The Necessity for NCAA Division III Drug Testing as Perceived by Division III Certified Athletic Trainers

A THESIS

Submitted to the Faculty of the School of Graduate Studies and Research
Of California University of Pennsylvania in partial fulfillment of the requirements for the degree of

Master of Science

By
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THESIS APPROVAL

Graduate Athletic Training Education Program

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INTRODUCTION

Over the past few years, performance enhancement drugs and steroid use among athletes have become a popular topic of discussion. From an early age, we are taught to win to be successful in athletics. In almost every level of competitive sports from high school to professional, athletes are trying to find new ways to get an edge on others. Today, athletes are using the phrase “win at all cost” and turning to ergogenic aids and performance enhancement drugs to be successful.

Ergogenic aids and performance enhancers are frequently used by athletes for the relatively sudden impact they have on the field. While they have been around for thousands of years, there has been speculation of use dating back to the Olympic games in Ancient Greece. Today, we find athletes using synthetic drugs and designer steroids that can be used in a variety of ways. Each substance carries a long list of adverse effects that athletes must understand prior to their use. Athletes are currently using these substances to improve their performance, as well as increase speed, strength, endurance, and energy.
In an attempt to prohibit the use of these ergogenic aids and performance enhancement drugs, the NCAA has developed a way to regulate substance abuse among student athletes. Established in 1986, the NCAA instituted a year-round drug testing program as a way to deter athletes from drug abuse. This mandatory testing procedure was designed for the protection and to help safeguard the health and safety of student athletes. Also, it was created to ensure that no athlete has an artificial induced advantage or may be pressured into consuming substances in an attempt to remain competitive.\(^4\)

The NCAA Executive Committee developed a list of banned substances that are classified into six categories based on their primary use. When an athlete is selected for testing, a urine sample is collected and tested in a laboratory. If tested positive, an athlete will receive a loss of eligibility from their sport for one full year. Currently, these drug-testing procedures by the NCAA only apply to student athletes during the regular season at Divisions I and II. The NCAA does not regulate drug testing in Division III unless a team reaches the championship level.\(^4\)

Although the NCAA Drug Testing Program is well structured, there is still some controversy over its
contents especially in the field of Athletic Training. The issue among athletic trainers is the way in which the drug-testing program changes their rapport with the athletes. In a study done by Starkey et al., major findings were revealed concerning athletic trainers association with the drug screening process. Of the respondents, 61.8% claimed that drug screening puts them into a dual role of both counselor and police. As athletic trainers, they have the advantage of interacting with the athletes in a more personalized environment, which may lead to revealing personal information regarding substance abuse. The athletic trainer is one that sees first hand the issue of substance abuse among athletes at all NCAA Divisions. Also in the study, athletic trainers stated that they would provide assistance in developing a drug education program rather then their current role in the drug screening process.

While the NCAA Drug Testing Program may provide adequate regulation of substance abuse, many believe that it goes against their constitutional rights. Since the testing procedures state that the program is both mandatory and randomized, whether the athlete has been suspected of substance abuse or not, the issue of privacy is constantly debated. In some cases, athletes have brought drug
screening results at schools to court and claimed the testing to be in violation of their privacy. In one such case, a California Supreme Court ruled in favor of the NCAA stating the test was not violating the student-athletes rights. However, similar cases have been ruled in favor of the athlete as there was no suspicion of substance abuse and it violated the Fourth Amendment.\textsuperscript{7,8}

Regardless of the courts decision, little can be argued that substance abuse is present among all NCAA Divisions. In a recent study, NCAA banned substances were seen to be used predominately by Caucasian males, resulting in 3.3\% of the athletes surveyed admitting to using steroids in the off-season.\textsuperscript{9} While in a study done by Green,\textsuperscript{10} the most remarkable statistic was the relationship of substance abuse among NCAA Divisions. Division III showed significantly higher uses among athletes in alcohol, anabolic steroids, ephedrine, marijuana, and psychedelics.

