used with caution based on discrimination cases. It was noted also that the confidence in SAT scores as good predictors in academic success should be reassessed since their predictability value falls in last place. Cone and Rosenbaum (1990) suggested that more emphasis should be placed on preparing students for college while in high school, since that is the best predictor of college graduation.

NCAA Division I universities' athletic programs have recently created academic support programs. Richardson, Winklemann, and Nelson (1990) suggested that these programs have met both academic performance needs and long range developmental goals. The Athletic Department at the University of North Texas designed a course specifically for freshman student-athletes. The goal was to use techniques that enhanced both athletic and academic performance.

A sport psychologist working with the academic advisors set up the course. Fifteen freshman football players were the subjects. The football coaches were asked to prioritize three psychological aspects that would assist in reaching optimal performance levels for the upcoming season. In order, the three selections were goal setting, stress management, and visualization. A 15-week class was designed to show similarities between football experiences and academic situations based on the constructs selected by the coaches. Classes involved lectures, interactions, guest speakers, and role-playing.

Progressive relaxation techniques were also used. Each concept was related to football then to academics (Richardson et al., 1990).

Academic and athletic measures were taken before and after the course. The results came from goal-setting contracts, competitive stress inventories, confidence questionnaires, and self reports about visualization progress. Richardson et al. (1990) used t-tests to analyze the data.

The results indicated that the group trait anxiety lowered from pretest to posttest, but the change was not significant. The largest number of findings was noted when the group was divided according to GPA, HI GPA greater than 2.0 and LO GPA less than 2.0. On academic measures the LO GPA Group and HI GPA Group had greater trait confidence ($p = <.05$) from pre- to posttest, yet the LO GPA state self confidence scores decreased. Richardson et al. (1990) attributed these results to the experimental treatment program as well as to possible outside social factors.

At the completion of the study the student-athlete feedback revealed personal-social topics such as sexuality and date rape information, minority issues on campus, and presentations by peers about setting priorities were preferred to performance enhancement topics. Richardson et al. (1990) concluded that coaches must realize that a transition period must occur before students could focus on specialized performance enhancement techniques. Also, the academic counselors must be aware of all needs of the student-athletes instead of just the academic matters. To do this Richardson et al. (1990) suggested that: (a) holistic programs which are proactive in nature should be designed, and (b) open and clear communication between coaches and counselors should take place.

Reasons for Low Academic Achievement

Role conflict occurs when two separate roles create time, physical, and mental constraints on one another. Camp and Epps (1984) reviewed the background themes that led to the interest in role conflict. The first theme was based on common sense. Studies have shown that student-athletes at top university programs are involved with too many things to focus on their school work. The second theme came from research focused on academic performances involving the mutracking approach and scholarly approach. The mutrackers approach was focused on weak academic performances by student-athletes. The scholars attempted to systematically collect their data across different samples of universities or from specific athletic groups at determined universities. In the results of both approaches it was difficult to tell if athletic participation was the true reason for poor grades.

Camp and Epps (1984) directed their research toward role conflict as it applied to NCAA Division I men's football and basketball players. The sample consisted of 167 athletes who were enrolled during the 1982-1983 school year. Roles were defined as prescribed behaviors for an individual determined by the social status of the individual. The roles were examined from two viewpoints in this study, the actor (student-athletes) and others. Expectations were made by others for the actors based on role perceptions. Role completion was also required by specific others, NCAA, etc.

Camp and Epps (1984) explained the new concept of master status. This was the predominant status of the many occupied by the actor that was chosen to largely represent the actor's identity. It was suggested that most student-athletes did not select a master

status. Therefore, the majority were experiencing role conflict. Athletic administrators occasionally publicly announced that the student role came first. The students did not agree and in some cases the coaches did not agree either.

The purpose of this study was to determine whether or not role conflict was an issue for student-athletes over all. Camp and Epps (1984) examined the educational performances rated by the academic advisors and the athletic performances rated by the coaches. Hours attempted, hours passed and GPA's were categories compared with each group of ratings.

The results indicated that all of the student-athletes rated as good students by the advisors were consistent in the three compared categories. Significant results were found however in the variation of hours passed and GPA's for those students rated as good athletes. The good athletes were unable to complete the 24 hours required by the NCAA. These were the student-athletes most likely experiencing role conflict. Another suggestion was that the student-athletes rated as good athletes may have determined athletics as their master status. The students rated as good academically may have developed strategies to help resolve these conflicts (Camp & Epps, 1984).

To conclude it was argued that results such as these may lead academic administrators to choose to eliminate the academically weak student-athlete. Camp and Epps (1984) proposed that techniques should be developed to indicate specific situations of role conflict. Research should also attempt to address and outline ways of looking at student-athlete role conflict by the subjects themselves.

Wilbur and Wilbur (1986) discussed two reasons for poor academic performances of student-athletes. First, notions of what were required of college students was distorted by perceived experiences from high school. Poor time management skills and study skills led to poor class performances. Student-athletes became frustrated and began to assume that their poor performance was because of lack of education. Some may have even stopped attending classes because they felt their cases' were hopeless.

Student-athletes have difficulties behaving like other students. Wilbur and Wilbur (1986) attribute this to high school experience. Most freshmen athletes were treated like athletes in high school classroom settings. In college they may model other athletes' behaviors in the classroom rather than student behaviors.

Wilbur and Wilbur (1986) concluded that athletes must be taught student roles and student expectations to perform better in the classroom. The Checklist of Self-Defeating Behaviors and Assumptions was used to assess student-athletes' behaviors and make them aware of how they were destructive. After completion of the checklist, the student-athletes chose 2-5 items they would work on. Awareness of the other behaviors allowed them to become more student oriented in the classroom.

The checklist was developed after instructing football and basketball players who were first semester freshmen or other players on probation (Wilbur & Wilbur, 1984). It was based on responses given on a take-home final related to academic performances of student-athletes. The purpose of the checklist was to help student-athletes become aware that study skills could have as much effect on grades as intelligence. It also allowed the student-athletes to take responsibility for their academic performances.

Strategies to Help Improve Academic Performance

New techniques and strategies have been developed by coaches at the collegiate level in order to remain competitive athletically. These same phenomena were applied to the student-athlete's academic performance. It was referred to as "academic coaching," (Hawkins, 1994).

Academic coaching focuses on five main areas: (a) interest, (b) motivation, (c) conditioning, (d) discipline and (e) performance. Hawkins (1994) defined academic interest as having concern and excitement for the academic process in education. Knowledge of students' interest each semester was necessary for academic coaches to help student-athletes make and meet goals. This can be easy for advisors since they have the opportunity to meet with the students one-on-one. During these sessions Hawkins (1994) stated that verbal and behavioral motivation are needed tools. Verbal motivation was defined as encouraging and inspiring words, while behavioral motivation required the academic coach to first gain the student-athletes' trust and then help the student achieve their goals.

Hawkins (1994) reported that conditioning was a part of early semester and before class training. This involved mental training and preparedness prior to each semester and class. Time management, effective study habits, goal setting, and attending class also were parts of the conditioning process. It was suggested that in some cases discipline was needed also.

Hawkins (1994) concluded that some good combinations of strategies including his own help improve academic performance. Student-athletes must be prepared to

change and update their skills in order to meet new levels of performance and curricular requirements.

Taylor (1995) worked extensively with alpine ski racers, tennis players, and golfers as a consultant at Alpine/Taylor Consulting. There were no author notes in the paper, yet he mentioned throughout the paper that he is an experienced consultant.

The purpose of this article was to present a model that aids the development of competitive mental preparation strategies by integrating athletes needs and sports demands. The model was based on Taylor's (1995) personal research in different consulting approaches. He discussed the athlete's needs and helped to show how to develop an in-depth understanding of the athlete. He also clarified some important differences in the physical demands and psychological demands of three specific sports. He noted once these steps were taken, he could intersperse the demands with the needs.

Taylor (1995) outlined his model by describing the four steps he determined as necessary to overcome before developing an individualized mental preparation strategy. First the consultant must use both subjective and objective assessment tools to gain full knowledge about a specific athlete. It was indicated that too much assessment may cause the athlete to become suspicious of the consultant. Concerned with this, two suggestions were made, establish trust with the athlete and explain the usefulness of the assessment. Then the consultant must recognize the physical, technical, and logistical aspects of the sport played by the athlete. In the paper, Taylor (1995) outlined some of these. Three sports, alpine ski racing, tennis, and golf, were described according to the physical demands required, psychological priority, and mental preparation strategies. Next, the

consultant needs to prioritize the roles that psychological factors will have on the athlete. A table was organized to show a few different sports and their psychological priorities. Finally, the consultant must help create a strategy that is suitable for each mental factor affecting the athlete.

This article served as a tool for sport consultants. It provided the framework for consultants to utilize. Taylor (1995) stressed the importance of completing all four steps before trying to develop an individualized preparation strategy. Taylor (1995) concluded that ultimately, consultants can help develop the best mental preparation strategies for individual athletes by looking at multiple aspects that may affect the athlete.

Stress/Anxiety in Athletics

An abundance of literature suggests that stress can have an effect on performance, but little evidence suggests how it effects performance. People continually attempt to perform perfectly yet new pressures are placed on them to make this more difficult. An increase in external demands leads to increased efforts. Complications occur when the demands become too great to manage. Scott (1995) suggested that it has become necessary to assess individuals' responses to stressful situations. This may help maximize optimal use of the physiological changes caused by increased arousal levels. The Perceived Strain Scale (PSS) was designed by Scott to assess strain being experienced by individuals faced with external demands. The measure could be used to help better prepare for future stressful situations.

The purpose of this study was to validate the PSS in both stressful and calm situations created in a laboratory setting and in natural settings. The participants were 23

men hockey players participating in an indoor hockey tournament. The players averaged 27 years of age. Each subject rated themselves on the PSS during three testing sessions. The first two sessions took place in a laboratory setting and the final session took place along the side of the field just prior to a match. During each session three conditions were measured. The first condition was calm and relaxed, which did not contain any stressful situations. During the first condition the subjects participated in physiological, perceptual, and performance assessment tests. Stressed and tense was the second condition measure. This condition was measured while the subjects played one or two hockey matches a day in lead up games to the final play-off matches. The tests administered in condition two were the same tests in condition one. The assessment of condition three, tournament matches, was similar to condition two. Just prior to a match the participants rated their perceptions of the pending match. Within five minutes after the match both the players and the coaches rated the players' performance (Scott, 1995).

Prior to the testing conditions, three physiological parameters were measured. Two continued to be monitored throughout the full period of data collection. Metanephron, heart rate and respiration were measured, the latter two were measured continuously. While in the laboratory settings under the two conditions, stressed and calm, the subjects were asked to perform the following six tasks: (a) aiming, (b) fine manipulation, (c) hand-foot coordination, (d) hand steadiness, (e) manipulative ability, and (f) two-handed coordination. The PSS was used to determine the strain each task caused for the participants. A final time/error score was given for each participants' performance on the tasks (Scott, 1995).

Scott (1995) reported that the result's of the study were significant based on the physiological responses in all three conditions. The heart rate and breathing rate measurements in stressful situations increased at a significant rate ($p < 0.05$). The performance results for aiming were significant during condition two in which the participants attempted to increase speed while sacrificing accuracy. The manipulative ability and two-handed coordination results were also significant. The subject's perceived task difficulty compared to the actual task difficulty showed no significance but it was important to note that the tasks were moderately difficult and within a person's ability to cope in both stressed and calm situations. The PSS ratings of the tournament matches revealed great diversity among the players' perceived ability. The coaches' ratings of the players tended to be marginally higher than the players' personal ratings.

Scott (1995) concluded that PSS remained consistent in its ability to measure a similar task under similar conditions. The results of the study were enough to support the face validity of the PSS. Scott (1995) suggested that the PSS should be tested to establish further the validity and reliability of the measurement tool.

Jones and Hanton (1996) characterize top level sport as performing at optimal levels while in intense pressure situations. This lead to the development of the concept of anxiety as a multidimensional construct. The construct was made up of two components, cognitive and somatic. The Competitive State Anxiety Inventory-2 (CSAI-2), supported the evidence of the two separate components. In past research on intensity as a measure of competitive anxiety, it was viewed that anxiety was negative and harmful to performance. Recent studies have shown that anxiety in some cases has had positive

effects. Studies on elite versus non-elite athletes showed that, prior to competition, both groups experienced cognitive and somatic anxiety, yet the elite athletes found it to be facilitative while the non-elite athletes found it to be debilitating. Self-confidence and higher levels of control were associated with the facilitative anxiety states.

Three types of goals were distinguished from one another as described in the sport psychology literature. Outcome goals focused on specific desired personal results. Performance goals focused on specific outcomes which were measurable by the performance. Process goals focused on the specific activity that took place during the performance. Goals were related to anxiety in the sense that the degree of control people feel over their goal achievement was the determinant of whether the anxiety was facilitative or debilitating. High anxiety was associated with outcome goals more than performance and process goals (Jones & Hanton, 1996).

This study was designed to test the hypothesis that performers expecting to reach their goals while experiencing the same anxiety levels as performers with negative expectancies, would report anxiety as facilitative rather than debilitating. The participants were 45 men and 46 women competitive swimmers ranging from age 14 to 28. The swimmers trained on the average seven times per week for 10 months of the year. The sample was created using participants at four different swim meets during the 1993 and 1994 seasons. A modified version of the CSAI-2 was used to measure cognitive and somatic anxiety. The self-confidence subscale was not used. A direction scale was also used to show if the participant felt the anxiety was facilitative or debilitating and to what degree it was felt. To determine the types of goals, if any, that

were being set, the Goal Attainment Expectancy Scale was used. The participants specified the types of goals set and rated how confident they felt about achieving the goals (Jones & Hanton, 1996). The scales were administered one hour prior to the competitive events, thus leaving enough time for warmups.

Data analysis took place in three stages. During the first stage the internal reliability for the direction scales of cognitive and somatic anxiety, correlation between direction subscales and intensity, and descriptive data for anxiety intensity and direction scores were assessed. The second stage was designed to calculate the frequency of the different goal combinations set by the swimmers. The third stage involved creating positive and negative/uncertain groups based on expectancies for goal achievement. The positive group was composed of those with positive scores and the negative group included those participants with negative scores. MANOVA's were conducted within each goal type. In the cases of significant results ANOVA's were conducted. Finally, standardized discriminant function coefficients calculations were made (Jones & Hanton, 1996).

According to Jones and Hanton (1996), the results of the reliability analysis were acceptable at .89 for cognitive anxiety and .81 for somatic anxiety. The correlation coefficients were as follows: (a) intensity scores for cognitive and somatic anxieties were .52, (b) somatic anxiety and directions were -.29, and (c) cognitive anxiety and directions were -.35. The mean score for intensity of cognitive anxiety was 19.20 while somatic anxiety was 16.9. For cognitive anxiety and somatic anxiety the mean scores for direction were 2.96 and 5.05.

The results of the frequencies of goals set by the participants revealed that the majority of the subjects set more than one goal, while nearly half of the participants set all three types of goals. Jones and Hanton (1996) pointed out that a third of the participants did not set any outcome goals. A MANOVA was calculated for each of the three goal types. Only the participants who set goals in each area were used (45 swimmers). The results were significant for all three goal types and were as follows: (a) outcome goals' Wilks's Lambda = 0.75, $F(4,40) = 3.26$, $p < .05$, (b) performance goals' Wilks's Lambda = 0.65, $F(4,40) = 5.44$, $p < .01$, and (c) process goals' Wilks's Lambda = 0.76, $F(4,40) = 3.09$, $p < .05$.

The findings of the study supported the idea that not all anxiety is debilitating. Almost half of the subjects found somatic and cognitive anxiety to be facilitative while only 23% felt both were debilitating. Jones and Hanton (1996) gave two explanations for their findings. The first explanation focused on the nature of the sport. Swimming was described as needing an increased physiological arousal level, therefore, somatic anxiety was not only facilitative but necessary. Secondly, it was thought that cognitive anxiety was associated with lack of control, which supported the SDFC results found by Jones and Hanton (1996).

To conclude, suggestions for future research were made. First, future research should examine some factors that could predict facilitative and debilitating anxiety states. Also, research should examine the debilitating and facilitative states as they may relate to types of goal setting. Finally, research should be conducted on why some athletes experience positive emotions prior to competing (Jones & Hanton, 1996).

Summary

Two points were made from the existing literature. First, it became obvious that specific groups of student-athletes were struggling in their academic roles. This has challenged academic advisors to find new ways to assist these students to remain eligible for competition and achieve better academic performances. Secondly, the research showed that stress can have an impact on athletic performance (Scott, 1995). It is possible that the stress which student-athletes commonly associate with athletic demands may have an overlapping affect on their academic performance as well.

CHAPTER 3

METHODS

The purpose of this study was to review stressors related to athletic performances and determine the possible carry-over effect they may have on academic performances. This study attempted to determine to what extent intercollegiate student-athletes' perceptions of whether athletic stressors have a carry-over effect on their academic performance. This chapter outlines and describes the participants, rationale for the research approach, and procedures involved in the study.

Participants

The subjects in this study included student-athletes participating in all varsity sports who engaged in intercollegiate competition during the Spring Semester at one Division IA university in the southeast region of the United States. The sports included were men's baseball, golf, swimming, tennis, and track and field, and women's crew, golf, softball, swimming, tennis, and track and field. The participants were designated as active members on the official squad list for the respective team. Before participating in the study, the subjects were given permission from their coaches. Each head coach signed a letter of informed consent (Appendix A). When the subject completed the survey, it was assumed the subjects had given their informed consent as stated on the survey cover letter (Appendix B). Procedures for informed consent were consistent with the university guidelines regarding research with human subjects

Instrumentation/Rationale

The specific research design was constructed to create a diverse subject pool.

Athletes from all sports competing in the spring were chosen to participate in the study so that the results could be both accurate and specific in relation to perceptions while in the season of the sport. The time constraints for each team participating in this study were factors of consideration because the teams were involved with their competitive season.

Recognition of team differences among student-athletes has also become a necessity to professionals working in sport. Acknowledging that teams have specific differences can allow support staff to help with individual team issues more accurately. This research attempted to recognize potential sport context differences that may affect team perceptions of the athletic stressors as they carry-over into their academic performance.

Continuing racial and gender differences in sport were discussed in the existing literature, therefore it is important to compare racial and gender patterns of perceptions in this research. Recognition of gender differences among student-athletes has become a necessity to professionals working in sport. Acknowledging gender differences can allow support staff to help with gender specific issues more accurately. This research attempted to recognize potential differences of women's and men's perceptions of the athletic stressors as they carry-over into their academic performance. Acknowledgment of race differences among student-athletes has become essential to professionals working in sport. Recognizing racial differences can allow support staff to help with racial specific issues more accurately. This research attempted to recognize potential racial differences

of perceptions of the athletic stressors as they carry-over into their academic performance.

Both gender and race subgroups were selected because they play a vital role in defining our society today.

A survey designed by the researcher was the instrumentation used to collect the data. A multiple choice Likert style survey was the choice instrumentation (Appendix C). The researcher felt completing a survey would be less time consuming for the subjects, and interpretation of the survey results would also be less time consuming for the researcher. To structure the research questions on a single broad research question was integrated with two sub-questions. The questions on the survey were grouped according to the two sub-questions into three categories: (a) NCAA requirements, (b) time constraints and (c) injuries. Seven questions were developed for each subcategory.

NCAA Requirements

The following questions on the survey pertained to NCAA requirements' stressors, Question #'s 1, 2, 4, 6, 7, 8, and 12. Questions #8 and #7 were reverse order questions of #6 and #12 respectively (Appendix C).

Time Constraints

The following questions on the survey pertained to time constraint stressors, Question #'s 10, 11, 14, 16, 19, and 21. Questions #21 and #19 were reverse order questions of #10 and #14 respectively (Appendix C).

Injuries

The following questions on the survey pertained to injury stressors, Question #'s 3, 5, 9, 13, 15, 17, and 18. Questions #3 and #5 were reverse order questions of #17 and #18 respectively (Appendix C).

Validity and Reliability Check

To check the validity, a copy of the survey was distributed to four graduate students in sport studies. For each question on the survey, the individuals indicated from which research question it came by placing the research question number next to the survey question. The researcher then calculated the percent of agreement of the professionals to the development plan for each survey question. The results of the validity check were in 100% agreement for each survey question.

To calculate the reliability of the survey, a copy of the survey was given to five graduate students who were former athletes. Each individual answered the questions on the survey twice. A waiting period of 48 hours was required between the first and second trials. The results were found to be reliable if the answers for each survey question given by each individual on the first trial were within one Likert level from the answers given during the second trial. The results of the reliability test were excellent, with an agreement of 100%.

To calculate the internal consistency of the survey, two sets of reverse order questions in each subcategory were scored. For each individual's results the reverse order answers for each set were within one Likert level of being exact. The results of the

reliability test were excellent, with an agreement of 100%. When scoring the true subjects' scores, internal consistency was not evaluated.

Procedures

The survey was distributed by the researcher or coach according to the times specified by each coach or academic advisor for each team. The approximate time for each session was a maximum of thirty minutes. The sessions included a review of the informed consent which included a brief description of the study, an overview of confidentiality, potential risks and potential benefits from participating in the study. The subjects were then given a chance to ask any questions. The survey was distributed to the participants by the researcher or coach, and each participant returned their completed survey by placing it in a large yellow folder. All of the signed informed consent statements were kept in a locked file. At the completion of the study all surveys were destroyed.

CHAPTER 4

RESULTS AND DISCUSSION

The purpose of this study was to review stressors related to athletic performances and determine the possible carry-over effect they may have on academic performances. An attempt was made to discern if there were perception differences among the gender, race, and team subgroups concerning whether athletic stressors interfered with their academic performances. The three types of athletic stressors which were evaluated included: (a) NCAA requirements, (b) time constraints, and (c) injuries. A questionnaire (Appendix C) was developed and sent to eleven NCAA Division I teams at a single institution in the Southeastern conference. All teams were in season during the time the survey was administered. The teams included women's crew, golf softball, swimming, tennis, and track and field teams and men's baseball, golf, swimming, tennis, and track and field teams.

The survey (Appendix C) consisted of twenty-one questions that were answerable with a five-point Likert type scale. The questions were presented in a random order on the survey, by choosing numbers from a hat. A five-point Likert scale was used as the scoring system for each question. The scale allowed for a range of answers from strongly disagree (1) to strongly agree (5). The questions represented three categories of athletic stressors: (a) athletic injuries, (b) NCAA continuing eligibility requirements, and (c) time constraints. A score of five (strongly agree) was interpreted as least stressful to the student athlete, and an answer of one (strongly disagree) was interpreted as most stressful for the student-athlete.