What makes these statistics astonishing is the amount of athletes that fit these characteristics currently competing at the Division III level with no year round drug testing program established. As an athletic trainer, having no governing body to help deter athletes from substance abuse, one must rely on assumptions and judgment. With the increasing pressure to use ergogenic aids and
performance enhancers by fellow teammates and coaches, athletes are experimenting with dangerous substances with serious health risks.\textsuperscript{31} It then becomes the athletic trainer’s job to provide adequate care for these athletes without entirely knowing their current drug habits.

This study will attempt to answer the following questions: 1) What is the difference between schools without a drug education program and schools with a drug education program for the opinion of Division III drug testing? 2) What is the relationship between the number of varsity sports and the opinion of Division III drug testing? 3) What is the relationship between the number of years of experience and the opinion of Division III drug testing?
METHODS

This section will include the following subsections: Research Design, Subjects, Pilot Study, Instruments, Procedures, Hypotheses, and Data Analysis.

Research Design

The research design for this study was descriptive. The dependent variable was the opinion of Division III drug testing among Division III Certified Athletic Trainers. The independent variables were the number of years of experience, the presence of a drug education program, and the number of varsity sports at the institution. The strength of this study was that there has been no previous research done on the opinion for the need of Division III drug testing. A limitation of the study was only using Division III schools in the survey. This excluded the opinion of Certified Athletic Trainers among Divisions I and II. Another limitation was the possibility of Certified Athletic Trainers having no knowledge of their athlete’s drug abuse.
Subjects

The subjects in this study were National Collegiate Athletic Association (NCAA) Certified Athletic Trainers. The Certified Athletic Trainers that participated in this study were currently employed at Division III Colleges within the United States. There were 744 subjects used as this was the maximum number of contacts provided by the NATA List Serve. The study was conducted using an online questionnaire developed by the researcher. An assumption was made that the Certified Athletic Trainer working at the Division III College has had adequate exposure to their athlete’s training habits and potential drug abuse. To determine adequate exposure, years of experience at the Division III level was asked as part of the survey. A limitation to these subjects was the possibility of excluding Certified Athletic Trainers who had previously worked at the Division III level for a considerable amount of time. This left out Certified Athletic Trainers no longer at a Division III collegiate setting with a great deal of knowledge on the topic. Informed consent was indicated by the completion of the survey.
Pilot Study

To determine the reliability of the questionnaire, a pilot study was performed. The questionnaire was administered to 30 Certified Athletic Trainers currently working at the collegiate setting. The survey consisted of 16 opinion questions scored on a Likert scale regarding the opinion of NCAA drug testing by Certified Athletic Trainers. A Cronbach’s coefficient alpha was used to measure the reliability of the 16 opinion questions since they were scored on a Likert scale. This test was used to establish how the answers related to one another and to the whole test. The verification that the answers tested the same general factors helped strengthened the reliability of this questionnaire. The Cronbach’s coefficient alpha was at .658 for the 16 opinion questions in the pilot study. This confirmed that the questions were moderate in internal consistency and proven to be reliable.

Instruments

The Division III Drug Testing Questionnaire (Appendix C1) was used in this survey to examine the perception of Division III Certified Athletic Trainers on the current
drug testing issues at the Division III level. This questionnaire was a variation of the survey used by Starkey in 1994 on the attitudes of drug testing by athletic trainers. The survey was constructed based on evidence in the literature along with the modifications from previous studies. There were two main sections to the survey, which consisted of demographic and perception questions.

There were a total of 35 questions among the survey, which was used to rate the Certified Athletic Trainer’s opinion of NCAA drug testing. Six yes/no questions and 13 fill in responses made up the demographic response section. The demographic questions were used to help determine information pertaining to the respondent and their school’s current drug testing policies, procedures, drug education programs, and NCAA banned substance use.

Also, 16 questions were asked using a five point Likert scale to score the answers given. The respondents answered the questions based on their prior experience and current knowledge of NCAA drug testing and banned substance use at their institution. Possible answers ranged from strongly disagree to strongly agree with scoring of 1 to 5 respectively. Also, a choice of not applicable was available where it applied and received a score of 0. Scores ranged from 0 to 80 depending on the Certified
Athletic Trainer’s agreement to each statement. The higher scores for this section indicated a greater need for NCAA drug testing at the Division III level as perceived by Certified Athletic Trainers.

Procedures

The researcher applied for Institutional Review Board (IRB) (Appendix C2) approval at California University of Pennsylvania before conducting any research. The researcher conducted the pilot study to determine the reliability coefficient. The researcher then contacted the NATA (National Athletic Trainers’ Association) and requested access to the NATA List Serve. The NATA List Serve contained the contact information of all Certified Athletic Trainers currently employed at Division III institutions. Once the approval was granted, a webpage was then created by the researcher to design The Division III Drug Testing Questionnaire (Appendix C1). The questionnaire was then sent by email to the subjects listed in the NATA List Serve using Survey Monkey. No informed consent was needed with this survey as it was sent via email and responding to the questionnaire implied consent. A cover letter (Appendix C3) was also sent with the survey.
explaining the reason and purpose of the study. After two weeks, if the survey had not been returned yet, a follow up email was sent to the Certified Athletic Trainer as a reminder to complete the questionnaire. Once the survey was completed, the respondent emailed the questionnaire back to the researcher. The data was converted into SPSS and kept confidential.

Hypotheses

The following hypotheses were based on a review of the literature and intuition of the researcher.

1) Certified Athletic Trainers at schools without drug education programs will have a greater opinion for a drug-testing program than schools with drug education programs.

2) There will be a positive relationship between the number of varsity sports and the Certified Athletic Trainer’s opinion of a drug-testing program.

3) There will be no relationship between the number of years of experience and the Certified Athletic Trainer’s opinion of a drug-testing program.
Data Analysis

An alpha level of .05 was used for the statistical significance of all tests.

1) A t-test was used to determine if Certified Athletic Trainers at schools without drug education programs had a greater opinion for a drug-testing program than schools with drug education programs.

2) A Pearson Product Moment Correlation was used to determine if there was a positive relationship between the number of varsity sports and the Certified Athletic Trainer’s opinion of a drug-testing program.

3) A Pearson Product Moment Correlation was used to determine if there was no relationship between the number of years of experience and the Certified Athletic Trainer’s opinion of a drug-testing program.
RESULTS

Demographic Data

The sample consisted of certified athletic trainers (N=240) currently employed at Division III institutions. Among this sample size, there were 118 females and a total of 122 male certified athletic trainers. The total number of varsity sports at each institution given by the respondents ranged from 1 to 34 sports (17.92±5.10). The number of years of experience at the Division III level for each certified athletic trainer ranged from 1 to 30 years (7.22±6.61). The number of positive tests from NCAA drug testing at each institution ranged from 0 to 10 athletes (1.78±2.17). The number of positive tests from the institutions own drug testing ranged from 0 to 40 athletes (3.32±6.52). The number of athletes that the certified athletic trainers were currently aware of using NCAA banned substances ranged from 1 to 90 athletes (17.72±20.17). Gender, administrative position, sport coverage, previous NCAA drug testing, positively tested sports, positively tested substances, presence of own drug testing, own drug testing sanctions, own drug testing occurrence, own drug testing randomization, current awareness of banned
substance use, presence of drug education program, drug education program occurrence, and adequately structured drug education programs were also examined. The frequencies are reported in the following tables.

### Table 1. Frequency Table of Gender

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<td>Female</td>
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<tr>
<td>Male</td>
<td>122</td>
<td>50.2</td>
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### Table 2. Frequency Table of Position

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<th>Position</th>
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</thead>
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<tr>
<td>Assistant AT</td>
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<td>47.5</td>
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<tr>
<td>Head Athletic Trainer</td>
<td>99</td>
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<tr>
<td>Program Director</td>
<td>17</td>
<td>7.1</td>
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<tr>
<td>Other</td>
<td>10</td>
<td>4.2</td>
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### Table 3. Frequency Table of Sport Coverage