A total of 165 surveys were completed by the selected teams. Not all eligible athletes were able to participate in the study due to the times the surveys were administered. The over all return of the surveys administered was 100%--60% of these were from women's teams and 40% were from men's teams. The ages of the participants ranged from 18 to 23 years. Race was divided into seven categories on the survey demographic sheet (Appendix C). The percentages of participants in each category were reported as follows: (a) American Indian or Alaskan Native, 0.6%, (b) Asian or Pacific Islander, 1.8%, (c) Black/African American, 10.3, (d) Hispanic, 2.4%, (e) Non-Black Hispanic, 1.2%, (f) White/Not of Hispanic Origin, 80.6%, and (g) Other, 3.0%.

This chapter was divided into two components according to the two research objectives: (a) review each of the three subgroups of athletes to determine if significant differences existed in the perceived carry-over effects of the three stressor types and (b) review the individual questions of the three stressor types to determine if significant differences existed in the perceived carry-over effects with-in each of the three subgroups of athletes. Within each component, results of the research objectives were calculated. A discussion of the results was included for each component.

Within each subgroup the results of the two research objectives were arranged according to three categories of athletic stressors: (a) injuries, (b) NCAA continuing eligibility requirements, and (c) time constraints. A discussion of the results of the three categories of stressors was included.

Significant Differences Within Each Subgroup

The first objective was to review the three athlete subgroups individually, to determine if significant differences existed in the perceived carry-over effects of the three stressor types: (a) injuries, (b) NCAA requirements, and (c) time constraints.

Results

Simple one-way ANOVA's were calculated to determine the significance of the results. Student Newman Keuls post hoc tests were also performed where pertinent ($p \leq .05$). The results of the first objective are organized according to the three subgroups of athletes: (a) gender, (b) race, and (c) team, and are followed by a discussion.

Gender

The total sample mean scores of each gender's perceptions of the carry-over effects of athletic injuries on academic performances were calculated. The mean scores for athletic injuries as a stressor were a 2.589 for women versus a 2.678 for men. Results of the one-way ANOVA indicated that there was no significant difference ($F(1, 154) = .940, p = .334$) between the women's and men's perceptions of athletic injuries having a carry-over effect into their academic performances (Table 1). Both genders tended to feel little injury stress carry-over effect into their academic performance or felt neutral about this issue.

The mean scores for NCAA continuing eligibility requirements as a stressor were a 3.87 for women versus a 3.73 for men. Results of the One-way ANOVA indicated that there was no significant difference ($F(1, 160) = 1.437, p = .232$) between the women's and men's perceptions (Table 2) of NCAA requirements having a carry-over effect into

Table 1. Perceived Carry-Over Effect of Athletic Injuries Compared by Gender (No Significant Results)

Gender	Mean	Std. Dev.
Women	2.589	.558
Men	2.678	.572

($F = .940$, $p = .334$)

Table 2. Perceived Carry-Over Effect of NCAA Requirements Compared by Gender (No Significant Results)

Gender	Mean	Std. Dev.
Women	3.865	.668
Men	3.734	.697

($F = 1.437$, $p = .232$)

their academic performances. Both genders tended to feel neutral or no stress carry-over effect from the NCAA continuing eligibility requirements.

The mean score for time constraints as a stressor was 2.943 for women versus 2.785 for men. Results of the one-way ANOVA indicated that there was no significant difference ($F(1, 162) = 3.134, p = .079$) between the women's and men's perceptions of time constraint stressors as having a carry-over effect into their academic performances (Table 3). Although the distribution was spread across the Likert scale, both genders tended to feel neutral about time constraint stress carry-over effect into their academic performance.

Race

The total mean score for each race category's perceptions of the carry-over effects of athletic injuries into academic performances were calculated (Table 4). Results of the One-way ANOVA indicated that there were no significant differences ($F(6, 149) = .750, p = .610$) among the races regarding their perceptions of athletic injury as a stressor as having a carry-over effect into their academic performances. The races tended to feel injury stress carry-over effect into their academic performance or felt neutral about this issue.

The total sample mean score of each race categories' perceptions of the carry-over effects of NCAA continuing eligibility requirements on academic performances were calculated (Table 5). Results of the one-way ANOVA indicated that there were no significant differences ($F(6, 155) = 1.992, p = .070$) among the races concerning their perceptions of NCAA requirements as a stressor as having a carry-over effect into their

**Table 3. Perceived Carry-Over Effect of Time Constraints Compared by Gender
(No Significant Results)**

Gender	Mean	Std. Dev.
Women	2.943	.490
Men	2.785	.652

($F = 3.134$, $p = .079$)

Table 4. Perceived Carry-Over Effect of Athletic Injuries Compared by Race (No Significant Results)

Race	Mean	Std. Dev.
American Indian (N = 1)	3.400	
Asian or Pacific Islander	2.330	.306
Black/African American	2.625	.673
Hispanic	2.700	.383
Non-Black Hispanic	3.100	.424
White/Not of Hispanic Origin	2.611	.564
Other	2.760	.434

($F = .750$, $p = .610$)

Table 5. Perceived Carry-Over Effect of NCAA Requirements Compared by Race (No Significant Results)

Race	Mean	Std. Dev.
American Indian (N = 1)	4.200	
Asian or Pacific Islander	3.400	.800
Black/African American	3.938	.545
Hispanic	3.200	.938
Non-Black Hispanic	4.000	.283
White/Not of Hispanic Origin	3.849	.659
Other	3.080	1.035

($F = 1.992$, $p = .070$)

academic performances. The races tended to feel unaffected by NCAA continuing eligibility requirements stress carry-over effect into their academic performance.

The total sample mean score of each race categories' perceptions of time constraints carry-over effects into academics were calculated (Table 6). Results of the One-way ANOVA indicated that there were no significant differences ($F(6, 157) = 1.213, p = .302$) among the races regarding their perceptions of time constraint stressors as having a carry-over effect into their academic performances. The races tended to feel time constraint stress carry-over effect into their academic performance or felt neutral about this issue.

Team

The mean scores of the three athletic stressors were obtained for each team in the study. The total mean score of each team's perceptions of the carry-over effects of athletic injuries on academic performances were calculated (Table 7). The one-way ANOVA for teams indicated that there were no significant differences ($F(10, 145) = .797, p = .632$) among the teams concerning their perceptions of athletic injury as a stressor as having a carry-over effect into their academic performances. The teams tended to feel injury stress carry-over effect into their academic performance or felt neutral about this issue.

The total mean score of each team's perceptions of the carry-over effects of NCAA continuing eligibility requirements into academic performances were calculated (Table 8). Results of the one-way ANOVA indicated that there were no significant differences ($F(10, 151) = 1.070, p = .389$) among the team categories perceptions of

Table 6. Perceived Carry-Over Effect of Time Constraints Compared by Race (No Significant Results)

Race	Mean	Std. Dev.
American Indian (N = 1)	2.600	
Asian or Pacific Islander	2.800	0.346
Black/African American	3.100	0.484
Hispanic	3.300	0.476
Non-Black Hispanic	2.800	0.283
White/Not of Hispanic Origin	2.859	0.576
Other	2.520	0.559

($F = 1.213$, $p = .302$)

Table 7. Perceived Carry-Over Effect of Athletic Injuries Compared by Team (No Significant Results)

Race	Mean	Std. Dev.
Women's Crew	2.754	.504
Women's Golf	2.567	.638
Women's Softball	2.580	.466
Women's Swimming	2.565	.704
Women's Tennis	2.543	.321
Women's Track	2.462	.576
Men's Baseball	2.591	.619
Men's Golf	2.800	.327
Men's Swimming	2.813	.524
Men's Tennis	2.829	.547
Men's Track	2.491	.672

($F = .797$, $p = .632$)

**Table 8. Perceived Carry-Over Effect of NCAA Requirements Compared by Team
(No Significant Results)**

Race	Mean	Std. Dev.
Women's Crew	3.680	.744
Women's Golf	3.568	.572
Women's Softball	3.800	.626
Women's Swimming	4.078	.693
Women's Tennis	3.914	.815
Women's Track	4.015	.509
Men's Baseball	3.583	.741
Men's Golf	4.000	.808
Men's Swimming	3.838	.502
Men's Tennis	3.800	.757
Men's Track	3.691	.788

($F = 1.070$, $p = .389$)

NCAA requirements as a stressor having a carry-over effect into their academic performances. The teams tended to feel neutral or unaffected by NCAA continuing eligibility requirements stress carry-over effect into their academic performance.

The total mean score of each team's perceptions of time constraints carry-over effects into academics were calculated (Table 9). Results of the one-way ANOVA indicated that there was a significant team effects ($F(10, 153) = 2.994, p = .0018$). The Student Newman Keuls post hoc test indicated that the men's baseball team found time constraint stressors to be significantly ($p = .0018$) more stressful than the men's golf team. The teams tended to feel time constraint stress carry-over effect into their academic performance or felt neutral about this issue.

Discussion

The review of the mean scores of the three subgroups' perceptions of the athletic stressors having carry-over effects into academic performances indicated that there were no significant gender differences within the three stressor categories. Both genders felt the levels of the three athletic stressors, injuries, NCAA requirements, and time constraints were the same (Figure 1). Women found athletic injuries ($M = 2.589$) to be slightly more stressful than the men ($M = 2.678$), although there were no significant differences, it was evident that both genders were experiencing some stress carry-over effects from injuries. Time constraints had the second highest mean scores for men ($M = 2.785$) and women ($M = 2.943$) revealing stress carry-over into academic performances. Finally, both men ($M = 3.734$) and women ($M = 3.865$) unaffected by NCAA continuing eligibility requirements.

Table 9. The Perceived Carry-Over Effects of Time Constraints Compared by Team

Race	Mean	Std. Dev.
Women's Crew	2.893	.506
Women's Golf	3.068	.327
Women's Softball	2.818	.424
Women's Swimming	2.722	.461
Women's Tennis	2.914	.344
Women's Track	3.185	.509
Men's Baseball	2.492*	.717
Men's Golf	3.371*	.668
Men's Swimming	2.886	.541
Men's Tennis	2.914	.609
Men's Track	2.818	.395

* $F = 2.994$, $p = .0018$ and Student Newman Keuls $\leq .05$

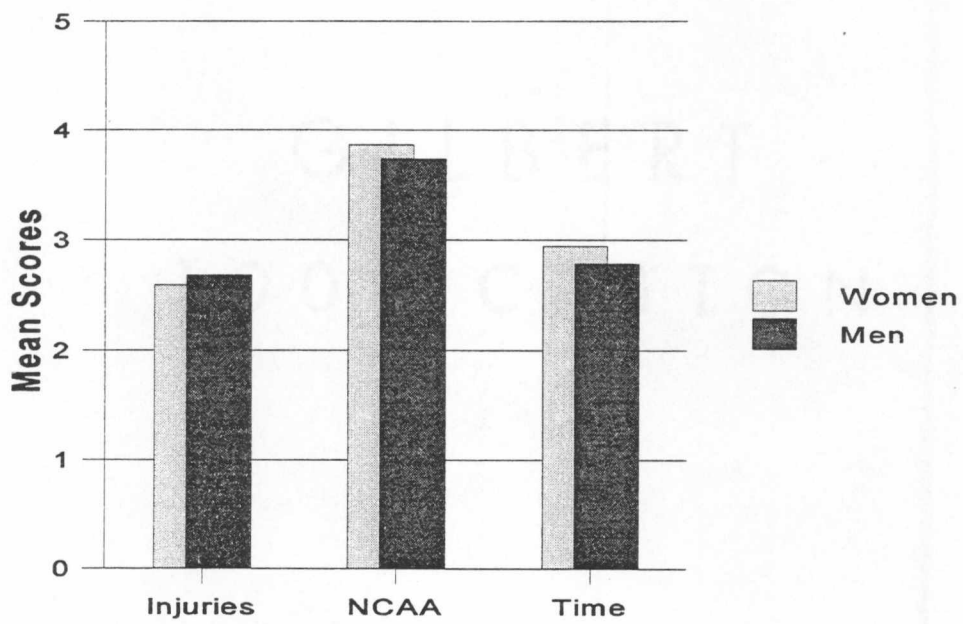


Figure 1. Perceived carry-over effect of athletic stressors compared by gender

The review of the mean scores of the race categories' also produced no significant differences perceptions of any of the athletic stressors. Although there were no significant differences, it was evident that the race categories were experiencing some stress carry-over effects from injuries and time constraints.

The responses indicated that the members of the seven race categories did feel the three stressors arranged equally (Figure 2). Asians and Pacific Islanders, African Americans, Hispanics and Whites agreed that athletic injuries were the most difficult stressors to endure as student-athletes. American Indians, Non-Black Hispanics, and individuals in the other category felt time constraints carried the most emphasis as an athletic stressor having carry-over effect into academic performances and athletic injuries as having the second most emphasis. The second most difficult stressor to endure for Pacific Islanders, African Americans, and Whites was time constraints. Hispanics were the only race category to feel NCAA requirements were the second most difficult stressor and time constraints to be the least demanding stressors. All race categories with exclusion of Hispanics felt NCAA requirements had the least bearing on academic performances.

The review of the mean scores of the teams' perceptions of the athletic stressors produced significant results. The men's baseball team found time constraint stressors to be significantly more stressful than the men's golf team (Table 9). Also, it was evident that the teams were experiencing some stress carry-over effects from injuries and time constraints. The perceived levels of carry-over effect for the three athletic stressors, injuries, NCAA requirements, and time constraints by the eleven teams (Figure 3) were

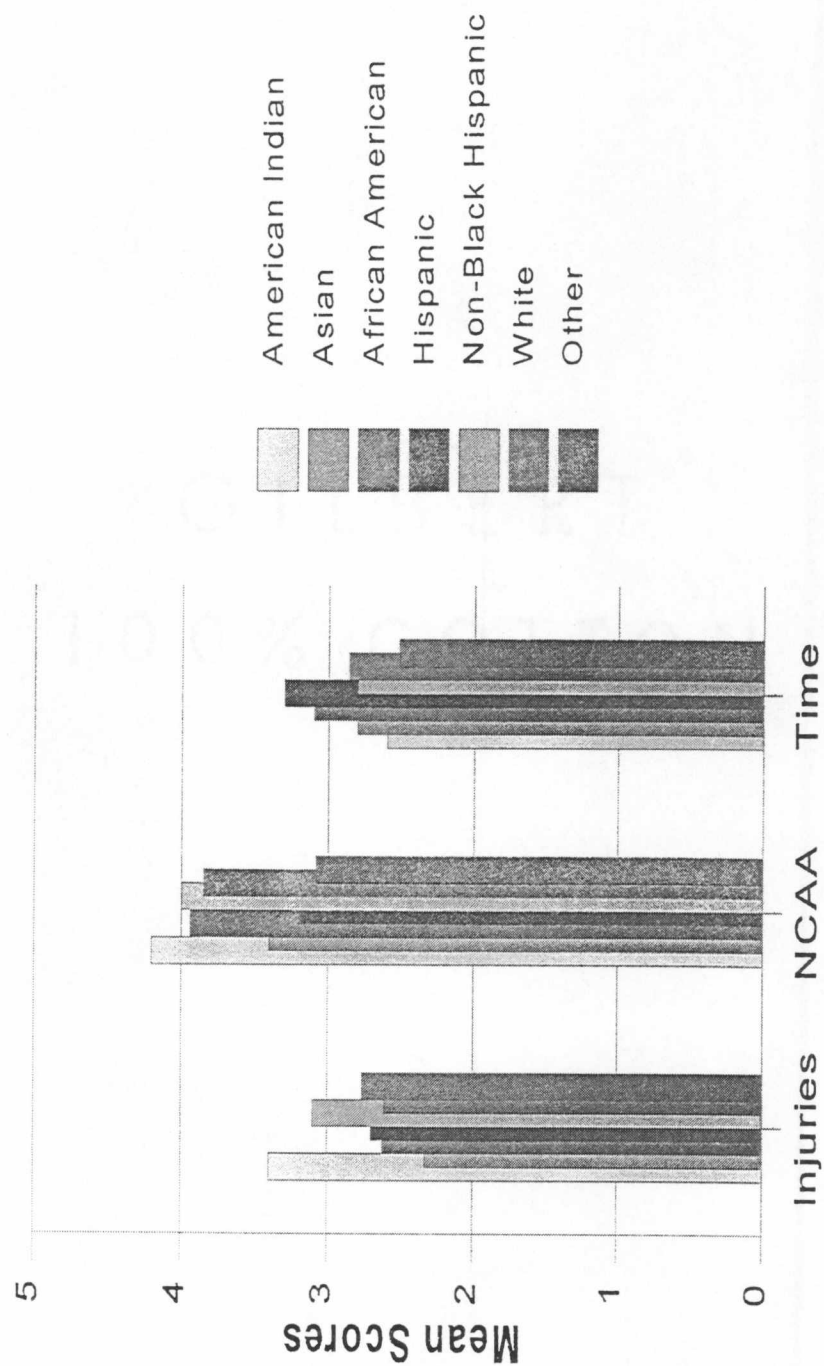


Figure 2. Perceived carry-over effect of athletic stressors compared by race

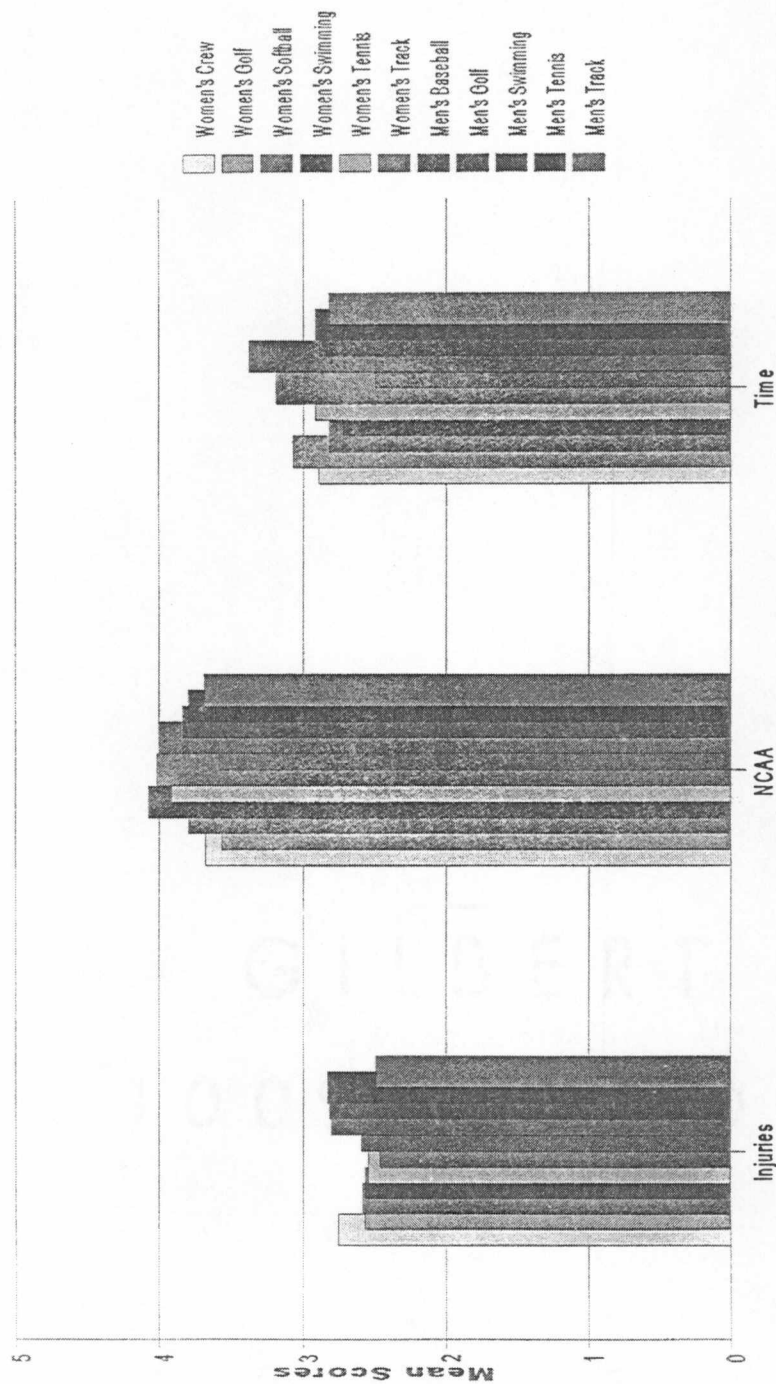


Figure 3. Perceived carry-over effect of athletic stressors compared by team

notably close. All teams with the exception to the men's baseball team, felt injuries caused the most stress carry-over effects into academics, time constraints caused the second most carry-over effects and NCAA requirements caused the least carry-over effects with regard to academics. Men's baseball agreed that the stressors related to time constraints had the most significant effect on academics while injuries carried the second most stress into academics. A review of the levels of each stressor within each subgroup revealed relatively invariable results. Athletic injuries and time constraints caused the most carry-over effects into academics. NCAA requirements were consistently perceived to cause the least amount of stress carry-over effects into academics across all three subgroups.

The results indicated that student-athletes attribute a majority of their academic stress to injuries and time constraints. These results suggested that student-athletes are not sufficiently prepared to endure these stressors.

Hawkins (1994) discussed the important roles of academic coaches. The coaches should have helped student-athletes effectively overcome any type of stressors that were causing academic difficulties. The university from which the subjects used in this study belonged had similar academic coaches. Due to the low stress carry-over effects attributed to the NCAA requirements it can be assumed that the support was available equally to all student-athletes at the university.

Athlete Subgroup Patterns For Stressor Categories of Questions

The second objective was to review the individual questions of the three stressor types to determine if significant athlete subgroup differences existed. The three stressors

were reviewed within the three subgroups: (a) gender, (b) team, and (c) race. The patterns of each subgroup's perceptions were also examined within each question of all three stressor types.

Gender and Team Results

To examine the patterns of the perceptions about each stress category cross-tabulations of Gender x Question were calculated and Chi square was applied for the review of the individual questions dealing with the three athletic stressors. The results of these analyses are organized according to the three athlete subgroup and group of questions for the athletic stressors: (a) injuries, (b) NCAA requirements, and (c) time constraints, and are followed by a discussion.

Gender x Injury Questions

A cross tabulation of Gender x Question was calculated and Chi square was applied for the review of the individual questions dealing with athletic injury stressors. The Pearson Chi square results were significant ($p = .007$) when comparing women's and men's perceptions of the stress of going to class while injured (Figure 4). About 36% of women disagreed or strongly disagreed, about 41% were neutral, and about 22% agreed or strongly agreed. About 28% of the men disagreed or strongly disagreed, about 24% were neutral, and about 48% agreed or strongly agreed. The majority of women were neutral or tended to feel injuries made it difficult for them to go to class. Men on the other hand were neutral or tended to feel injuries did not make it difficult for them to go to class.