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<td>Baseball</td>
<td>165</td>
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<tr>
<td>Basketball</td>
<td>199</td>
<td>82.9</td>
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<tr>
<td>Cross Country</td>
<td>167</td>
<td>69.6</td>
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<tr>
<td>Field Hockey</td>
<td>98</td>
<td>40.8</td>
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<tr>
<td>Football</td>
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<td>50.0</td>
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<tr>
<td>Golf</td>
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<tr>
<td>Gymnastics</td>
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<td>4.2</td>
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<td>Ice Hockey</td>
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<td>19.6</td>
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<td>Lacrosse</td>
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<td>Rowing</td>
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<td>8.3</td>
</tr>
<tr>
<td>Soccer</td>
<td>201</td>
<td>83.8</td>
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<tr>
<td>Softball</td>
<td>182</td>
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<tr>
<td>Swimming &amp; Diving</td>
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<td>Tennis</td>
<td>173</td>
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<td>52</td>
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<tr>
<td>Other</td>
<td>47</td>
<td>19.6</td>
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Table 4. Frequency Table for Previous NCAA Drug Testing

<table>
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<th>NCAA Drug Tested</th>
<th>Frequency</th>
<th>Percent</th>
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<td>No</td>
<td>139</td>
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<tr>
<td>Yes</td>
<td>101</td>
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Table 5. Frequency Table for Positively Tested Sports

<table>
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<th>Positively Tested Sports</th>
<th>Frequency</th>
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<tr>
<td>Baseball</td>
<td>18</td>
<td>7.5</td>
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<tr>
<td>Basketball</td>
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<td>7.1</td>
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<td>Cross Country</td>
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<td>0.4</td>
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<td>Field Hockey</td>
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<td>Golf</td>
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<td>0.4</td>
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<tr>
<td>Ice Hockey</td>
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<td>1.7</td>
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<td>Lacrosse</td>
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<td>0.8</td>
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<td>Soccer</td>
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<td>4.6</td>
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<tr>
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<td>1.3</td>
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<tr>
<td>Swimming &amp; Diving</td>
<td>3</td>
<td>1.3</td>
</tr>
<tr>
<td>Tennis</td>
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<td>0.8</td>
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<tr>
<td>Track and Field</td>
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<td>2.1</td>
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<tr>
<td>Volleyball</td>
<td>5</td>
<td>2.1</td>
</tr>
<tr>
<td>Wrestling</td>
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<td>0.8</td>
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<tr>
<td>Other</td>
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Table 6. Frequency Table for Positively Tested Substances

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<th>Frequency</th>
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<td>Stimulants</td>
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<td>Street Drugs</td>
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Table 7. Frequency Table for Presence of Own Drug Testing

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<th>Frequency</th>
<th>Percent</th>
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<td>201</td>
<td>83.8</td>
</tr>
<tr>
<td>Yes</td>
<td>39</td>
<td>16.3</td>
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Table 8. Frequency Table for Own Drug Testing Sanctions

<table>
<thead>
<tr>
<th>Sanctions</th>
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<th>Percent</th>
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<td>Days</td>
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</tr>
<tr>
<td>Games</td>
<td>18</td>
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<td>Indefinite</td>
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<tr>
<td>Months</td>
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<tr>
<td>Seasons</td>
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Table 9. Frequency Table for Own Drug Testing Occurrence

<table>
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<th>Frequency</th>
<th>Percent</th>
</tr>
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<tr>
<td>Yearly</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Varies</td>
<td>28</td>
<td>11.7</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Table 10. Frequency Table for Own Drug Testing Randomization

<table>
<thead>
<tr>
<th>Randomization</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>4</td>
<td>1.7</td>
</tr>
<tr>
<td>Yes</td>
<td>35</td>
<td>14.6</td>
</tr>
</tbody>
</table>

Table 11. Frequency Table for Currently Aware of Banned Substance Usage

<table>
<thead>
<tr>
<th>Currently Aware</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>201</td>
<td>83.8</td>
</tr>
<tr>
<td>Yes</td>
<td>39</td>
<td>16.3</td>
</tr>
</tbody>
</table>