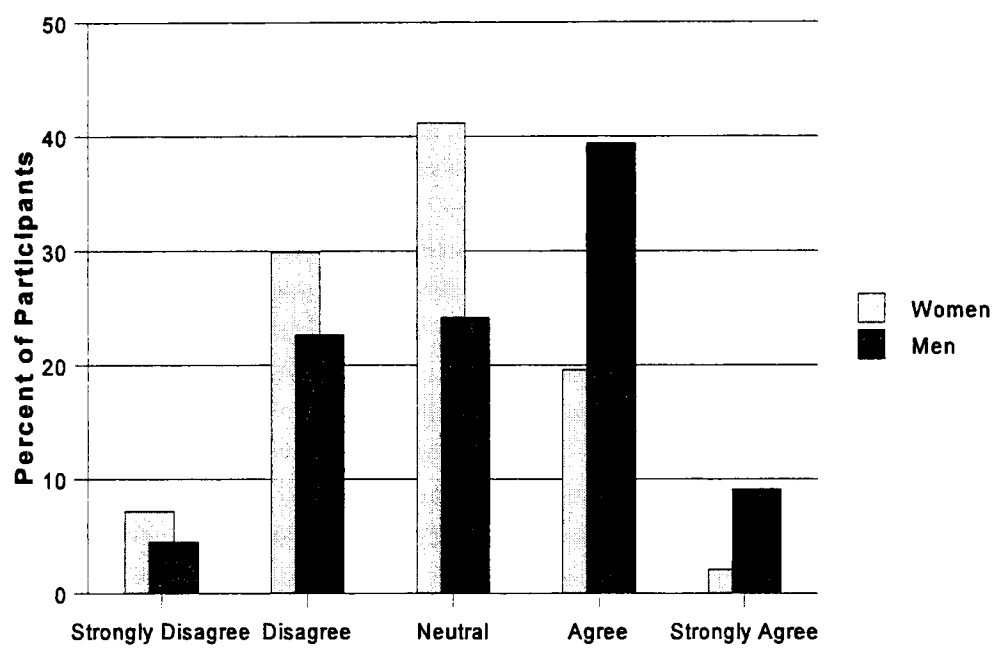


Figure 4. Perception of feeling motivated to go to class while injured

The Pearson Chi square results were not significant ($p = .872$) when comparing men's and women's perceptions of spending time studying while injured (Figure 5). The results for men and women revealed similarly distributed results. About 40% of women disagreed or strongly disagreed, about 47% were neutral, and about 12% agreed or strongly agreed. For men about 48% disagreed or strongly disagreed, about 42% were neutral, and about 9% agreed or strongly agreed. The majority of both genders were neutral or felt stress when finding time to study while injured.

When comparing women's and men's perceptions of having reduced stress while having an injury, the Pearson Chi square results ($p = .873$) were not significant. The results for women and men revealed similarly distributed results (Figure 6). About 65% of women disagreed or strongly disagreed, about 28% were neutral, and about 17% agreed or strongly agreed. About 59% of the men disagreed or strongly disagreed, about 35% were neutral, and about 6% agreed or strongly agreed. More than 55% of both genders felt that having an injury adds to their daily stress, however approximately 50% of both genders answered neutral.

When comparing women's and men's perceptions of having additional time to study while injured, the Pearson Chi square results ($p = .990$) were not significant. The results for women and men revealed similarly distributed results (Figure 7). About 38% of women disagreed or strongly disagreed, about 39% were neutral, and about 23% agreed or strongly agreed. About 35% of men disagreed or strongly disagreed, about 39% were neutral, and about 25% agreed or strongly agreed. Thus, the responses of

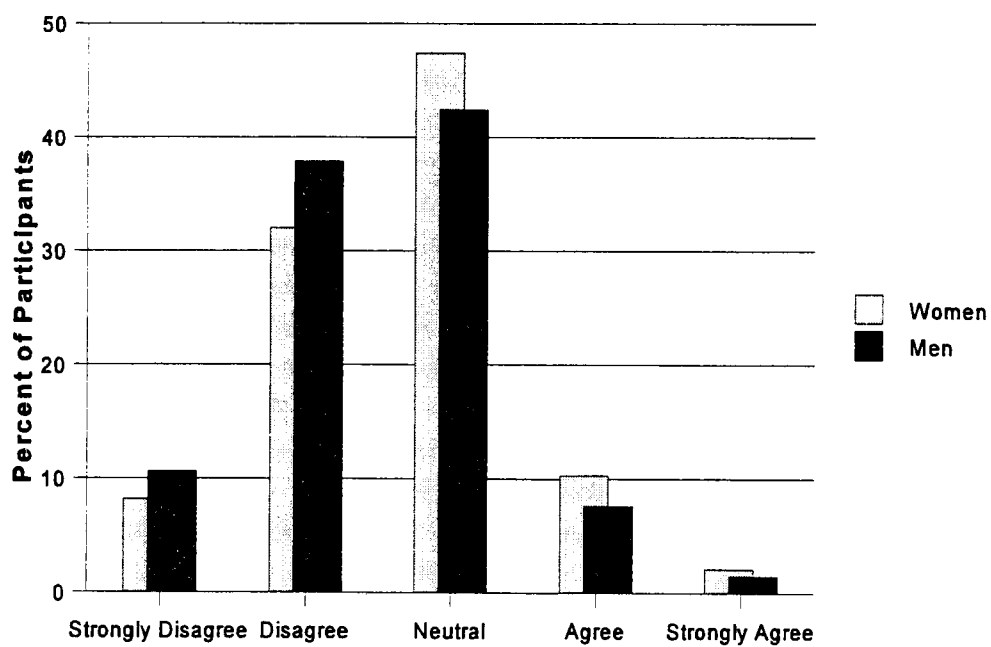


Figure 5. Perception of studying while injured as a stressor

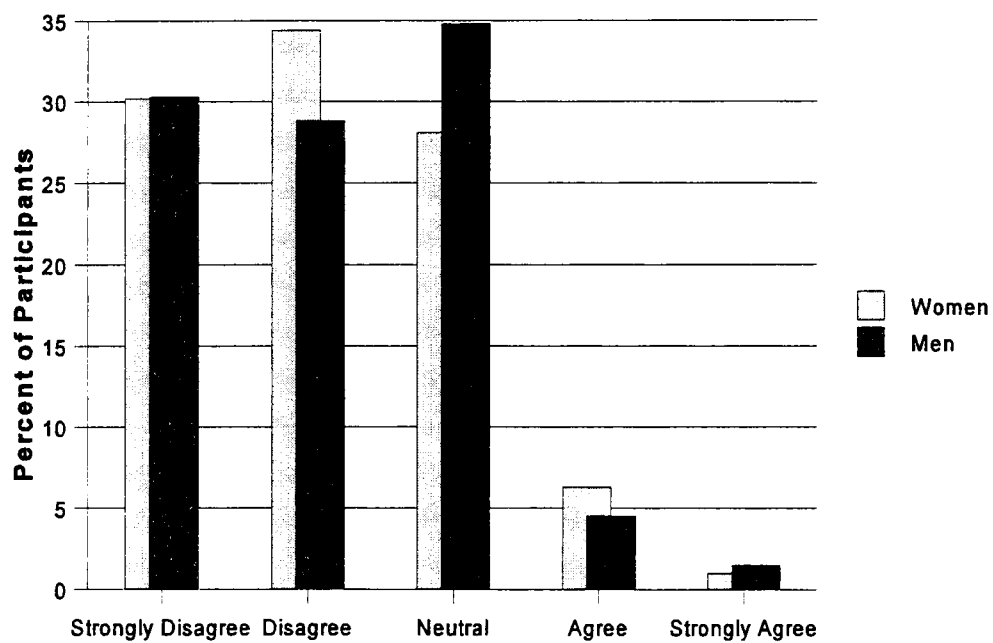


Figure 6. Perceptions that having an injury reduced daily stress

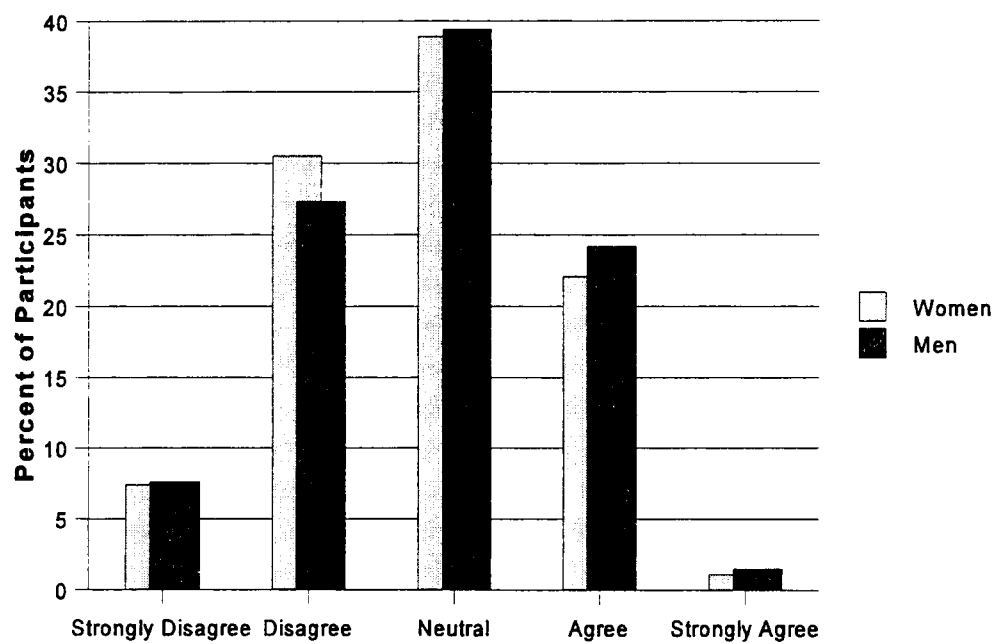


Figure 7. Perceptions of having additional time to study while injured

having additional time to study while injured tended to appear individually related to the athlete.

When comparing women's and men's perceptions of being able to easily focus on studies while injured, the Pearson Chi square results ($p = .928$) were not significant. The results for the men and women revealed similar patterns of results (Figure 8). About 43% of women disagreed or strongly disagreed, about 47% were neutral, and about 10% agreed or strongly agreed. About 45% of the men disagreed or strongly disagreed, about 42% were neutral, and about 12% agreed or strongly agreed. Thus, the majority of both genders tended to feel that it was not easier to focus on their studies while injured or were neutral about the topic.

Gender x NCAA Questions

An individual review of each question relating to NCAA requirements as compared by gender was conducted. A cross-tabulation of Gender x Question was calculated and Chi square was applied for the review of the individual questions dealing with NCAA continuing eligibility stressors.

The Pearson Chi square results were not significant ($p = .142$) when comparing the patterns women's and men's perceptions of being able to take the classes of their choice while continuing to meet the NCAA academic requirements (Figure 9). The results for women and men revealed similar patterns of results. About 13% of women disagreed or strongly disagreed, about 20% were neutral, and about 67% agreed or strongly agreed. About 15% of the men disagreed or strongly disagreed, about 8% were

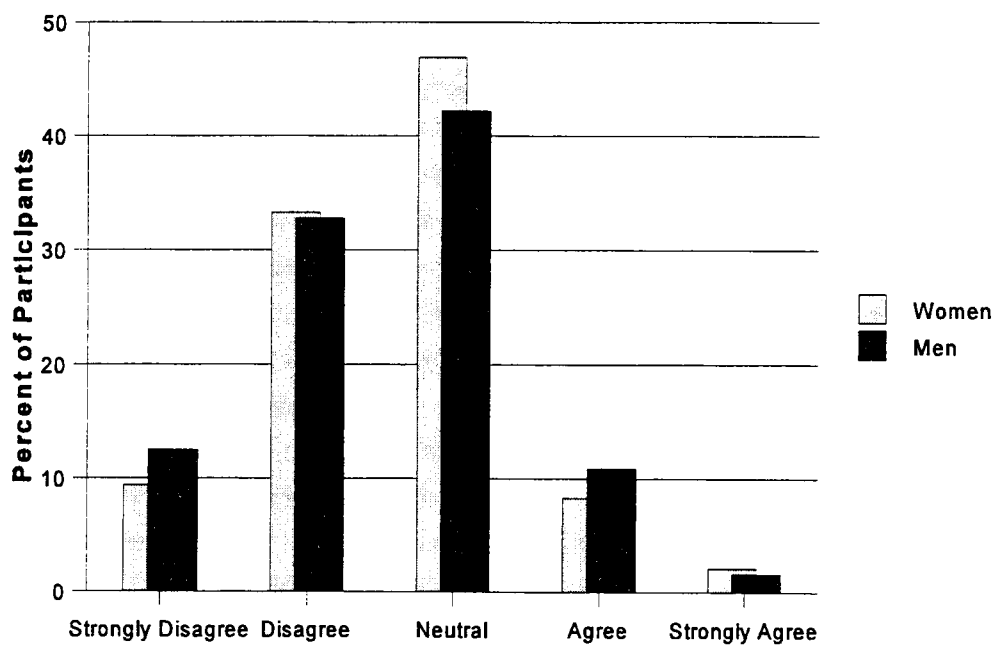


Figure 8. Perceptions that focusing on studies become easier when enduring an injury

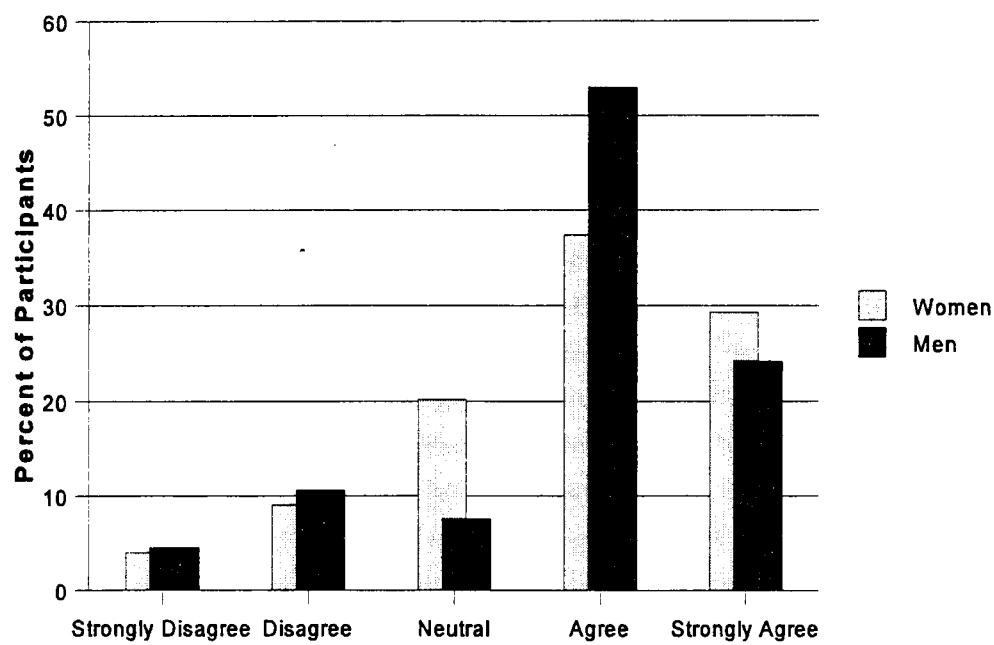


Figure 9. Perception of being able to take the classes of choice while continuing to meet the NCAA academic requirements

neutral, and about 87% agreed or strongly agreed. The majority of both genders tended to feel they had no difficulty taking the classes of their choice.

The Pearson Chi square results were not significant ($p = .455$) when comparing men's and women's perceptions of being able to pursue the degree of their choice while continuing to meet the NCAA academic requirements (Figure 10). The results for the men and women revealed similarly distributed results. About 6% of women disagreed or strongly disagreed, about 10% were neutral, and about 84% agreed or strongly agreed. About 14% of the men disagreed or strongly disagreed, about 12% were neutral, and about 74% agreed or strongly agreed. Thus, the majority of both genders tended to feel they were able to pursue the degree of their choice.

When comparing women's and men's perceptions of the NCAA academic requirements being reasonable, the Pearson Chi square results ($p = .901$) were not significant. The results for the men and women revealed similarly distributed results (Figure 11). About 11% of women disagreed or strongly disagreed, about 25% were neutral, and about 64% agreed or strongly agreed. About 14% of men disagreed or strongly disagreed, about 22% were neutral, and about 64% agreed or strongly agreed. Thus, the majority of both genders felt the NCAA academic requirements were reasonable or they were neutral about the topic.

When comparing women's and men's perceptions of the NCAA GPA requirements being reasonable, the Pearson Chi square results ($p = .409$) were not significant. The results for the men and women revealed similar patterns of results (Figure 12). About 5% of women disagreed or strongly disagreed, about 21% were

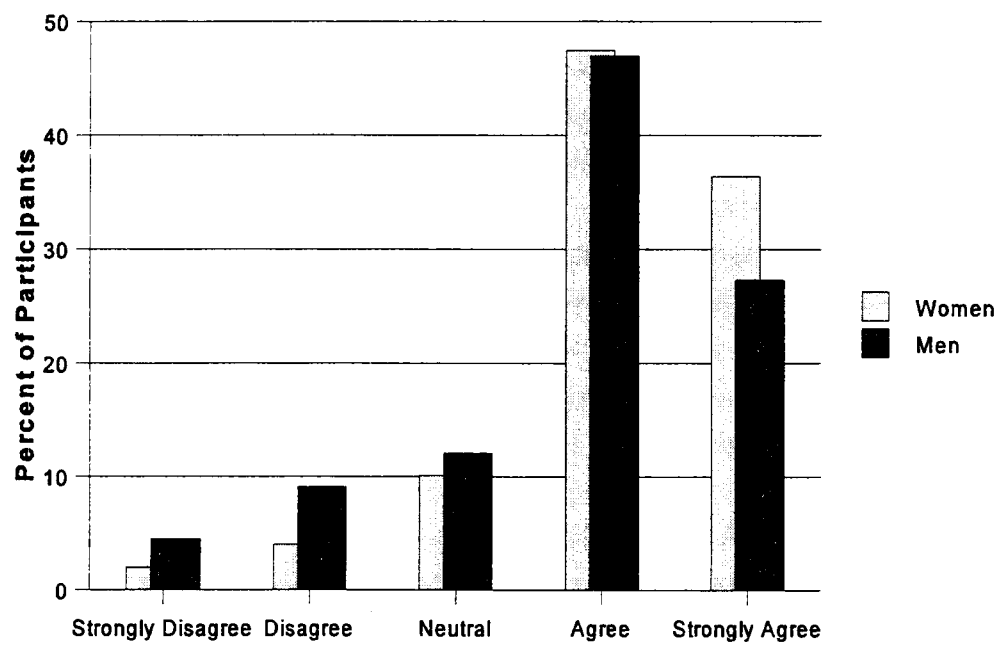


Figure 10. Perception of being able to pursue the degree of choice while continuing to meet the NCAA academic requirements

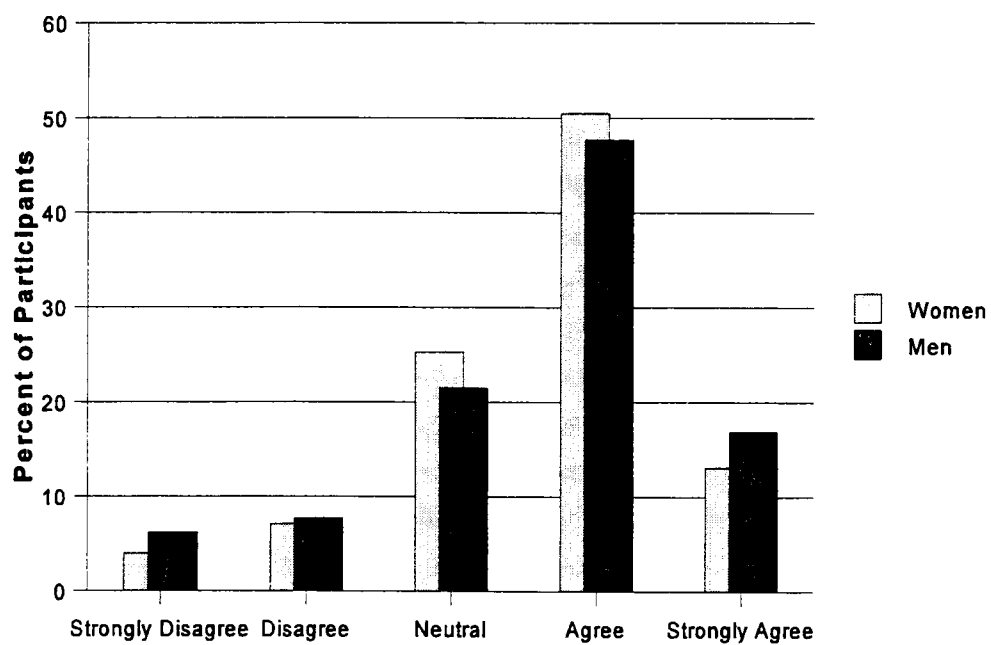


Figure 11. Perception of the NCAA academic requirements being reasonable

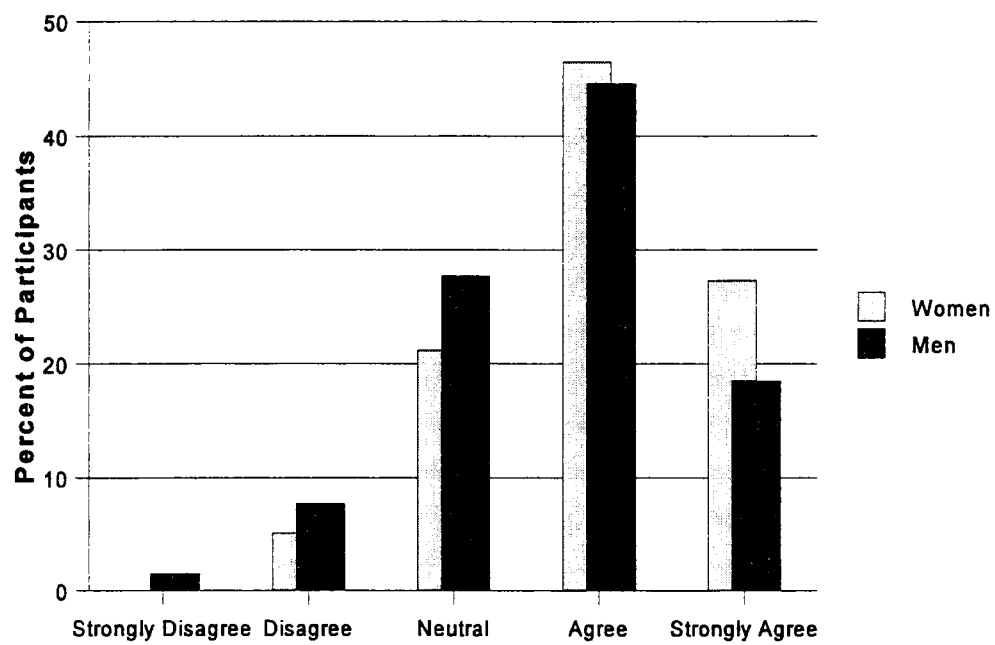


Figure 12. Perception of the NCAA GPA requirements being reasonable

neutral, and about 74% agreed or strongly agreed. About 9% of the men disagreed or strongly disagreed, about 28% were neutral, and about 63% agreed or strongly agreed. The majority of both genders felt the NCAA GPA requirements were reasonable or were neutral about the topic.

When comparing women's and men's perceptions of being able to easily earn the 24 hours each year required by the NCAA, the Pearson Chi square results ($p = .490$) were not significant (Figure 13). The results for the men and women revealed similarly distributed results. About 6% of women disagreed or strongly disagreed, about 25% were neutral, and about 69% agreed or strongly agreed. About 14% of the men disagreed or strongly disagreed, about 23% were neutral, and about 63% agreed or strongly agreed. Thus, the majority of both genders tended to feel that it was easy to earn the 24 hours required by the NCAA or were neutral about the topic.

Gender x Time Questions

An individual review of each question relating to time constraints as compared by gender was also conducted. A cross-tabulation of Gender x Question was calculated and Chi square was applied for the review of the individual questions dealing with time constraint stressors.

The Pearson Chi square results were not significant ($p = .402$) when comparing women's and men's perceptions of being able to think of schoolwork during practice (Figure 14). The results for the men and women revealed similarly distributed results. About 36% of women disagreed or strongly disagreed, about 21% were neutral, and about 41% agreed or strongly agreed. About 30% of the men disagreed or strongly

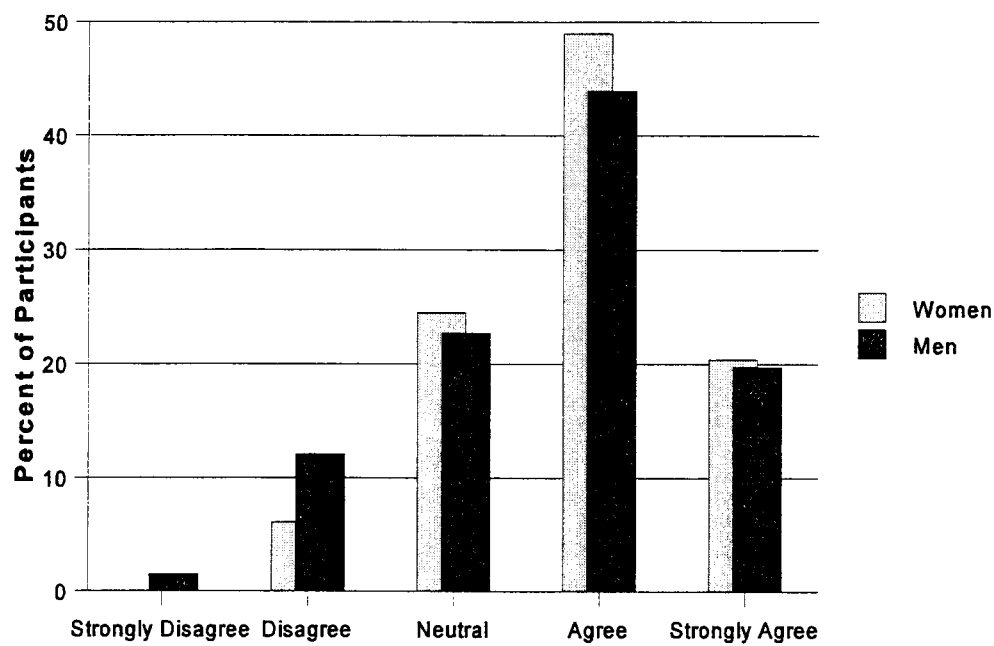


Figure 13. Perception of the ease of being able to achieve the 24 hours each year required by the NCAA

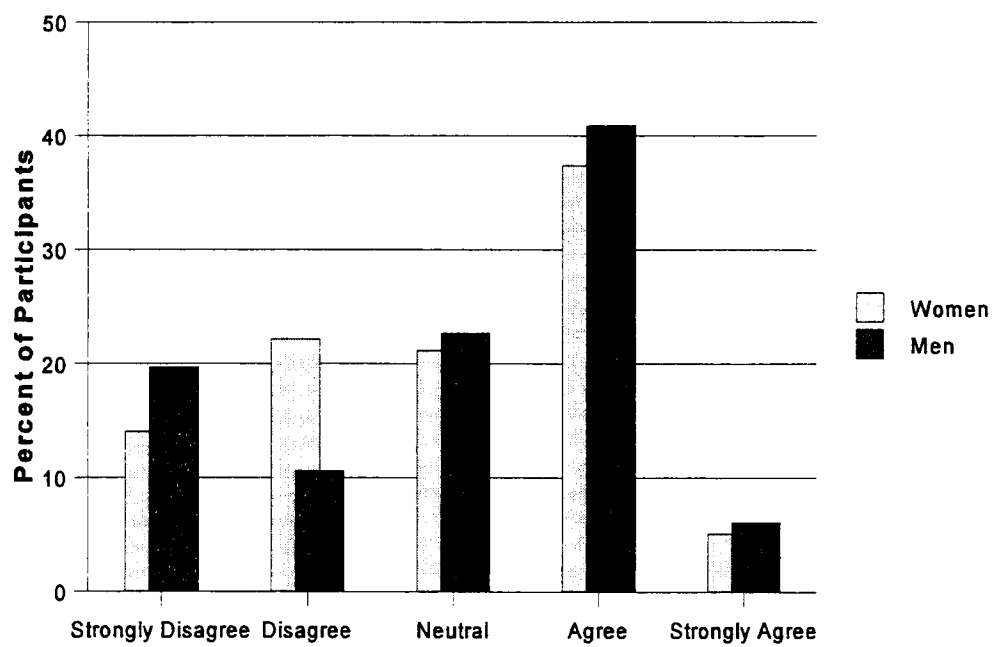


Figure 14. Perceptions of being able to think of schoolwork during practice

disagreed, about 23% were neutral, and about 47% agreed or strongly agreed. Thus, approximately 50% of both genders tended to feel that it was easy to think about schoolwork during practice. The perceptions of the remainder athletes distributed about equally amongst neutral and the lower end of the scale (Figure 14).

The Pearson Chi square results were not significant ($p = .188$) when comparing men and women's perceptions of being able to easily make it to class the day after an away game. The results for women and men revealed similarly distributed results (Figure 15). About 47% of women disagreed or strongly disagreed, about 27% were neutral, and about 25% agreed or strongly agreed. About 66% of the men disagreed or strongly disagreed, about 18% were neutral, and about 15% agreed or strongly agreed. The largest percentage of both genders felt that it was difficult to make it to class the day after an away game or were neutral about the topic.

When comparing women's and men's perceptions of having to miss class due to away games, the Pearson Chi square results ($p = .066$) were not significant. The results for women and men revealed similar patterns of results (Figure 16). About 8% of women disagreed or strongly disagreed, about 9% were neutral, and about 83% agreed or strongly agreed. About 15% of men disagreed or strongly disagreed, about 5% were neutral, and about 80% agreed or strongly agreed. The majority of both genders tended to feel that they frequently missed classes due to away games.

The Pearson Chi square results were significant ($p = .040$) when comparing women's and men's perceptions of being able to study easily after practice (Figure 17). The results for gender did not reveal evenly distributed results. About 66% of women

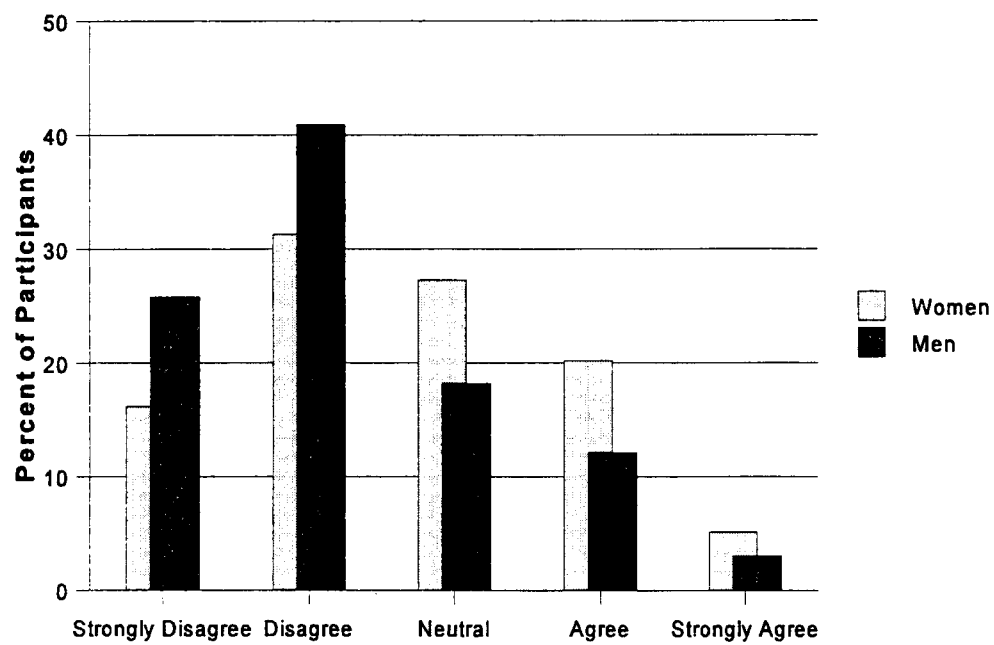


Figure 15. Perceptions of being able to make it to class easily the day after an away game

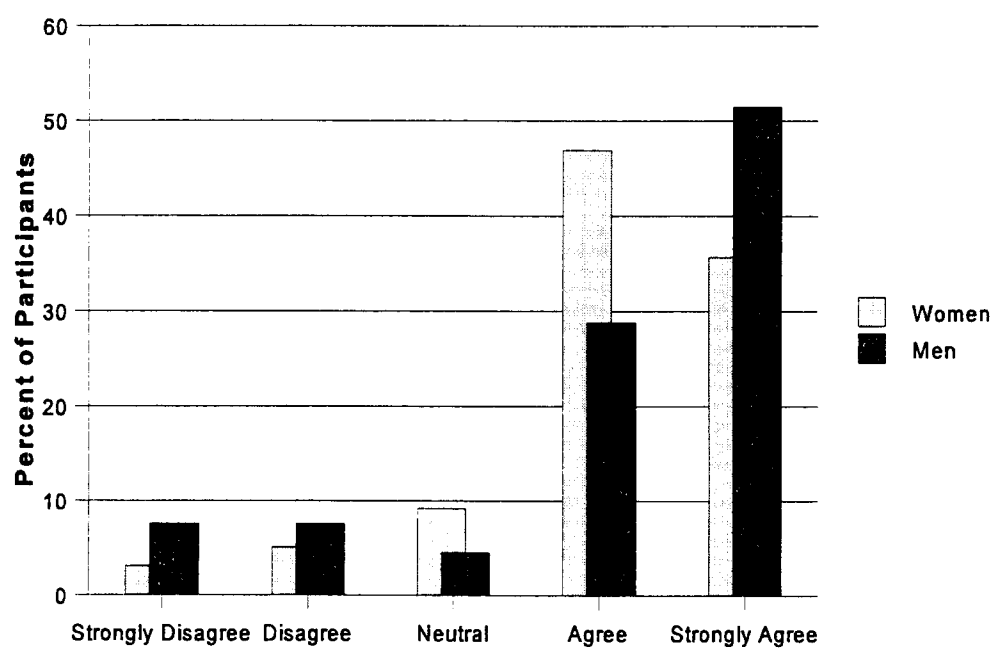


Figure 16. Perceptions of not missing class due to away games

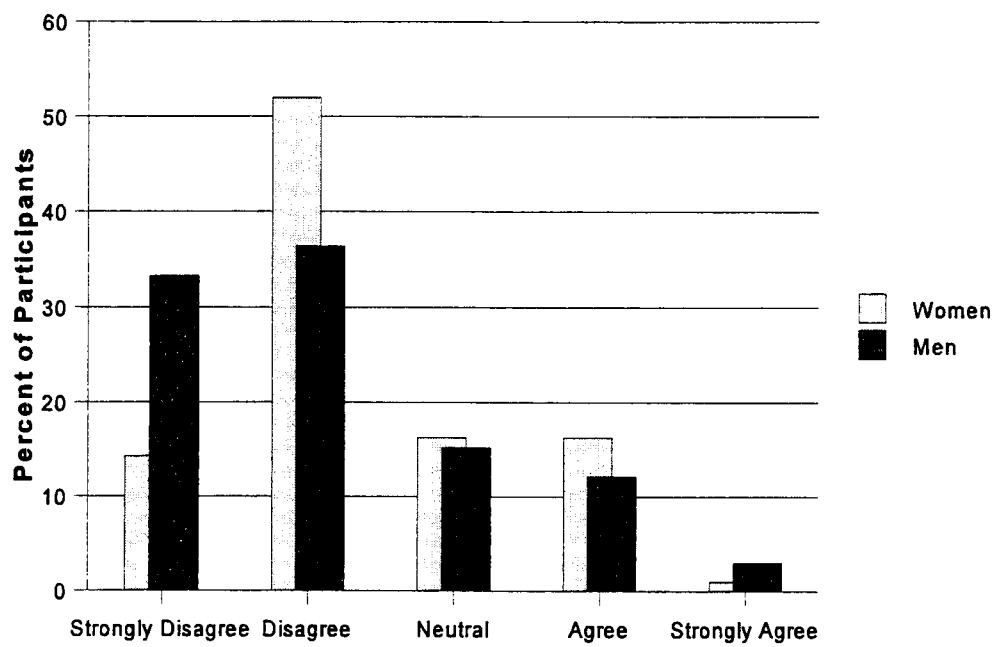


Figure 17. Perceptions of being able to study easily after practice

disagreed or strongly disagreed, about 16% were neutral, and about 17% agreed or strongly agreed. About 70% of the men disagreed or strongly disagreed, about 15% were neutral, and about 15% agreed or strongly agreed. The majority of women tended to disagree with being able to easily study after practice. On the other hand, the majority of the men strongly disagreed or simply disagreed with being able to easily study after practice.

When comparing women's and men's perceptions of being able to easily find time to study while traveling to away games, the Pearson Chi square results ($p = .282$) were not significant (Figure 18). The results for women and men revealed similarly distributed results. About 52% of women disagreed or strongly disagreed, about 21% were neutral, and about 26% agreed or strongly agreed. About 60% of the men disagreed or strongly disagreed, about 23% were neutral, and about 17% agreed or strongly agreed. Thus, the majority of both genders tended to feel it was more stressful to find time to study while traveling to away games, although the perceptions appeared to differ according to the individual athletes rather than the subgroups of men and women.

Discussion of Gender Patterns

Because the mean scores for men and women were close to neutral, it was important to take a closer look at the patterns of scoring for men and women. For injuries the patterns of scoring revealed stress carry-over effects into academic performances for men and women or were high in the neutral area of the Likert scale.

The patterns of scoring for NCAA requirements revealed high percentages of perceptions in the agree or strongly agree Likert responses. Only minimal percentages of

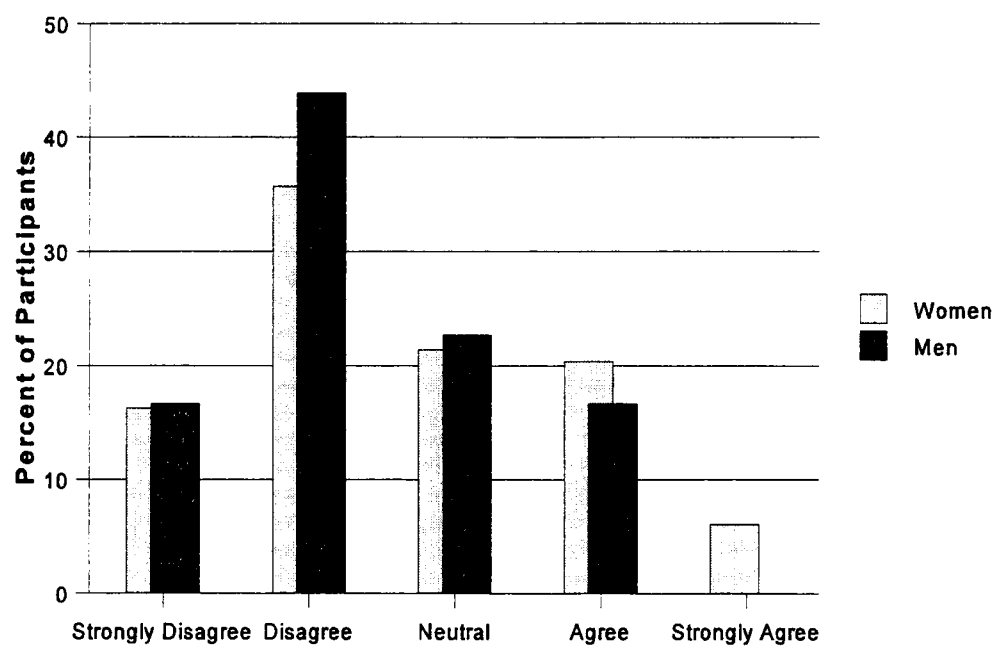


Figure 18. Perceptions of being able to easily find time to study while traveling to away games

men and women strongly disagreed or disagreed with NCAA requirements having stress carry-over effects into academics. Thus, the majority of both genders tended to feel their academic performances were positively effected by the NCAA continuing eligibility requirements.

In the Likert responses of time constraints received, men's and women's perceptions were consistent with each other. Men and women tended to feel time constraints caused carry-over effects into their academic performances.

Although the directions of the perceptions of men and women differed according to stressor type, injury and time constraint stressor types were perceived as having a carry-over effect into academic performances. Perceptions of injury stressors having a negative effect on academics appeared to be consistent for men and women, with the exception of the question in which finding time to study was the factor. For this question the perceptions of the athletes tended to follow the pattern of time constraints instead of the patterns of injury stressors (Table 3, Figure 1). Because the responses of both genders tended to be distributed differently for types of questions, perceptions of time constraint stressors appeared to be related to the specific time constraint rather than to gender.

Perhaps gender differences can be explained by examining the motivation associated with the stressor types perceived to be troublesome. It may be conceivable that women experience more difficulty getting motivated when faced with physical stressors (e.g., injury type stressors), and the men tended to experience reduced motivation when facing non-physical stressors (e.g., effectively budgeting time to study).

The literature was not available to support the gender differences relative to types of motivation. A review of gender differences regarding preferred modes or types of motivation types may be necessary in future research.

Team Results

To examine the patterns of the perceptions about each stress category cross-tabulations of Team x Question were calculated and Chi square was applied for the review of the individual questions dealing with the three athletic stressors. The results of these analyses are organized according to the three athletic stressors: (a)injuries, (b) NCAA requirements, and (c) time constraints, and are followed by a discussion.

Team x Injury Questions

An individual review of each question relating to athletic injuries as compared by team's was also conducted. A cross tabulation of Team x Question was calculated and Chi square was applied for the review of the individual questions dealing with athletic injury stressors. The Pearson Chi square results produced $p = .055$ when comparing the teams' perceptions of going to class while injured as a stressor (Figure 19). The results for the women's softball and swimming teams and men's baseball, golf and track and field teams revealed almost similarly distributed results. For the women's golf, tennis, and track and field teams the cross tabulation uncovered comparably distributed results. At least 50% disagreed or strongly disagreed. The women's crew team revealed uneven results, approximately 55% were neutral. Similar results were also produced by the men's swimming and tennis teams, a minimum of 57% agreed or strongly agreed. The

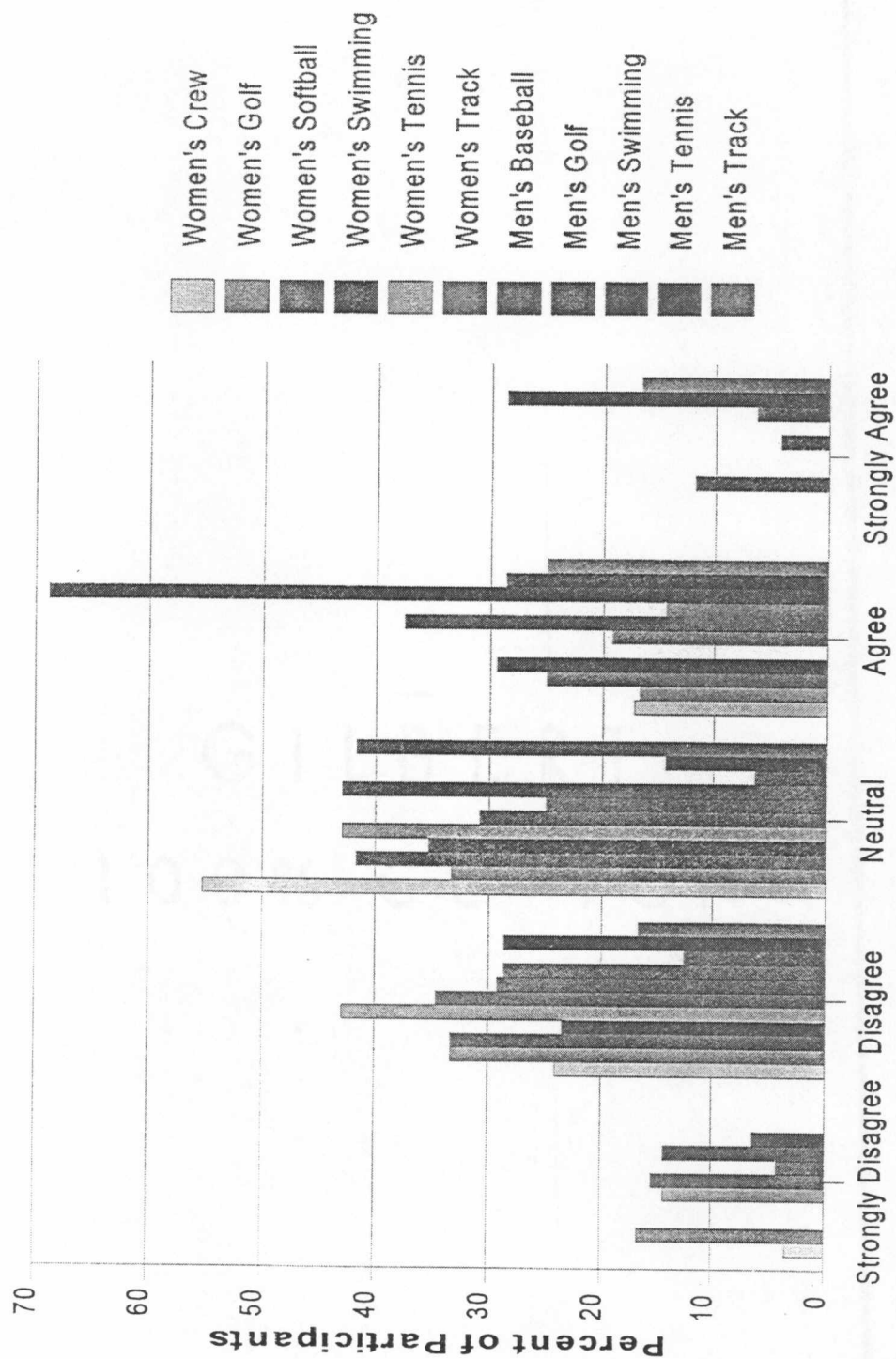


Figure 19. Perception of feeling motivated to go to class while injured

team results revealed uneven patterns of perceptions of stress carry-over effects into academic performances.

The Pearson Chi square results were not significant ($p = .865$) when comparing the team's perceptions of spending time studying while injured as a stressor (Figure 20). The results for women's softball and swimming teams and the men's baseball and track and field teams revealed similarly distributed results. At least 52% disagreed or strongly disagreed. For the women's crew team and men's golf and swimming teams, the cross tabulation uncovered similarly distributed results also, about 57% of the responses were neutral. Similar results were also produced by the women's and men's tennis teams, a minimum of 85% disagreed or were neutral. Finally, similarly distributed results were produced by the women's golf and track and field teams. The majority of the teams were neutral or tended to feel it was difficult to study while injured (Figure 20).

When comparing the team's perceptions of having reduced stress while having an injury, the Pearson Chi square results ($p = .148$) were not significant (Figure 21). The results for the women's golf, softball, swimming, tennis, and track and field teams and the men's swimming, tennis, and track and field teams reveal similar patterns of results. A minimum 62% of athletes on these teams disagreed or strongly disagreed. For the women's crew team and men's golf team, the cross tabulation also uncovered similarly distributed results, about 50% were neutral, and about 10% agreed or strongly agreed. A majority of the teams tended to feel that daily stress increased while injured or were neutral about the topic (Figure 21).

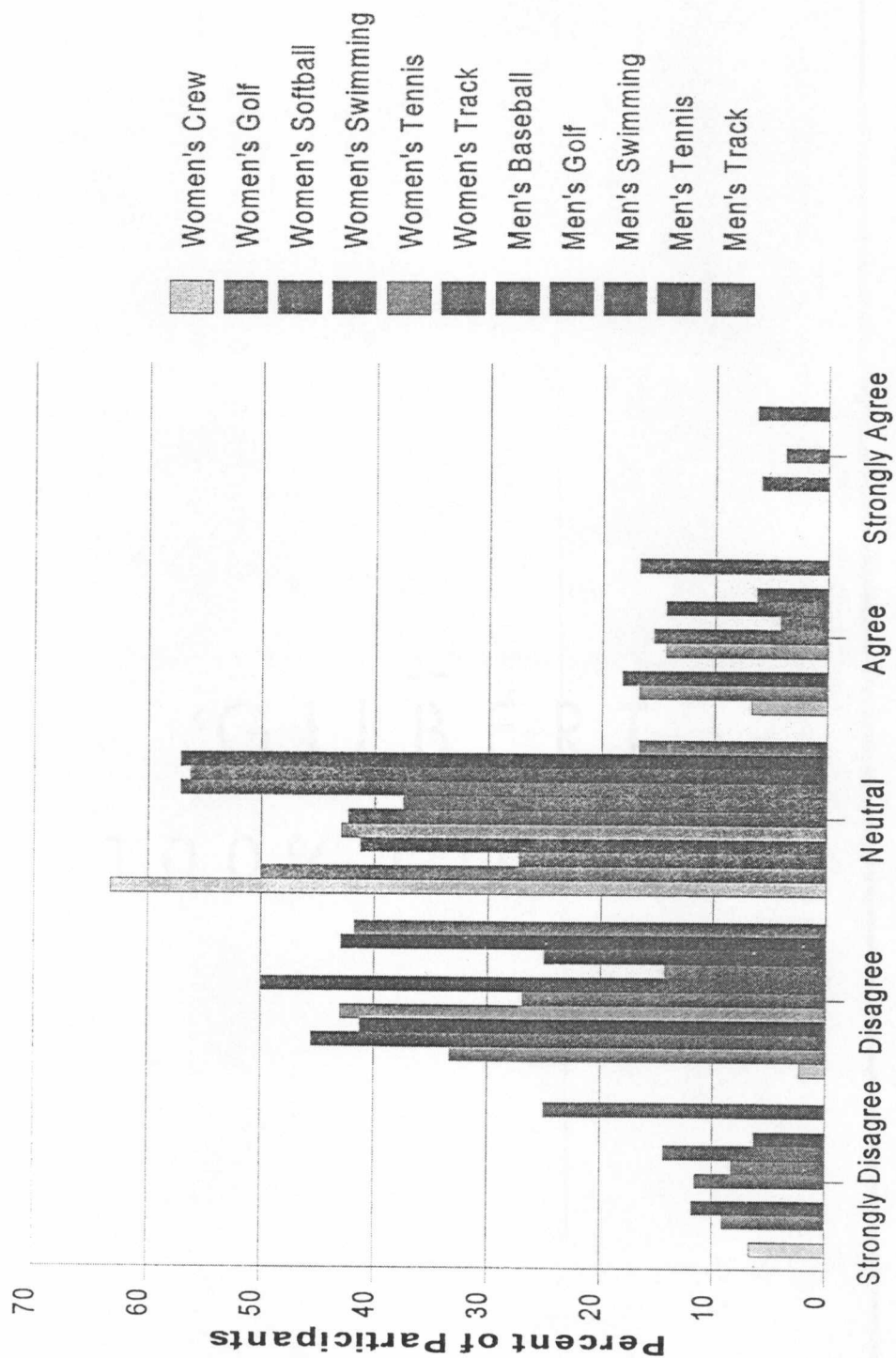


Figure 20. Perception of studying while injured as a stressor

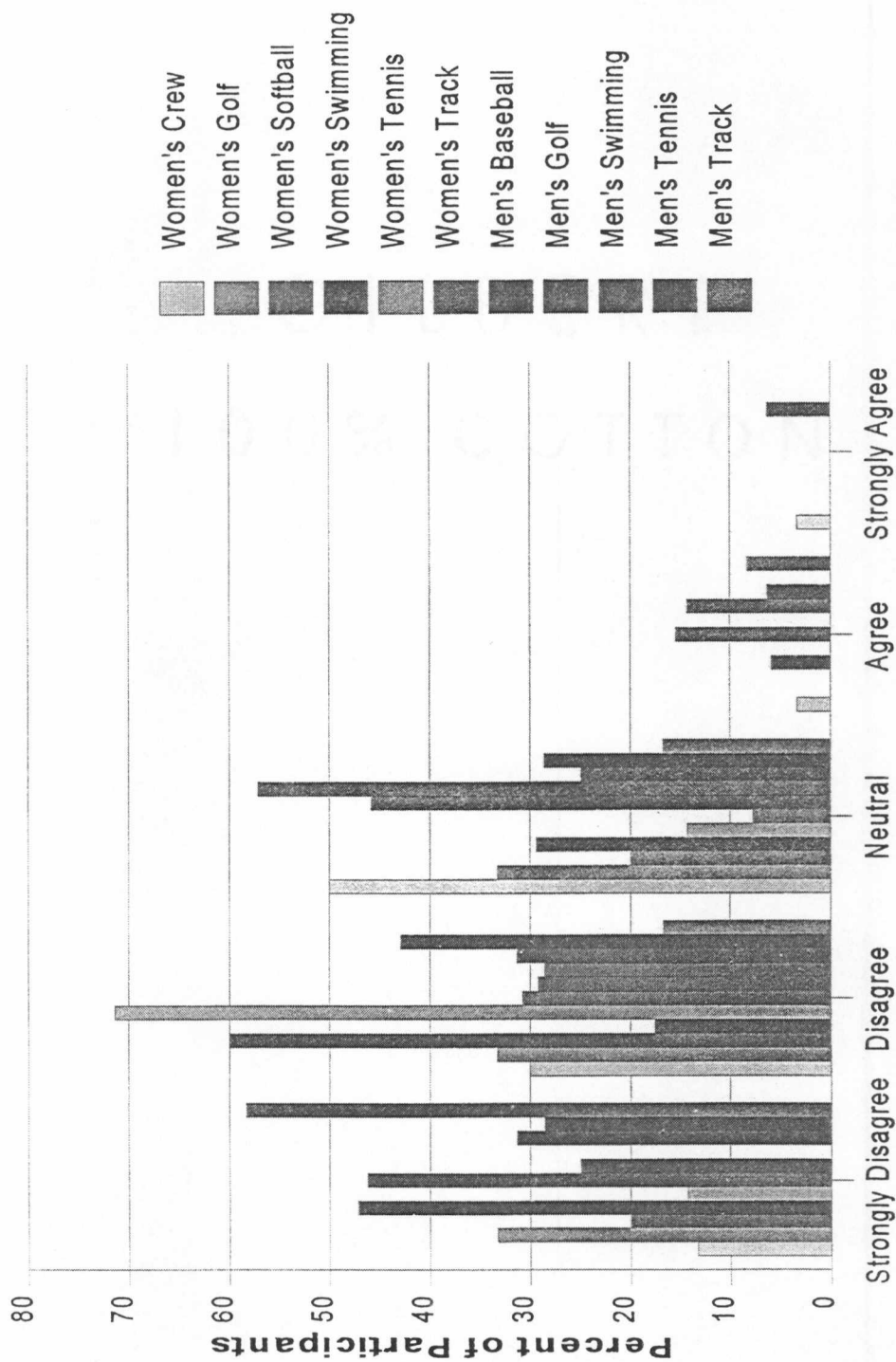


Figure 21. Perceptions that having an injury reduced daily stress

When comparing the team's perceptions of having additional time to study while injured, the Pearson Chi square results ($p = .170$) were not significant (Figure 22). The results for the women's swimming team and the men's swimming and tennis teams revealed almost evenly distributed results. For the women's crew, golf, and tennis teams and the men's golf team the cross tabulation uncovered similarly distributed results. For all four of these teams about 45% were neutral, and about 20% agreed or strongly agreed that they have additional time to study while injured. Similar results were also produced by the women's softball team and men's baseball and track and field teams, a minimum of 77% disagreed, strongly disagreed or were neutral regarding having additional time to study while injured. Because the patterned responses within teams and across teams followed a more normal distribution of responses across the entire Likert scale, the results regarding the teams' perceptions of having additional time to study while injured appeared to be more individual in nature rather than team perceptions (Figure 22).

When comparing the teams' perceptions of being able to easily focus on studies while injured, the Pearson Chi square results ($p = .112$) were not significant (Figure 23). The results for the women's crew, golf, and softball teams and the men's baseball and golf teams revealed similarly distributed results, about 50% of the student-athletes on these teams were neutral in choice. For the men and women's swimming, tennis, and track and field teams, the cross tabulation uncovered similarly distributed results, about 55% disagreed or strongly disagreed, about 30% were neutral, and about 15% agreed or strongly agreed. The majority of the teams were neutral or tended to feel it was difficult to focus on their studies while injured (Figure 23).

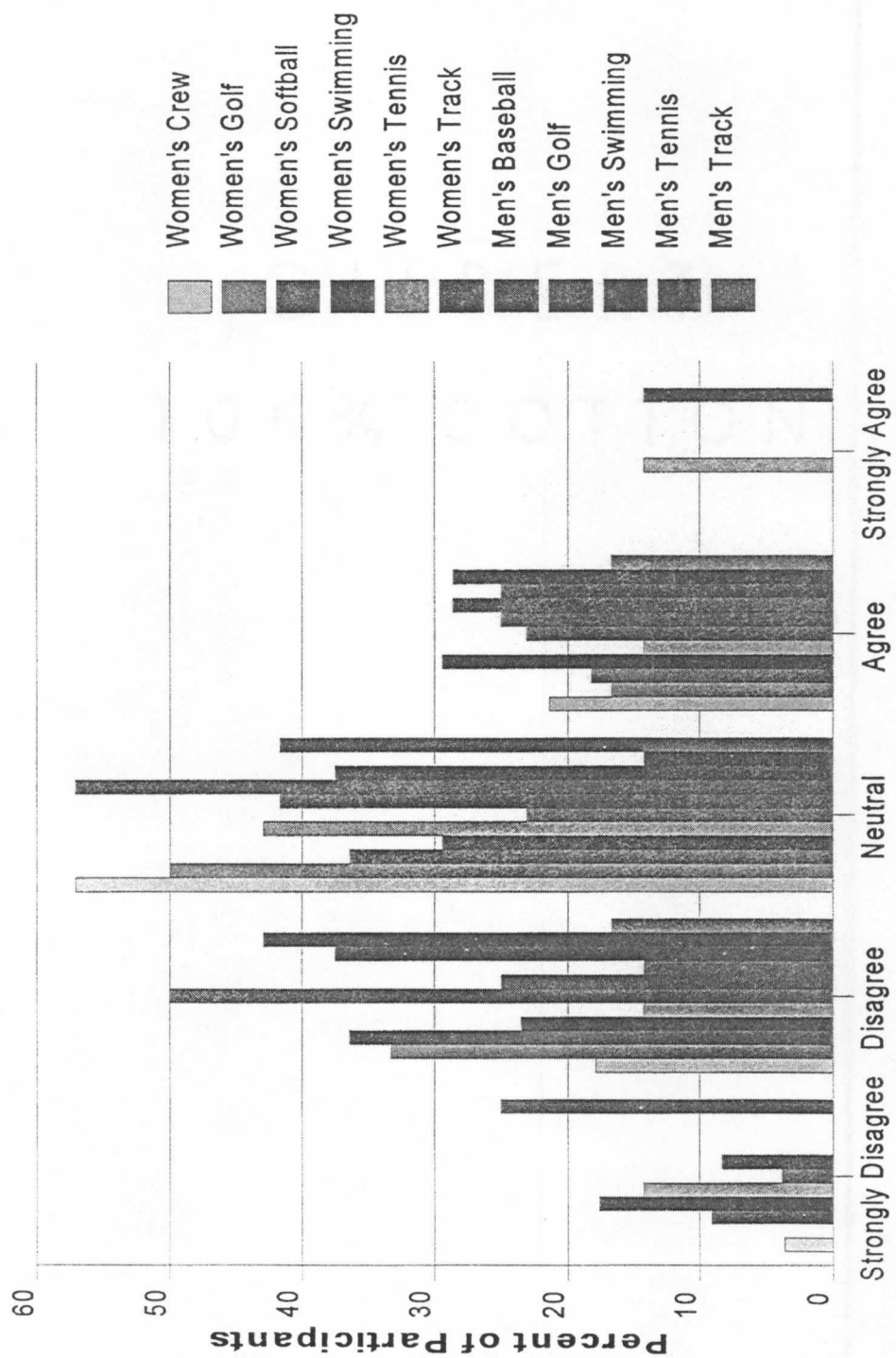


Figure 22. Perceptions of having additional time to study while injured

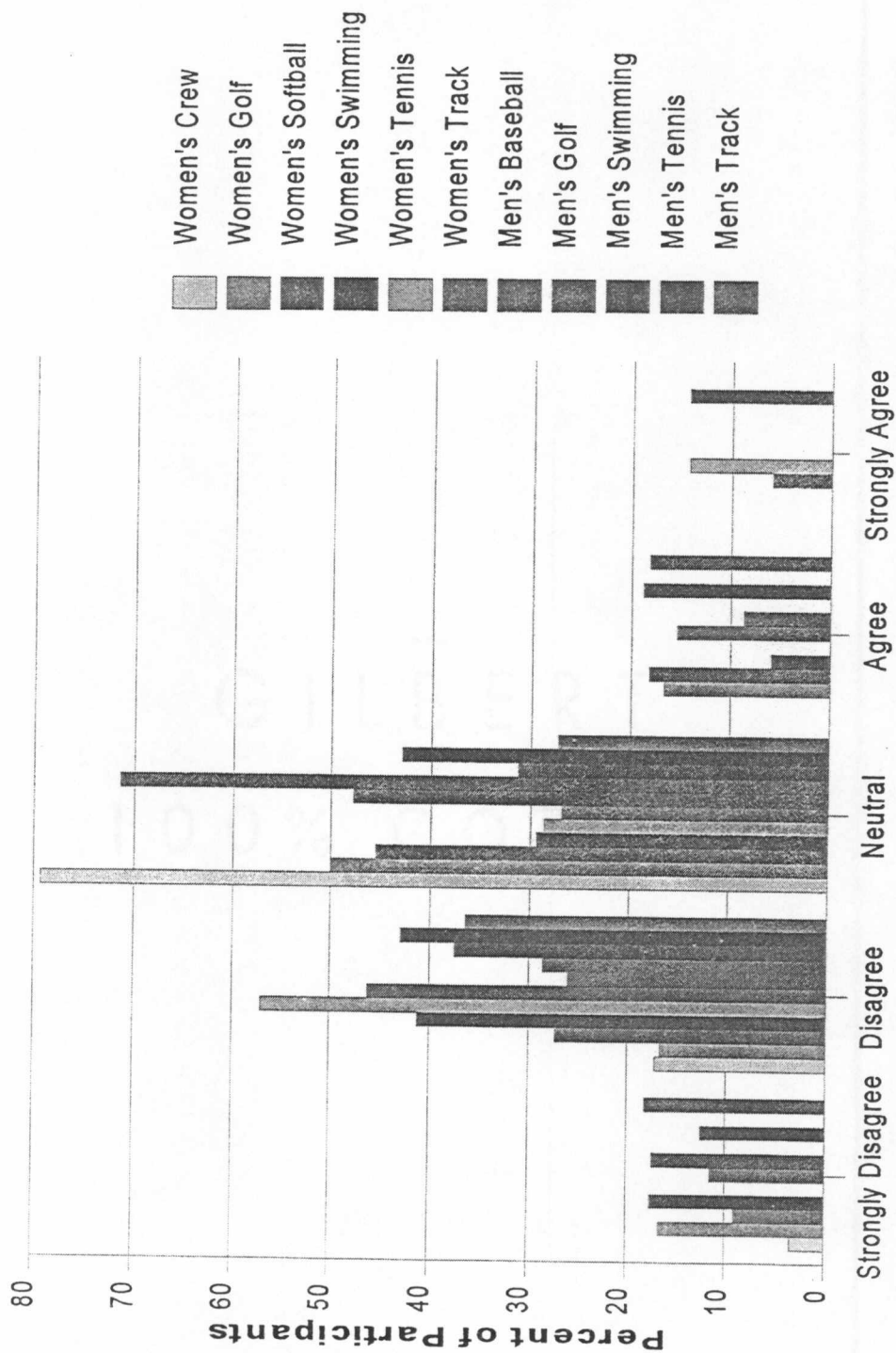


Figure 23. Perceptions that focusing on studies become easier when enduring an injury

Team x NCAA Questions

A separate review of each individual question relating to NCAA requirements as compared by team was also conducted. A cross tabulation of Team x Question was calculated and Chi square was applied for the review of the individual questions dealing with NCAA continuing eligibility stressors. The Pearson Chi square results were not significant ($p = .095$) when comparing the team's perceptions of being able to take the classes of their choice while continuing to meet the NCAA academic requirements (Figure 24). The results for the women's crew, softball, swimming, tennis, and track and field teams and the men's baseball, golf, swimming, tennis and track and field teams revealed similar patterns of results. About 70% of the student-athletes agreed or strongly agreed about being able to take the classes of their choice while continuing to meet the NCAA academic requirements. For the women's golf team, the cross tabulation also uncovered similarly distributed results, about 67% were neutral in decision the remaining 33% agreed. The majority of teams tended to feel they were able to take the classes of choice while continuing to meet the NCAA academic requirements or they were neutral about the topic (Figure 24).

The Pearson Chi square results were not significant ($p = .458$) when comparing the team's perceptions of being able to pursue the degree of their choice while continuing to meet the NCAA academic requirements (Figure 25). The results for all teams with exception of the men's baseball team revealed similarly distributed results, about 75% of the student-athletes agreed or strongly agreed. For the men's baseball, the cross tabulation uncovered equally distributed results, about 29% disagreed or strongly

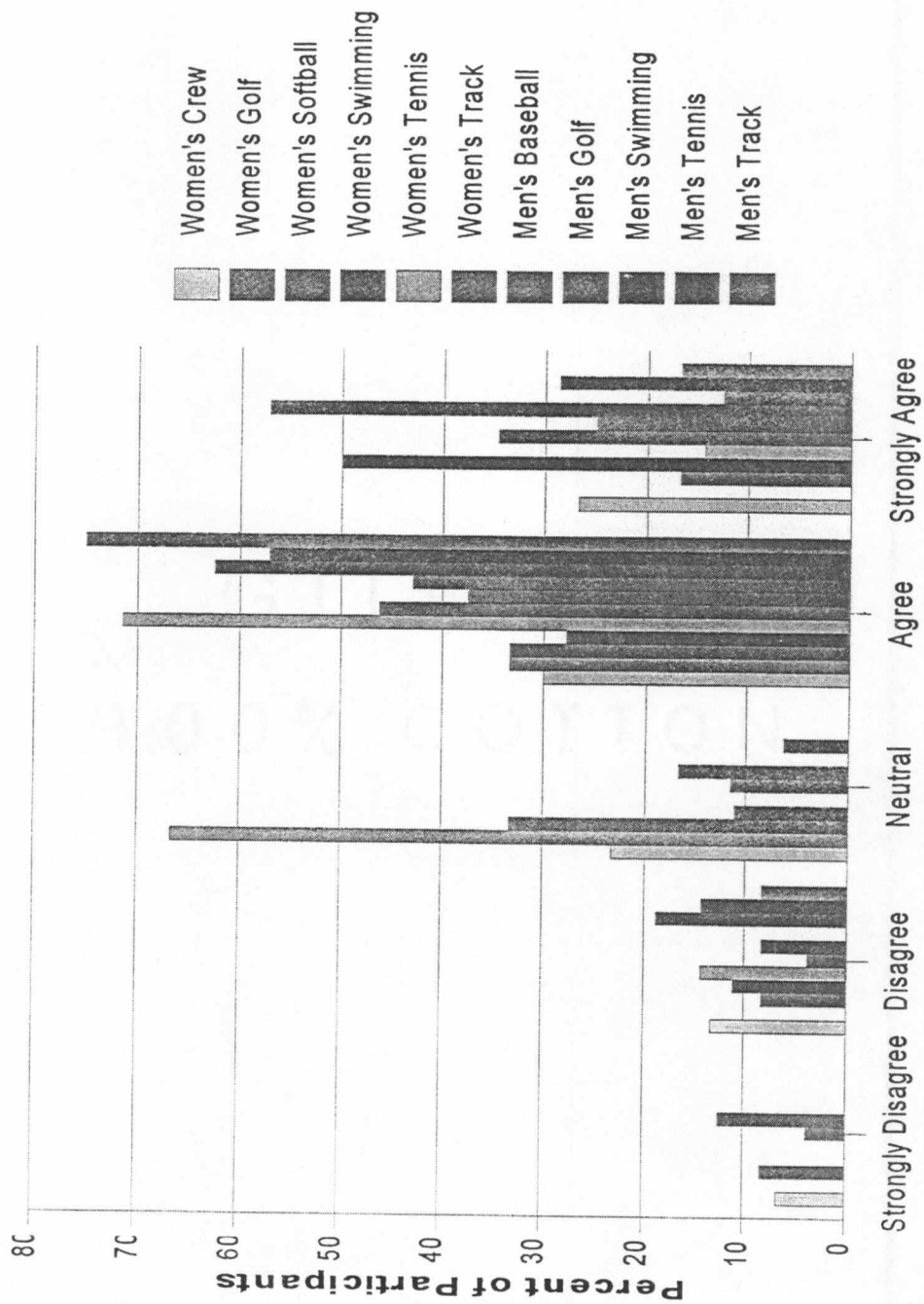


Figure 24. Perception of being able to take the classes of choice while continuing to meet the NCAA academic requirements

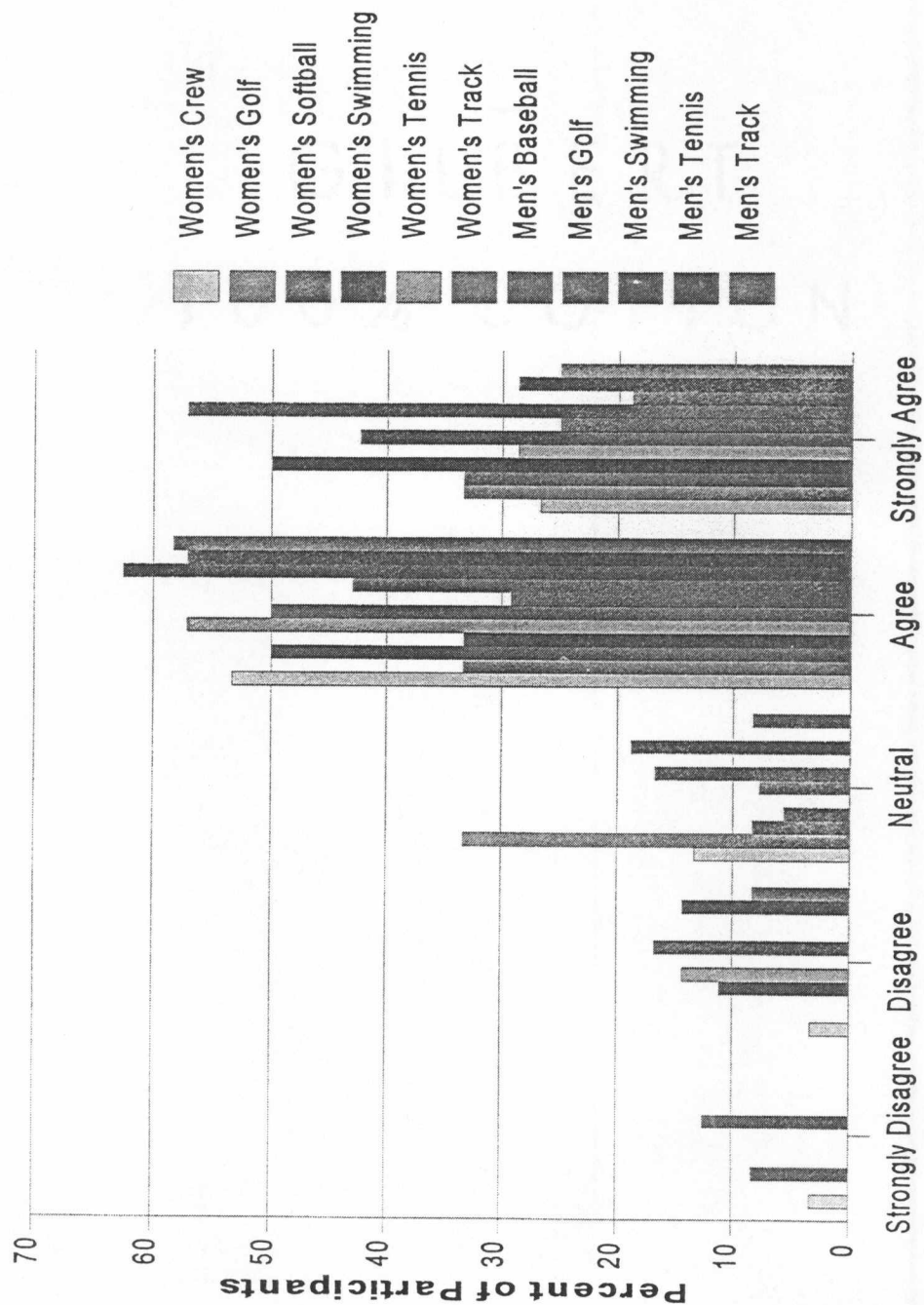


Figure 25. Perception of being able to pursue the degree of choice while continuing to meet the NCAA academic requirements

disagreed, about 17% were neutral, and about 55% agreed or strongly agreed. Thus, the majority of the teams tended to feel they could pursue the degree of their choice (Figure 25).

When comparing the team's perceptions of the NCAA academic requirements being reasonable, the Pearson Chi square results ($p = .714$) were not significant (Figure 26). The results for all teams with exception of the women's golf team revealed similarly distributed results, about 75% of the student-athletes agreed or strongly agreed that the NCAA academic requirements were reasonable. For the women's golf, the cross tabulation uncovered similarly distributed results, about 33% disagreed or strongly disagreed, about 17% were neutral, and about 50% agreed or strongly agreed. Thus, with the exception of women's golf the majority of the teams tended to feel the NCAA academic requirements were reasonable or were neutral about the topic. Although not significant, the women's golf team showed a split in their perceptions about the NCAA academic requirements being reasonable, approximately 33% strongly disagreed and about 50% agreed (Figure 26).

When comparing the team's perceptions of the NCAA GPA requirements being reasonable, the Pearson Chi square results ($p = .168$) were not significant (Figure 27). The results for all sports revealed similar patterns of results, about 3% of student-athletes disagreed or strongly disagreed, about 12% were neutral, and about 75% agreed or strongly agreed. The majority of the teams tended to feel the NCAA GPA requirements were reasonable or were neutral about the topic (Figure 27).

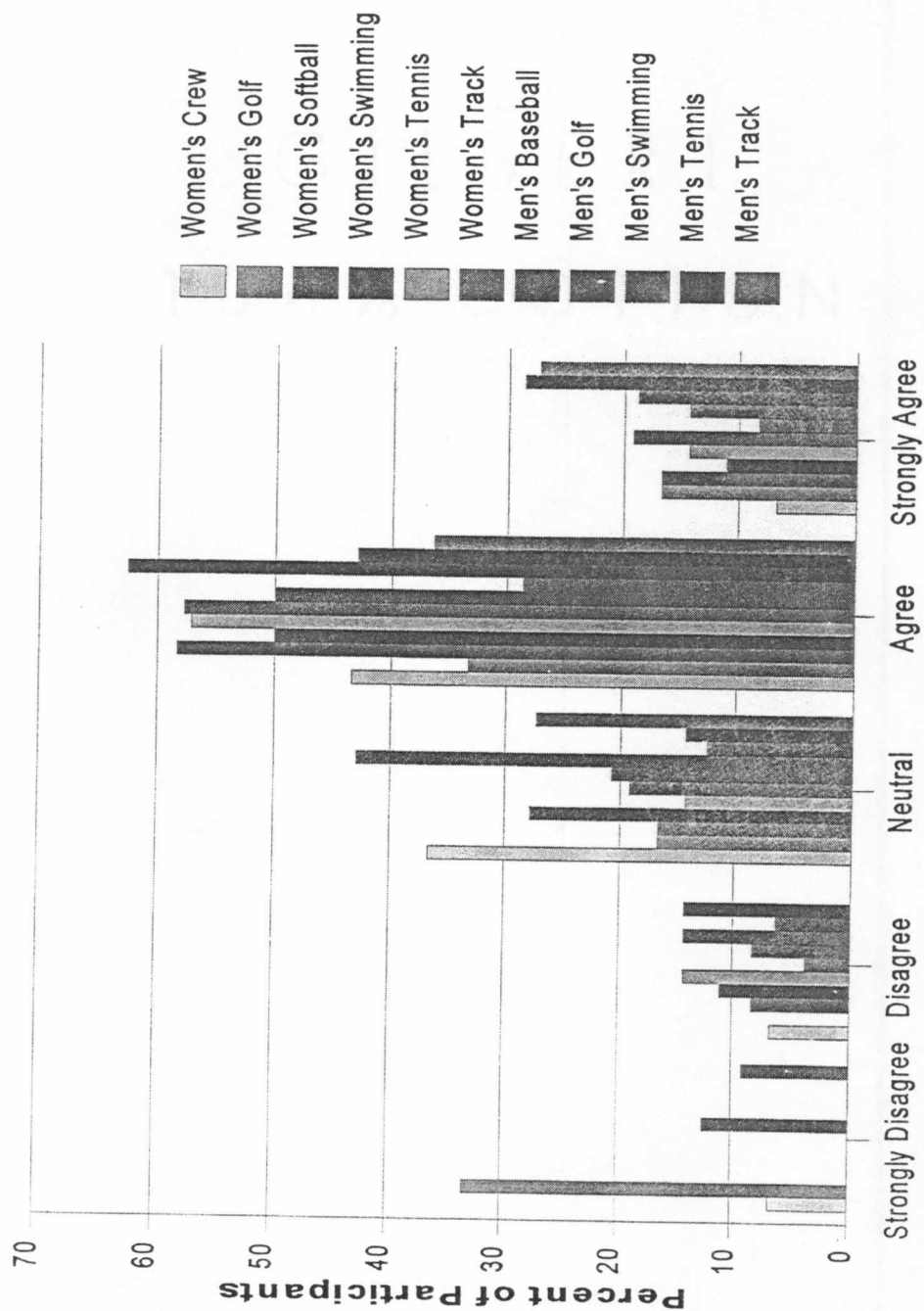


Figure 26. Perception of the NCAA academic requirements being reasonable

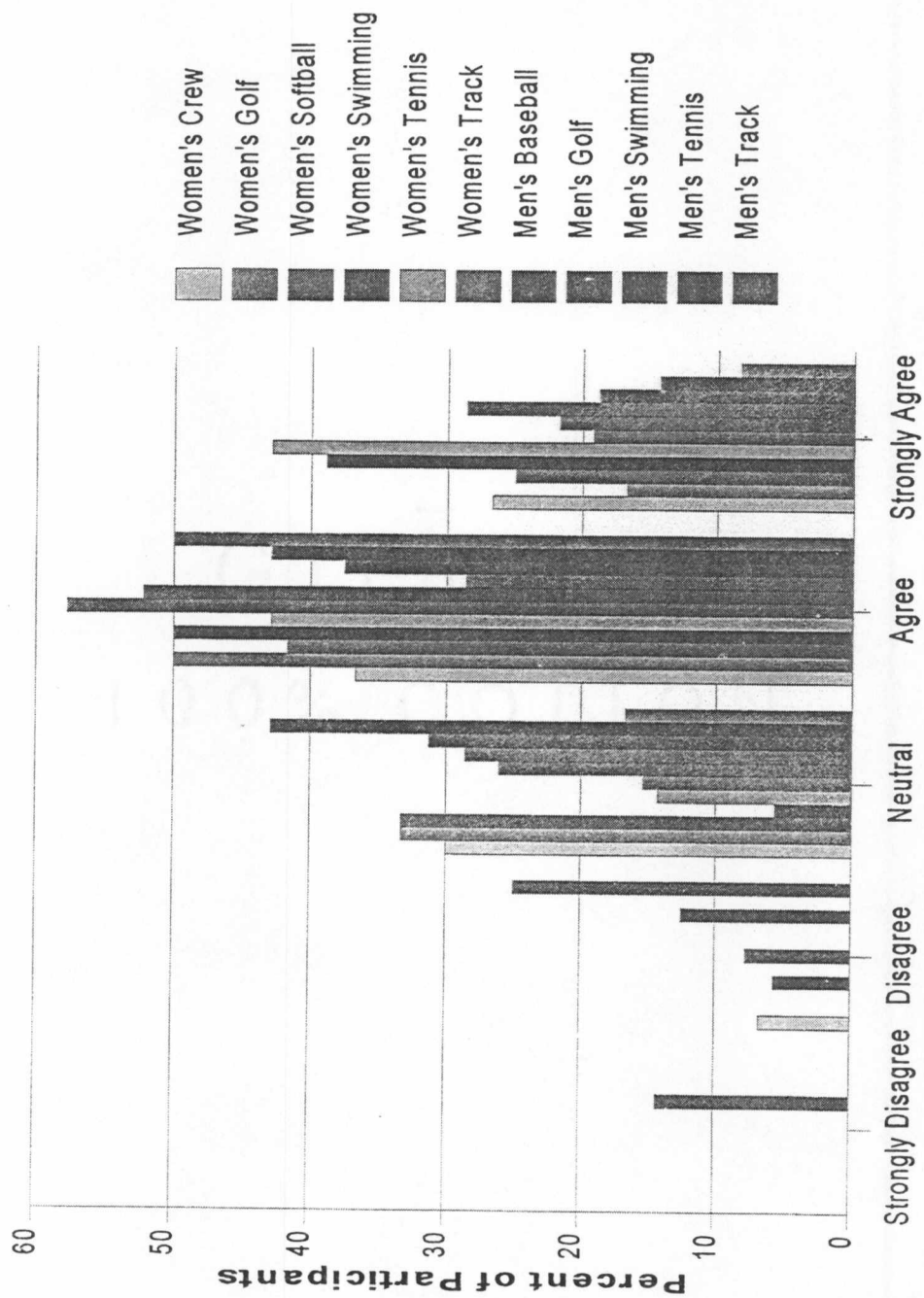


Figure 27. Perception of the NCAA GPA requirements being reasonable

When comparing the teams' perceptions of being able to easily earn the 24 hours each year required by the NCAA, the Pearson Chi square results ($p = .356$) were not significant (Figure 28). The results for all teams excluding the men's tennis and track and field teams revealed similarly distributed results, about 2% of the student-athletes disagreed or strongly disagreed, about 25% were neutral, and about 73% agreed or strongly agreed. For men's tennis team, the cross tabulation uncovered similarly distributed results as well, about 14% disagreed or strongly disagreed, about 57% were neutral, and about 29% agreed or strongly agreed. The results for the men's track and field team revealed evenly distributed results, about 25% of the student-athletes disagreed or strongly disagreed, about 33% were neutral, and about 43% agreed or strongly agreed. The majority of teams felt they could easily meet the 24 hour requirement set by the NCAA or were neutral about the topic (Figure 28).

Team x Time Questions

An individual review of each question relating to time constraints as compared by team categories was also conducted. A cross tabulation of Team x Question was calculated and Chi square was applied for the review of the individual questions dealing with time constraint stressors. The Pearson Chi square results were not significant ($p = .211$) when comparing the teams' perceptions of being able to think of schoolwork during practice (Figure 29). The results for the women's golf and softball teams and the men's golf and tennis teams revealed similarly distributed results, about 25% of the student-athletes disagreed, strongly disagreed, and were neutral, and about 75% agreed or strongly agreed. For the remaining teams, the cross tabulation revealed approximately

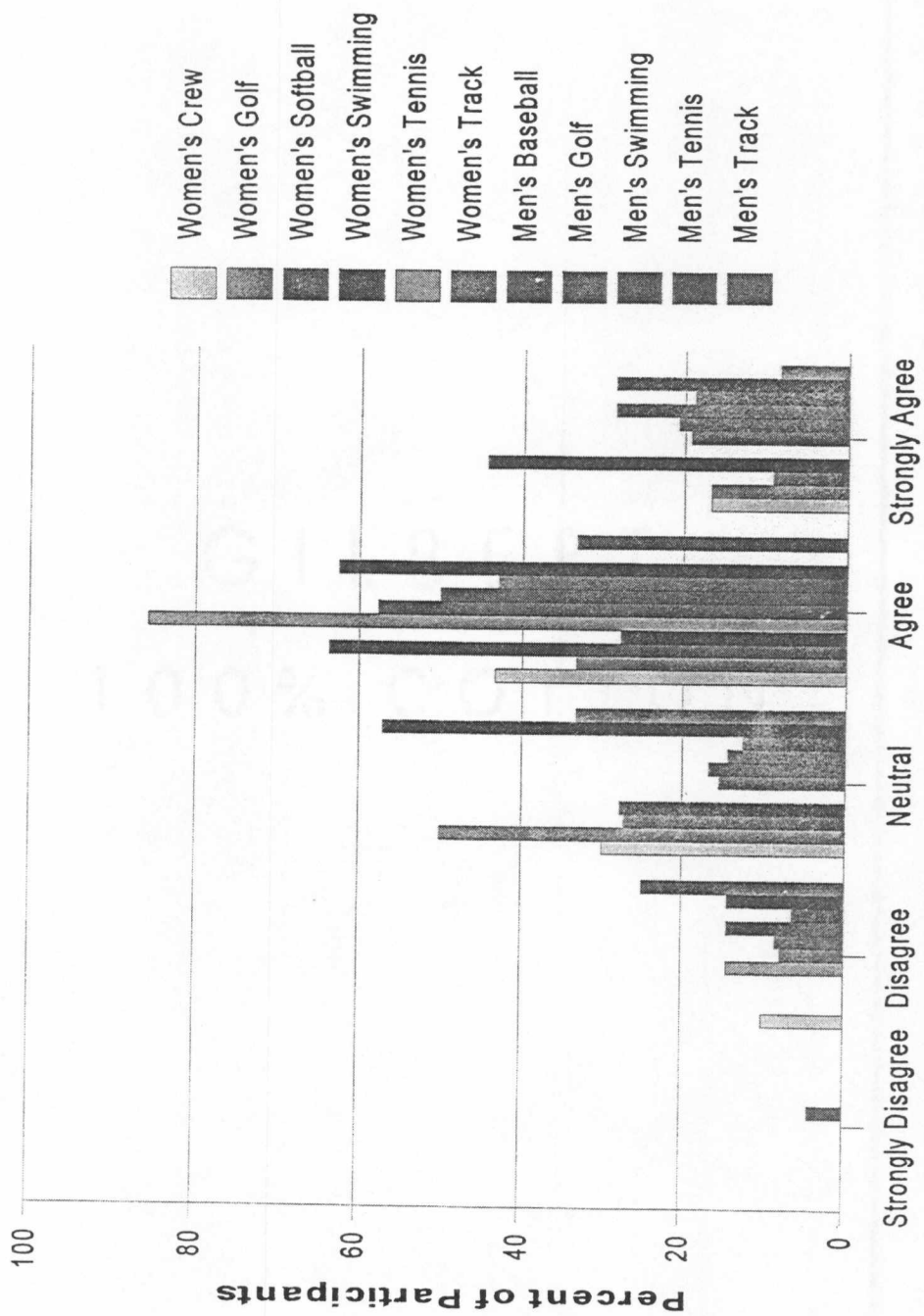


Figure 28. Perception of the ease of being able to achieve the 24 hours each year required by the NCAA

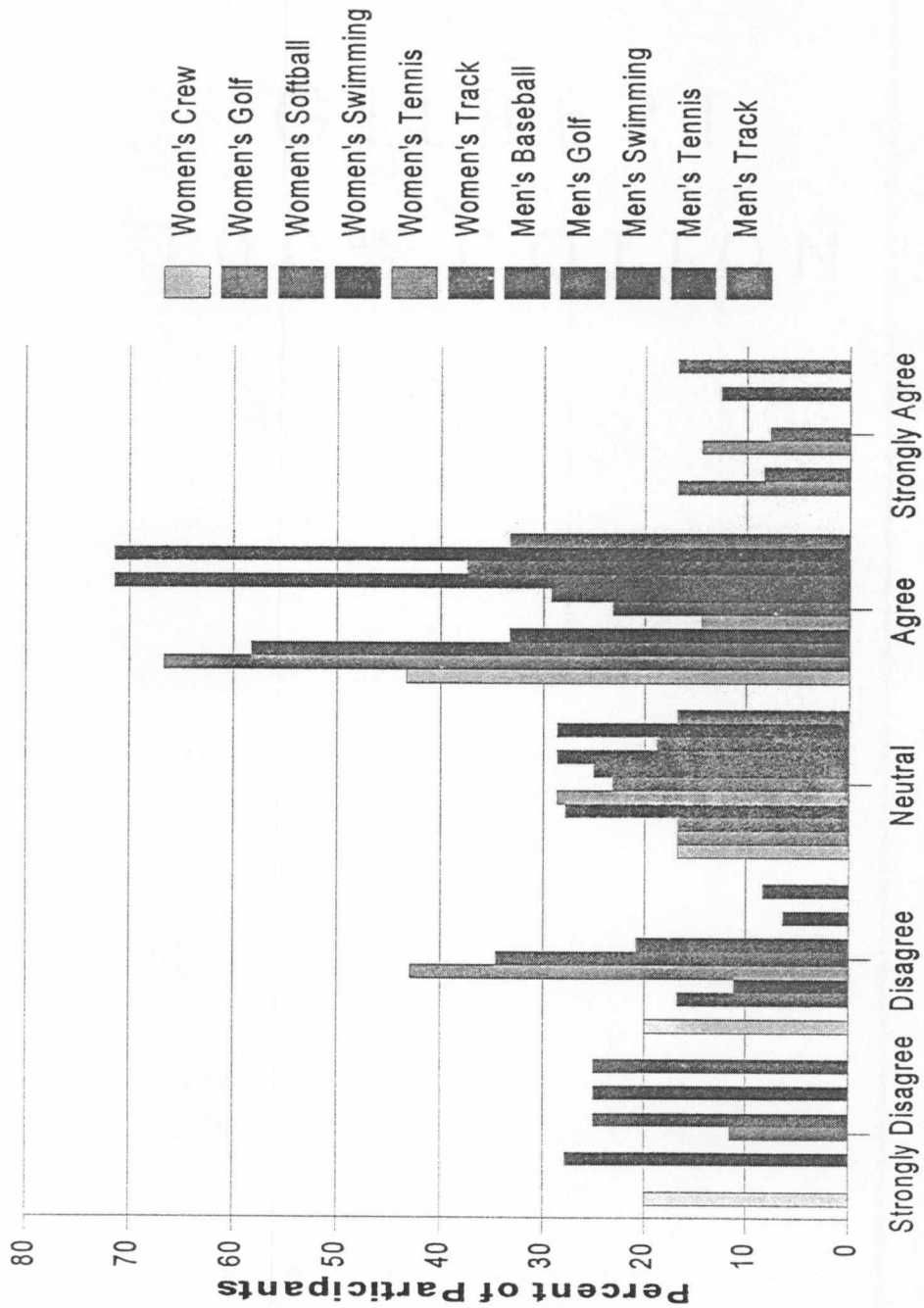


Figure 29. Perceptions of being able to think of schoolwork during practice

equally distributed results, about 34% disagreed or strongly disagreed, about 33% were neutral, and about 33% agreed or strongly agreed. Thus, the perceptions of the teams were distributed unevenly, but the majority of the teams felt it was easy to think about schoolwork during practice (Figure 29).

The Pearson Chi square results were not significant ($p = .095$) when comparing the teams' perceptions of being able to easily make it to class the day after an away game (Figure 30). The results for the women's crew and track and field teams and the men's golf team revealed evenly distributed results, about 35% of the student-athletes disagreed or strongly disagreed, about 30% were neutral, and about 35% agreed or strongly agreed. For the women's golf, softball, swimming, tennis, and track and field teams and the men's baseball, swimming, tennis, and track and field teams, the cross tabulation uncovered similarly distributed results, about 68% disagreed or strongly disagreed, about 18% were neutral, and about 14% agreed or strongly agreed. The men's golf team and women's crew team felt it was easy to make it to class the day after an away game or were neutral about the topic. Thus with exception of men's golf and women's crew the majority of the teams felt it was difficult to make it to class the day after an away game or were neutral about the topic (Figure 30).

When comparing the team's perceptions of having to miss class due to away games, the Pearson Chi square results ($p = .235$) were not significant (Figure 31). The results for all teams excluding the men's golf team revealed similarly distributed results; that is about 70% of the student-athletes disagreed or strongly disagreed, about 15% were neutral, and about 10% agreed or strongly agreed. For the men's golf team, the cross

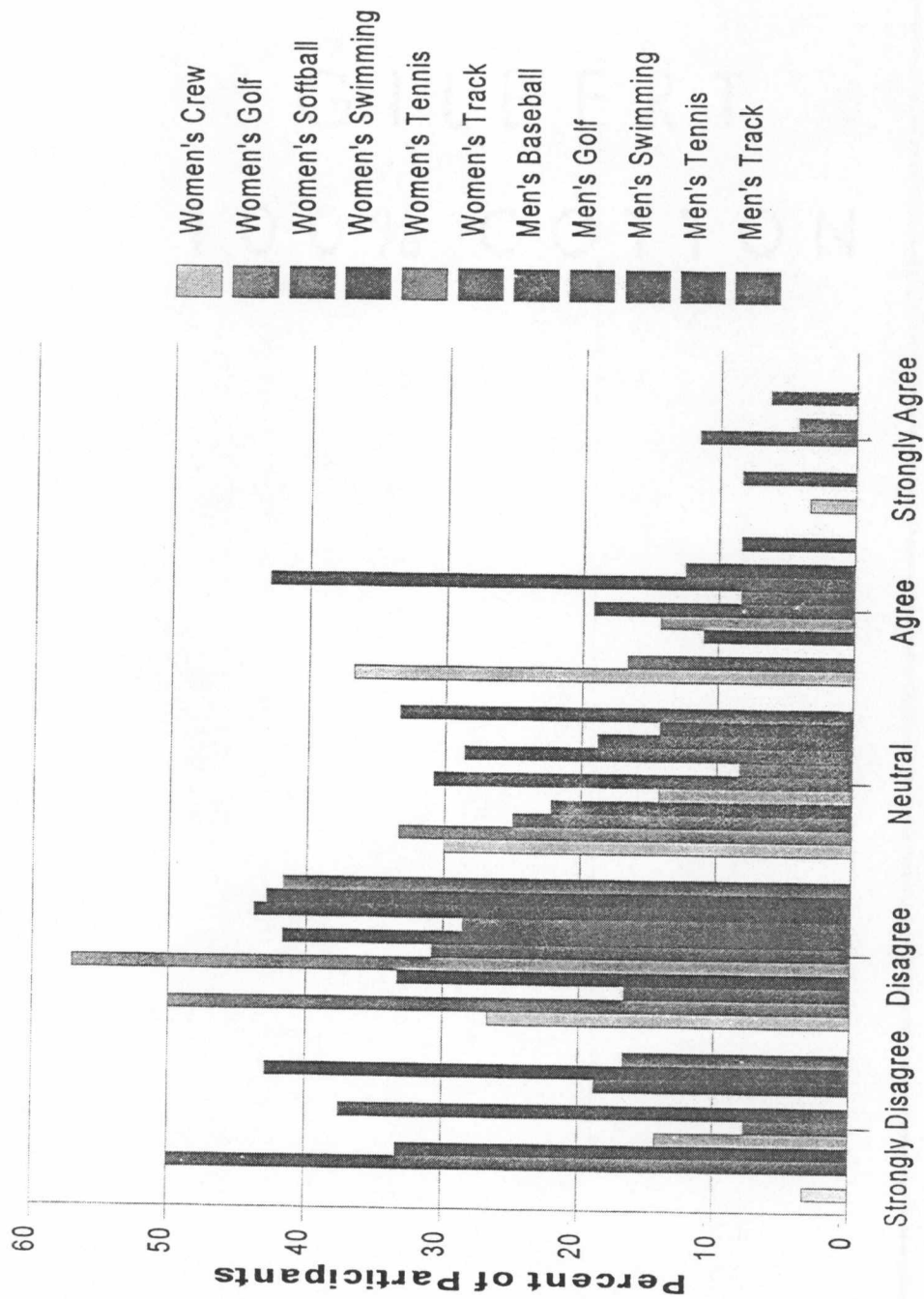


Figure 30. Perceptions of being able to make it to class easily the day after an away game

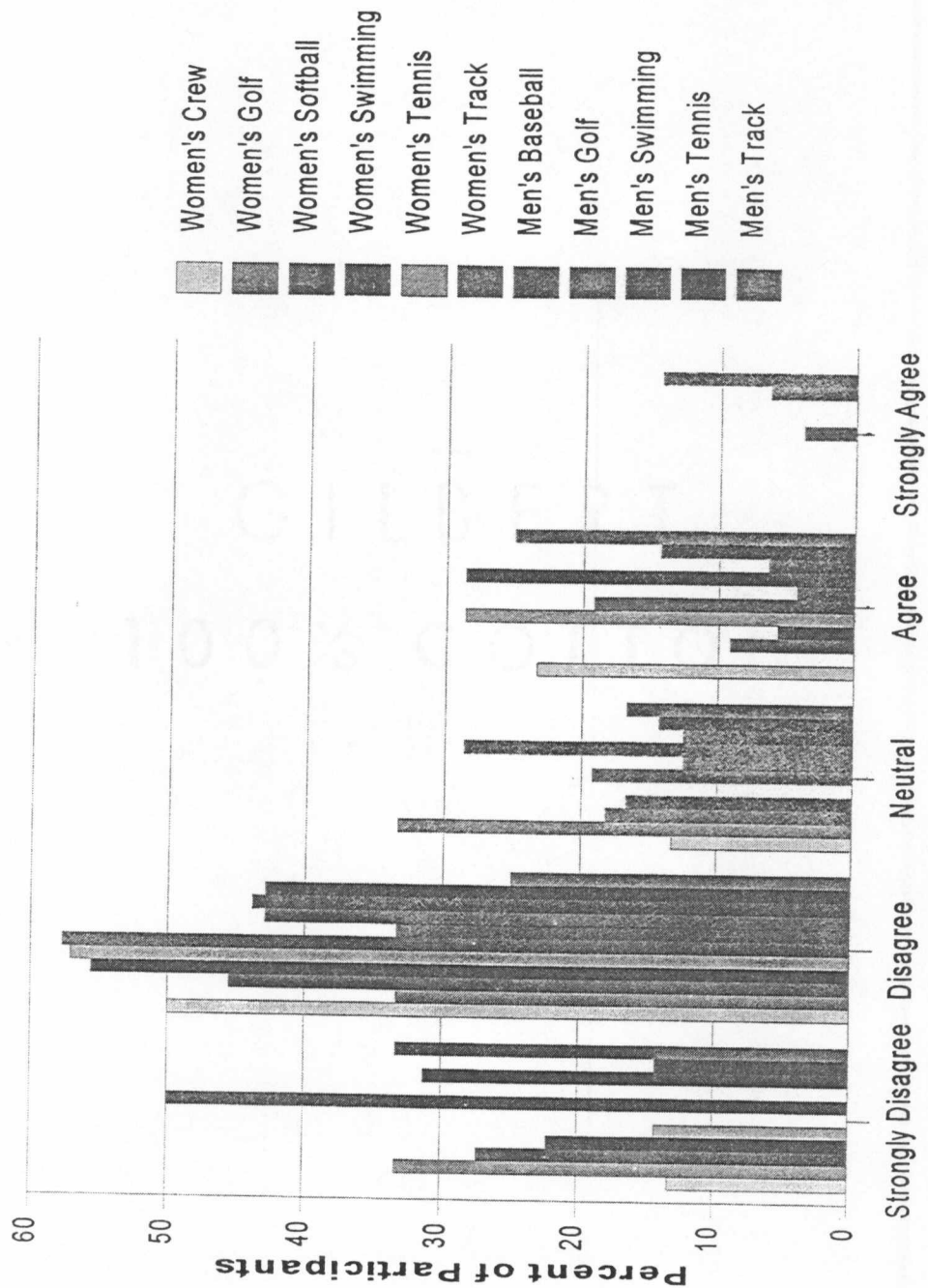


Figure 31. Perceptions of not missing class due to away games

tabulation uncovered similarly distributed results, about 43% disagreed or strongly disagreed, about 27% were neutral, and about 29% agreed or strongly agreed. Thus, the majority of the teams tended to feel they frequently missed class due to away games (Figure 31).

The Pearson Chi square results were significant ($p = .006$) when comparing the team's perceptions of being able to study easily after practice (Figure 32). The results for all the teams revealed similar patterns of distributed results, about 10% of women disagreed or strongly disagreed, about 16% were neutral, and about 74% agreed or strongly agreed. Thus the majority of the teams tended to feel it was easy to study after practice (Figure 32).

When comparing women's and men's perceptions of being able to easily find time to study while traveling to away games, the Pearson Chi square results ($p = .044$) were significant (Figure 33). The results for the women's crew, golf, swimming, and tennis teams and the men's swimming, tennis, and track and field teams revealed similarly distributed results, about 57% of the student-athletes disagreed or strongly disagreed, about 29% were neutral, and about 14% agreed or strongly agreed. For the women's softball and track and field teams and the men's baseball and golf teams, the cross tabulation uncovered equally distributed results, about 29% disagreed or strongly disagreed, about 29% were neutral, and about 42% agreed or strongly agreed. Thus, the majority of teams had mixed perceptions or tended to feel it was not difficult to find time to study while traveling to away games (Figure 33).

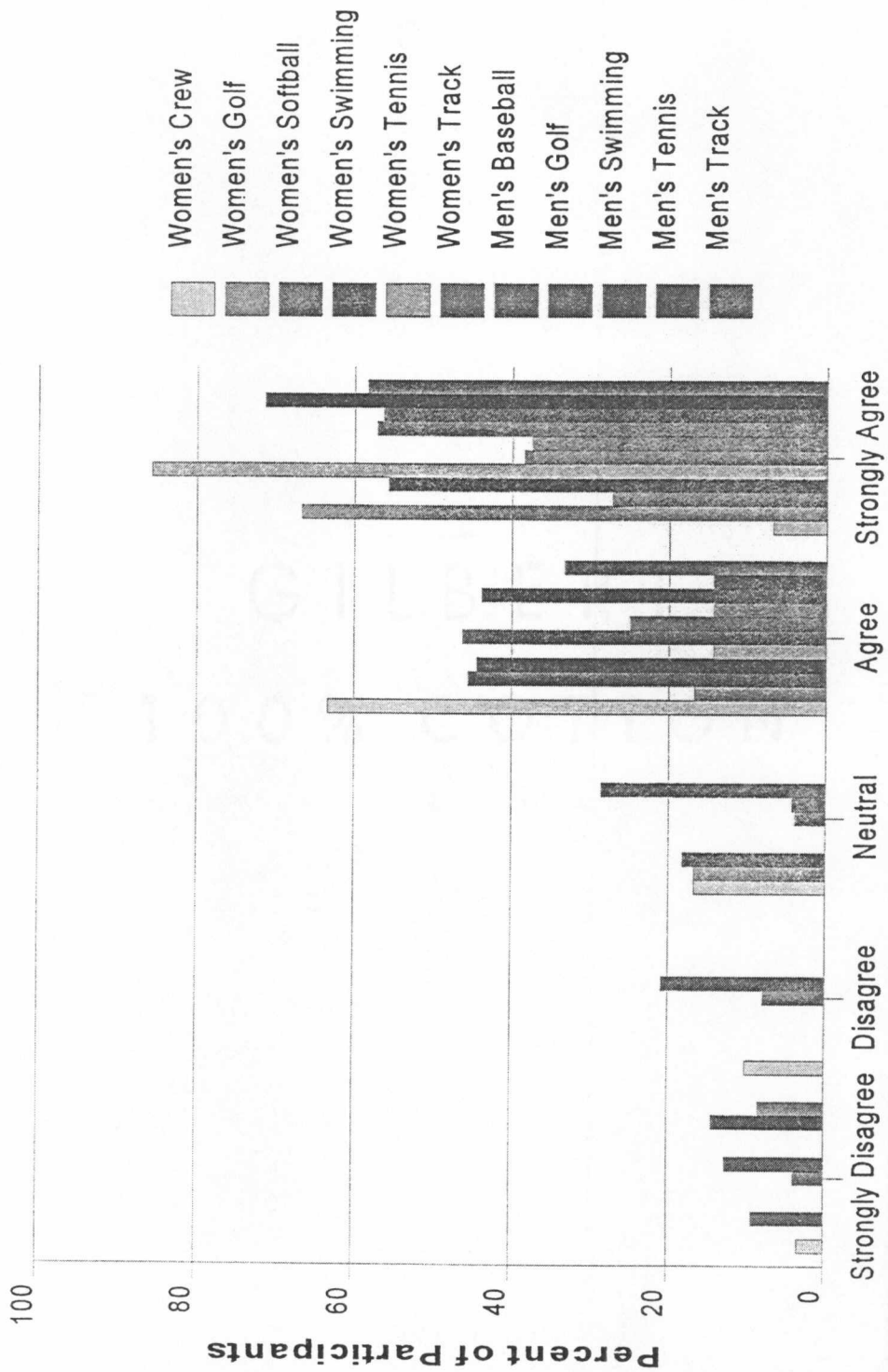


Figure 32. Perceptions of being able to study easily after practice

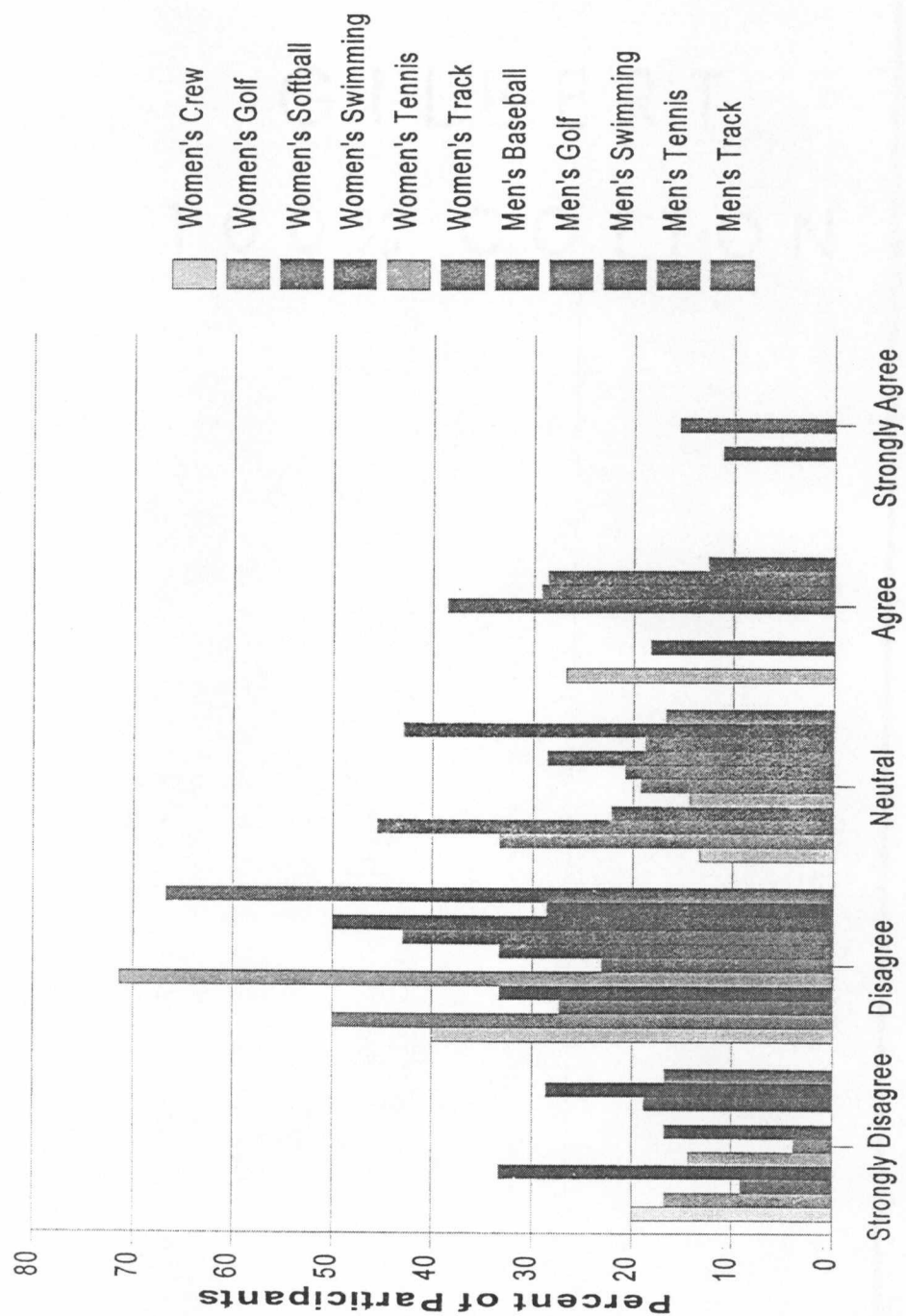


Figure 33. Perceptions of being able to easily find time to study while traveling to away games

Discussion

Because the mean scores for the teams' perceptions were close to neutral (Figure 3), it was important to take a closer look at the patterns of scoring for the questions within each stressor category. For injuries the patterns were relatively distributed across the strongly disagree, disagree, and neutral Likert responses. Thus, the majority of the teams tended to feel injury stressors caused carry-over effects into their academic performances or were neutral about the topic.

The patterns for NCAA requirements revealed high percentages of perceptions in the agree or strongly agree Likert responses. Only minimal percentages of the teams strongly disagreed or disagreed with NCAA requirements having stress carry-over effects into academics. Thus, the majority of the teams were neutral or felt positively about NCAA requirement stress carry-over effects into their academic performances.

In the Likert responses for the time constraints questions, the patterns revealed high percentages of perceptions in all of the Likert responses. Large percentages of the teams strongly disagreed or disagreed with time constraints having stress carry-over effects into academics. Thus, the majority of the teams tended to feel a mix of perceptions about time constraints having a carry-over effect into academics, but the perceptions appeared to be related to the factors of the specific time constraint rather than to the team.

Profound differences among the teams were noticeable in the time constraint stressors. Although, for the time constraint stressor the differences were not clearly based on gender. The results can be due to the differences in the time commitments each team

experiences. The time commitments expected of each athlete are based on the nature of the sport in which the student-athlete was participating. Therefore, it was concluded that student-athletes may experience more or less stress depending on the nature of the sport. The findings in this research can be supported by the following literature.

In the review of literature, Jones and Hanton (1996) concluded that certain athletes can find anxiety to be facilitative. They also revealed that the nature of the sport could predict the likelihood of anxiety becoming facilitative. The differences of the team's perceptions in this study could possibly be attributed to the nature of the sports themselves.

Race Results

The number of student-athletes in the racial categories was not distributed evenly. There were several racial groups with only one to three respondents. Therefore, a cross tabulation of Race x Question and Chi square was not applicable for the review of the individual questions. Instead one-way ANOVAs for race were calculated for each question and Newman Keuls post hoc tests were used where appropriate.

Race x Injury Questions

Instead an individual review of each question relating to athletic injuries as compared by race categories was conducted. A one-way factorial ANOVA was calculated to compare the race categories perceptions of the carry-over effect of athletic injury stressors into academic performances. The results of the one-way ANOVA's showed no significant race differences for any of the injury questions (Table 10).

Table 10. Race x Injury Question ANOVAs

Question #	F	p
9	.999	.428
13	.246	.960
15	1.142	.341
17	1.315	.254
18	.664	.679

*** Appendix C**

Race x NCAA Questions

A separate review of each individual question relating to NCAA requirements as compared by race was also conducted. In comparing the race categories and the stressors related to NCAA requirements, a one-way simple factorial ANOVA was calculated. The one-way ANOVAs indicated two significant results (Table 11, Questions 1 and 2). Student-athletes in the other category, $\bar{M} = 2.600$ perceived being able to take the classes of their choice while still meeting the NCAA requirements as significantly ($p = .008$) more stressful than Whites, $\bar{M} = 3.842$ and African Americans, $\bar{M} = 4.177$ (Table 12). Hispanic student-athletes, $\bar{M} = 2.500$ also perceived being able to take the classes of their choice while still meeting the NCAA requirements as significantly ($p = .008$) more stressful than African Americans (Table 12). Also, student-athletes in the other category, $\bar{M} = 2.800$ perceived being able to pursue the degree of their choice while still meeting the NCAA requirements as significantly ($p = .003$) more stressful than Whites, $\bar{M} = 4.068$ and African Americans, $\bar{M} = 4.353$ (Table 13). Hispanic student-athletes, $\bar{M} = 2.750$ also perceived being able to pursue the degree of their choice while still meeting the NCAA requirements as significantly ($p = .003$) more stressful than African Americans (Table 13). Although significant differences were found among the perceptions of NCAA requirements, the race categories tended to be neutral or felt no stress carry-over effects into their academics for the other three NCAA category questions.

Race x Time Questions

An individual review of each question relating to time constraints as compared by race categories was also conducted. A one-way factorial ANOVA was calculated to

Table 11. Race x NCAA Question ANOVAs

Question #	F	p
1	3.012	.008
2	3.519	.003
4	1.165	.328
6	.679	.667
12	1.073	.381

* Appendix C

Table 12. The Stress of Being Able to Take the Classes of Choice While Meeting the NCAA Continuing Eligibility Requirements Compared by Race

Race	Mean	Std. Dev.
American Indian (N = 1)	4.000	
Asian or Pacific Islander	3.000	1.000
Black/African American	4.177*	.728
Hispanic	2.500*	1.291
Non-Black Hispanic	4.500	.707
White/Not of Hispanic Origin	3.842*	1.051
Other	2.600*	1.517

* $F = 3.012$, $p = .008$ and Student Newman Keuls $\leq .05$

Table 13. The Stress of Pursuing the Degree of Choice While Meeting the NCAA Continuing Eligibility Requirements Compared by Race

Race	Mean	Std. Dev.
American Indian (N = 1)	4.000	
Asian or Pacific Islander	3.668	.577
Black/African American	4.353*	.606
Hispanic	2.750*	1.258
Non-Black Hispanic	3.000	1.414
White/Not of Hispanic Origin	4.068*	.930
Other	2.800*	1.643

* $F = 3.519$, $p = .003$ and Student Newman Keuls $\leq .05$

compare the race categories' perceptions of the carry-over effect of time constraint stressors into academic performances. In comparing race and each question individually as it dealt with time constraints the one-way ANOVAs indicated no significant results (Table 14). The majority of the race categories felt time constraint stress carry-over effects into their academics in the time constraint questions.

Discussion

The review of each individual question revealed that student-athletes in the other category perceived being able to take the classes of their choice while still meeting the NCAA requirements profoundly more stressful than Whites and African Americans. Hispanic student-athletes also perceived being able to take the classes of their choice while still meeting the NCAA requirements as significantly more stressful than African Americans. Student-athletes in the other category perceived being able to pursue the degree of their choice while still meeting the NCAA requirements as significantly more stressful than Whites and African Americans. Hispanic student-athletes also perceived being able to pursue the degree of their choice while still meeting the NCAA requirements as significantly more stressful than African Americans. Although significant differences were found among the perceptions of the NCAA stressor types, the race categories were neutral or felt no stress carry-over effects into their academics.

The direction of perceptions of majority of the race categories felt time constraint stress carry-over effects into their academics or they were neutral about the topic. The results revealed that the racial categories are experiencing stress carry-over effects from injuries and time constraints. Also, it was clear that the majority of the race subgroup felt

Table 14. Race x Time Question ANOVAs

Question #	F	p
10	.062	.999
11	.594	.735
14	.549	.770
16	.793	.577
20	1.893	.085

*** Appendix C**

the NCAA requirement were a positive component in their athletic careers. Although the results were not significant, the racial categories which had the fewest number of participants in them were the groups experiencing the majority of carry-over effects. The results can be supported by the following literature.

Shapiro (1984) discussed racial differences in graduation rates of student-athletes. Racial differences were evident among student-athlete's perceptions of NCAA continuing eligibility requirements and time constraints. Cone and Rosenbaum (1990) concluded that demographic variables could help accurately identify potentially successful student-athletes in the classroom. Shapiro (1984) concluded that demographic variables could be used to help predict if student-athletes would be successful in the classroom. It is also important to note that since 1990 many NCAA regulations have changed. This may account for the fewer racial differences in this study as compared to Shapiro's (1984) and Cone and Rosenbaum's (1990) studies.

Discussion

The second objective was to review the individual questions of the three stressor types to determine if significant subgroup differences existed. The three stressors were reviewed within the three subgroups: (a) gender, (b) team, and (c) race. The patterns of each subgroups' perceptions, were also examined within each question of all three stressor types.

To examine the patterns of the gender and team subgroup's perceptions cross-tabulations of Subgroup x Question were calculated and Chi square was applied for the review of the individual questions dealing with the three athletic stressors. The number

of student-athletes in the racial categories was not distributed evenly. Therefore, a cross tabulation of Race x Question and Chi square was not applicable for the review of the individual questions. One-way ANOVAs were calculated to compare the race categories perceptions of the carry-over effect of athletic injury stressors into academic performances.

The results of the analyses revealed consistent patterns of perceptions across all three subgroups. Injuries were perceived as stressful by all three subgroups. On the other hand student-athletes consistently perceived NCAA requirements in a positive orientation or they were neutral about the topic. Finally, time constraints were also perceived as stressful, but not according to the specific subgroups but rather than by the specificity of the time constraint and by individual athletes.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to review stressors related to athletic performance and the athletes' perceptions of the carry-over effect these stressors may have had on academic performance. This study attempted to determine if NCAA Division I subgroups of athletes perceived athletic performance stressors as having differential effects on their academic performance. The three subgroups reviewed in this study were gender, race, and team; and the three subcategories of athletic stressors reviewed were: (a) NCAA requirements, (b) time constraints, and (c) injuries.

The study and the results are divided into three components according to the two research objectives: (a) review the three subgroups individually, to determine if significant differences existed in the perceived carry-over effects among the three stressor types, and (b) review the individual questions of the three stressor types to determine if significant differences existed in the perceived carry-over effects among the three subgroups.

The Athletic Stressor survey was developed by the researcher as the instrument to be utilized. Measures were taken to ensure the validity and reliability of the survey. The participating subjects were 165 student-athletes belonging to eleven NCAA Division I teams at a single institution in the Southeastern conference. The teams included women's crew, golf, softball, swimming, tennis, and track and field teams and men's baseball, golf,

swimming, tennis, and track and field teams. All teams were in season during the time the survey was administered.

The results of the study were very promising in several areas. Also, suggestions on how to monitor stress carry-over effects could be made. An attempt was made to discern if there were perception differences among the gender, race, and team subgroups of athletes concerning whether athletic stressors interfered with their academic performances. The comparison of the subgroups' perceptions of athletic stress carry-over effects showed some significant results.

The first objective, to review the mean scores of the three subgroups' perceptions of the athletic stressors to reveal carry-over effects into academic performances, indicated that there were no significant gender differences within the three stressor categories. Both genders felt the levels of the three athletic stressors, injuries, NCAA requirements, and time constraints were the same. It was evident that both genders were experiencing some stress carry-over effects from injuries. Time constraints had the second highest mean scores for men and women revealing some stress carry-over into academic performances. Finally, both men and women were positively affected by the NCAA continuing eligibility requirements.

The review of the mean scores of the race categories' also produced no significant differences perceptions of any of the athletic stressors. Although there were no significant differences, it was evident that the athletes were experiencing some stress carry-over effects from injuries and time constraints.

The review of the mean scores of the teams' perceptions of the athletic stressors produced significant results. It was evident that the teams were experiencing some stress carry-over effects from injuries and time constraints.

The results of the first objective revealed that student-athletes attributed a majority of their academic stress to injuries and time constraints. These results revealed that student-athletes are not prepared properly to endure these stressors.

The second objective was to review the individual questions of the three stressor types to determine if significant subgroup differences existed. The three categories of stressors were reviewed within the three subgroups: (a) gender, (b) team, and (c) race. The patterns of each subgroup's perceptions were also examined within each question of all three stressor types.

Because the mean scores of perceptions of the stressor categories for men and women were close to neutral, it was important to take a closer look at the patterns of scoring for men and women. For the injury questions, the patterns of scoring revealed stress carry-over effects into academic performances for men and women.

The patterns of scoring for NCAA requirement questions revealed high percentages of perceptions in the agree or strongly agree Likert responses. Thus, the majority of both genders tended to feel their academic performances were positively affected by the NCAA continuing eligibility requirements.

In the Likert responses of time constraints received, men's and women's perceptions were consistent with each other. Men and women tended to feel time constraints caused carry-over effects into their academic performances.

Although the perceptions of men and women differed according to stressor type, injury and time constraint stressor types were perceived as having a carry-over effect into academic performances. Perceptions of injury stressor carry-over effects appeared to be consistent for men and women with the exception of the question in which finding time to study is the factor. For this question the perceptions of time appeared to be the determining factor instead of the injury. Perceptions of time constraint stressors appeared to be related to the individual athlete rather than men or women. It appeared that women experienced more difficulty getting motivated when faced with physical stressors, and the men tended to experience reduced motivation when facing mental stressors.

Because the mean scores for the teams' perception were close to neutral, it was important to take a closer look at the patterns of scoring. For injuries the patterns were relatively evenly distributed across the strongly disagree, disagree, and neutral Likert responses. Thus, the majority of the teams tended to feel injury stressors caused carry-over effects into their academic performances or were neutral about the topic.

The patterns for NCAA requirement questions revealed high percentages of perceptions in the agree or strongly agree Likert scale responses. Thus, the majority of the teams were neutral or felt no NCAA requirement stress carry-over effects into their academic performances.

In the Likert responses of time constraints received, the patterns revealed high percentages of perceptions in all of the Likert responses. Thus, the majority of the teams tended to feel a mix of perceptions about time constraints having a carry-over effect into

academics, but the perceptions appeared to be related to the individual athlete rather than the team in which they belonged.

Profound differences among the teams were noticeable in all three stressor types. It was evident in the athletic injury and NCAA requirement stressors that the differences were generally gender differences rather than team differences. The gender differences were explained earlier on this research. Although, for the time constraint stressor the differences were not clearly based on gender. It was concluded that student-athletes may experience more or less stress depending on the nature of the sport.

The review of each individual question by race revealed that student-athletes in the other category perceived being able to take the classes of their choice while still meeting the NCAA requirements significantly more stressful than Whites and African Americans. Hispanic student-athletes also perceived being able to take the classes of their choice while still meeting the NCAA requirements as significantly more stressful than African Americans. Student-athletes in the other category perceived being able to pursue the degree of their choice while still meeting the NCAA requirements as significantly more stressful than Whites and African Americans. Hispanic student-athletes also perceived being able to pursue the degree of their choice while still meeting the NCAA requirements as significantly more stressful than African Americans. Although significant differences were found among the patterns of perceptions of the NCAA stressor types, it was seemingly apparent that the race categories were neutral or felt no stress carry-over effects into their academics.

neutral about the topic.

The results of the ANOVAs revealed that the racial categories differed most noticeably in the academic environment. Also, the racial categories which had the fewest number of participants in them were the groups experiencing the majority of carry-over effects.

The results of the subgroup analyses revealed consistent patterns of perceptions across all three subgroups. Injuries were perceived as stressful by all three subgroups. On the other hand student-athletes consistently perceived NCAA requirements as non-stressful or they were neutral about the topic. Finally, time constraints were also perceived as stressful, but not according to the specific subgroups but rather a specific type of time constraint and/or by the individual athletes.

Conclusions

1. A review of the subgroup's perceptions of the athletic stressors revealed important similarities among injury stressors. Injuries were consistently viewed as contributing to stress carry-over effects by all three subgroups. These findings are important for the student-athlete support staff. Student-athletes are not receiving adequate or proper support to endure injuries stressors, therefore they are carrying-over into student-athletes academic performances.

2. The subgroup's perceptions of the NCAA athletic stressors exposed important patterns for the NCAA commission and student-athlete support staff members to take notice. NCAA requirements were consistently viewed by the majority of student-athletes as not contributing to stress carry-over effects. This is good news for the NCAA

commission and student-athlete support staff members because it means they have been effective in instituting reasonable academic requirements.

3. A review of the subgroup's perceptions of the athletic stressors revealed important patterns among time constraint stressors. Time constraints were consistently viewed as contributing to stress carry-over effects by a majority of student-athletes in each subgroup. Although, there was not any distinction as to which student-athletes were experiencing the carry-over effect. Therefore, since there is some inconsistency, these findings should alert student-athlete support staff members to consistently ask all student-athletes if they are experiencing any stress from time constraints.

4. Gender differences in stressor types are becoming recognizable. The important motivational differences between men and women need to be investigated. Such findings in gender difference are beneficial because they will allow student-athlete support staff members to address these problems in a more specific manner.

5. Perceptions from the racial categories cite most noticeable differences in the academic environment. It appeared that the racial categories with the least representation were the groups experiencing the majority of stressor carry-over effects. Therefore, institutions must attempt to offer specific assistance to these groups instead of filtering them out.

6. A variety of teams were experiencing carry-over effects into their academic performances from time constraints. This could be important information for the NCAA who regulates the time constraints put on student-athletes because these results may be due to the fact that student-athletes are making unrealistic time commitments to their

sport. On the other hand it may be that coaches are abusing their athletes' time and not reporting all the time they require from their athletes.

Recommendations

In listing potential areas for additional research, several areas could be examined.

1. Conduct a study of all student-athletes perceptions of athletic carry-over stress in academic performances during the respective season to look for differences in the perceptions of the student-athletes participating in Spring sports versus Fall sports.

Recognition of differences will allow support staff to become adequately prepared to deal with the specific stressors of each season.

2. Conduct a study of all student-athletes perceptions of athletic carry-over stress in academic performances while in season compared to off-season. Chart the rate of increase/decrease of perceived stress and look for patterns of increased stress so that practitioners can implement means of relieving the stress.

3. Conduct a study of Division I, II, and III student-athletes' perceptions of athletic carry-over stress in academic performances.

4. Research the different athletic stressors that student-athletes endure and account for those that carry-over into academic performances.

5. Monitor and research the nature of facilities and amount of staff available to help student-athletes work through athletic stress carry-over effects (e.g., student-life, training rooms, mentors, and sport psychologists).

6. Promote the physically, mentally, and psychologically healthy student-athlete, and design instruments and procedures to determine when they are not.

7. Use this research to assist the support staff and athletic administrators at this NCAA Division I university and other universities enhance their awareness of student-athlete's perceptions about athletic stressors that may have an adverse effect on their academic performances.

8. Athletic academic advisors can use these results to help design improved advising techniques and mentoring programs for student-athletes.

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APPENDICES

APPENDIX A

COACHES INFORMED CONSENT

Dear Coach:

The purpose of this letter is to request your permission to contact your athletes as potential participants in the following outlined study. The time commitment for your athletes would be approximately 15 minutes with a maximum of 30 minutes during a single day. I am prepared to work with the academic advisors to find the most convenient time for your athletes to complete the survey. I have enclosed a copy of the survey materials your athletes will need to complete.

TITLE

The Assessment of Division I Student-athletes' Perception of Athletic Stress and the Carry-Over Effects into Academics.

PURPOSE OF THE STUDY

The purpose of this study is to review stressors related to athletic performance and the possible carry-over effect they may have on academic performances. This study, which is part of my M.S. thesis, will attempt to determine if NCAA Division I athletes perceive athletic performance stress as having an effect on their academic performance. Three subcategories of athletic stressors will be reviewed: (a) NCAA requirements, (b) time constraints, and (c) injuries. I will also attempt to discern if the subgroups of team, race, and gender perceive athletic stressors to interfere with their academic performances to a greater or lesser degree.

CONFIDENTIALITY

The name of the subjects will never be used in connection with the survey results. Due to lack of interaction, the researcher will only be aware of the specifics of the individual teams and not the players. All of the completed surveys will be kept in a locked file in 339 HPER building. At the end of the study all surveys will be destroyed.

POTENTIAL RISKS

Physical and psychological risks are not anticipated as a result of any athlete's participation in this study. The athlete has the right not to participate in the study. The athlete does not have to answer a question he or she does not feel comfortable answering. The athlete may choose to end the survey at any time.

POTENTIAL BENEFITS

Participation in this study will help the academic support staff at this university understand the student-athlete more fully. In turn, the advisors can help design academic programs that may be more beneficial and less time consuming for student-athletes. It may also help coaches become more aware of the modern day stresses student-athletes endure.

I will send you a copy of the results after the research is complete. I look forward to working with you. If you have any questions regarding this study please contact me at the number below.

Sincerely,

Kristen M. Caputo

M.S. Candidate

COACH'S SIGNATURE _____

OF TEAM MEMBERS _____

Patricia A. Beitel

Advisor

DATE _____

PHONE NUMBER _____

If you have any questions please contact
Kristen Caputo or Dr. Patricia Beitel, (423) 974-5111
Cultural Studies Unit, 1914 Andy Holt Ave.
The University of Tennessee, Knoxville, TN 37996-2700

APPENDIX B COVER LETTER

TITLE

The Assessment of Division I Student-athletes Perception of Athletic Stress and the Carry-Over Effects into Academics.

PURPOSE OF THE STUDY

The purpose of this study, which is part of my M.S. thesis requirements, is to review stressors related to athletic performance and the possible carry-over effect they may have on academic performances. This study will attempt to determine if NCAA Division I athletes perceive athletic performance stress as having an effect on their academic performance. Three subcategories of athletic stressors will be reviewed: (a) NCAA requirements, (b) time constraints, and (c) injuries. I will also attempt to discern if the subgroups of gender, race and team perceive athletic stressors to interfere with their academic performance's to a greater or lesser degree.

CONFIDENTIALITY

Your name will never be used in connection with the survey results. Due to lack of interaction the researcher will only be aware of the specifics of the individual teams and not the players. All of the completed surveys will be kept in a locked file in 339 HPER building. At the end of the study all surveys will be destroyed.

POTENTIAL RISKS

Physical and psychological risks are not anticipated as a result of your participation in this study. You have the right not to participate in the study. You are not required to answer any question you do not feel comfortable answering, and you may choose to end the survey at any time.

POTENTIAL BENEFITS

Participation in this study will help the academic support staff at this university to understand the student-athlete more fully. In turn, the advisors can help design academic programs that may be more beneficial and less time consuming for student-athletes. It may also help coaches become aware of the modern day stresses student-athletes endure.

I HAVE READ THE ABOVE STATEMENTS AND UNDERSTAND MY ROLE IN THE PROJECT, THE RESEARCH APPROACHES, AND THE CONCEIVABLE RISKS PERTAINED TO MY PARTICIPATION. I ALSO UNDERSTAND THAT MY COMPLETION OF THE SURVEY IMPLIES INFORMED CONSENT. I UNDERSTAND THAT WHETHER I CHOOSE TO PARTICIPATE OR NOT, THERE WILL BE NO EFFECT ON MY STATUS AS A TEAM MEMBER IN MY SPORT AND I AM NOT BEING COERCED IN ANY WAY TO BE A PARTICIPANT IN THIS STUDY.

If you have any questions please contact

Kristen Caputo or Dr. Patricia Beitel, (423) 974-5111 or 974-1277

Cultural Studies Unit, 1914 Andy Holt Ave.

The University of Tennessee, Knoxville, TN 37996-2700

APPENDIX C

QUESTIONNAIRE

Demographic Information

The following information will be helpful in interpreting the results of this study. Please answer each question fully.

Academic Standing

1. Freshman 2. Sophomore 3. Junior 4. Senior 5. Graduate

Age: _____

Cumulative GPA: _____

Current Year of Athletic Eligibility:

- 1 2 3 4 5

Gender:

1. Female 2. Male

Race:

1. American Indian or Alaskan Native
2. Asian or Pacific Islander
3. Black / African American
4. Hispanic
5. Non-Black Hispanic
6. White / Not of Hispanic Origin
7. Other _____

Sport: _____

Current Status:

- | | | |
|-------------------|-------|--------|
| Partial Qualifier | 1. No | 2. Yes |
| Redshirt | 1. No | 2. Yes |
| Scholarship | 1. No | 2. Yes |
| Starter | 1. No | 2. Yes |

STRESSOR SURVEY

Below is a series of statements which reflect a few stressors related to athletics. Please indicate your extent of agreement or disagreement toward each statement by circling the appropriate number on the scale (1 = "strongly disagree" to 5 = "strongly agree").

- | | Strongly Disagree
1 | Disagree
2 | Neutral
3 | Agree
4 | Strongly Agree
5 |
|--|------------------------|---------------|--------------|------------|---------------------|
| 1. Each semester I can take the classes of my choice while still meeting the academic requirements set by the NCAA. | 1 | 2 | 3 | 4 | 5 |
| 2. I am able to pursue the degree of my choice while at the same time meeting all of the NCAA academic requirements. | 1 | 2 | 3 | 4 | 5 |
| 3. While injured I have less time to study. | 1 | 2 | 3 | 4 | 5 |
| 4. I feel the NCAA academic requirements are reasonable. | 1 | 2 | 3 | 4 | 5 |
| 5. During the rehabilitation of an injury, I have trouble focusing on my studies. | 1 | 2 | 3 | 4 | 5 |
| 6. I believe the GPA requirements set by the NCAA are easy to meet each semester. | 1 | 2 | 3 | 4 | 5 |
| 7. I find it difficult to complete the 24 degree hours needed each year to stay eligible as required by NCAA. | 1 | 2 | 3 | 4 | 5 |
| 8. I believe the GPA requirements set by the NCAA are difficult to meet each semester. | 1 | 2 | 3 | 4 | 5 |
| 9. While injured, I feel more motivated to go to class. | 1 | 2 | 3 | 4 | 5 |
| 10. During practice, I find myself thinking about my schoolwork. | 1 | 2 | 3 | 4 | 5 |

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
11. It is easy to make it to class the day after an away game.	1	2	3	4	5
12. I find it easy to complete the 24 degree hours needed each year to stay eligible as required by NCAA.	1	2	3	4	5
13. While injured, I spend more time studying than rehabilitating my injury.	1	2	3	4	5
14. After practice, I find it easy to study.	1	2	3	4	5
15. Having an injury takes away from my daily stress.	1	2	3	4	5
16. I never miss classes due to away games.	1	2	3	4	5
17. While injured, I have additional time to study.	1	2	3	4	5
18. During the rehabilitation of an injury, I can focus more easily on my studies.	1	2	3	4	5
19. After practice, I find it difficult to study.	1	2	3	4	5
20. While traveling to a competition, I find time to study.	1	2	3	4	5
21. During practice, I find it hard to think about my schoolwork.	1	2	3	4	5

COMMENTS:

VITA

Kristen Caputo was born in Sumter, South Carolina on April 8, 1974. She attended high school at St. Jude Central High School in Sumter.

After graduating from high school in June of 1992, Kristen attended Francis Marion University, an NCAA II school, in Florence South Carolina. She received a full athletic scholarship to play on the Francis Marion Softball Team. In May of 1996 she received a Bachelor of Science degree in Psychology. In August of 1996, she entered The University of Tennessee, Knoxville and in August of 1997 received a Master of Science degree with a concentration in Sport Psychology.