Table 12. Frequency Table for Presence of Drug Education Program

<table>
<thead>
<tr>
<th>Drug Education Program</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>101</td>
<td>42.1</td>
</tr>
<tr>
<td>Yes</td>
<td>139</td>
<td>57.9</td>
</tr>
</tbody>
</table>
Table 13. Frequency Table for Drug Education Program Occurrence

<table>
<thead>
<tr>
<th>Drug Education Program Occurrences</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each Semester</td>
<td>30</td>
<td>12.5</td>
</tr>
<tr>
<td>Monthly</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Upon Request</td>
<td>36</td>
<td>15.0</td>
</tr>
<tr>
<td>Weekly</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Yearly</td>
<td>71</td>
<td>29.6</td>
</tr>
</tbody>
</table>

Table 14. Frequency Table for Adequately Structured Drug Education Programs

<table>
<thead>
<tr>
<th>Adequately Structured</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>55</td>
<td>22.9</td>
</tr>
<tr>
<td>Yes</td>
<td>84</td>
<td>35.0</td>
</tr>
</tbody>
</table>

Hypotheses Testing

The level of significance used for testing the hypothesis was set at an alpha level of .05.

1) Certified Athletic Trainers at schools without drug education programs will have a greater opinion for a drug-testing program than schools with drug education programs.

A t-test was used to determine if Certified Athletic Trainers at schools without drug education programs had a greater opinion for a drug-testing program than schools with drug education programs. The results of the t-test are displayed below in Table 15.
Table 15. An Independent Sample t-test Comparing Means Scores of Certified Athletic Trainers With and Without Drug Education Programs

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>101</td>
<td>49.45</td>
<td>5.18</td>
<td>-5.286</td>
<td>.228</td>
</tr>
<tr>
<td>Yes</td>
<td>139</td>
<td>52.88</td>
<td>4.81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: An independent-sample t test was calculated comparing the mean scores of Certified Athletic Trainers with drug education programs to the mean scores of Certified Athletic Trainers without drug education programs. There was no significant difference found between the means of the two groups ($t_{238} = -5.286$, $p > .05$). The mean of the Certified Athletic Trainers without drug education programs (49.45±5.18) was not significantly different from the mean scores of Certified Athletic Trainers with drug education programs (52.88±4.81).

2) There will be a positive relationship between the number of varsity sports and the Certified Athletic Trainer’s opinion of a drug-testing program.

A Pearson Product Moment Correlation was used to determine if there was a positive relationship between the number of varsity sports and the Certified Athletic Trainer’s opinion of a drug-testing program. The results
of the Pearson Product Moment Correlation are displayed below in Table 16.

Table 16. Pearson Product Moment Correlation Between the Number of Varsity Sports and the Opinion Scores of Certified Athletic Trainers

<table>
<thead>
<tr>
<th>Variable &amp; Number of Varsity Sports</th>
<th>n</th>
<th>r</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion Scores</td>
<td>240</td>
<td>-0.199</td>
<td>0.002*</td>
</tr>
</tbody>
</table>

*p < .01

Conclusion: The Pearson Product Moment Correlation was calculated for the relationship between the opinion scores of Certified Athletic Trainers and the number of varsity sports at their institution. A negative correlation was found ($r_{238} = -0.199$, $p < .01$), indicating a significant negative linear relationship between the two variables. Certified Athletic Trainers with a higher opinion score of a drug-testing program had a lower number of varsity sports at their institution.

3) There will be no relationship between the number of years of experience and the Certified Athletic Trainer’s opinion of a drug-testing program.

A Pearson Product Moment Correlation was used to determine if there was no relationship between the number of years of experience and the Certified Athletic Trainer’s
opinion of a drug-testing program. The results of the Pearson Product Moment Correlation are displayed below in Table 17.

Table 17. Pearson Product Moment Correlation Between the Number of Years of Experience and the Opinion Scores of Certified Athletic Trainers

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>r</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Years of Experience &amp; Opinion Scores</td>
<td>240</td>
<td>-.017</td>
<td>.794</td>
</tr>
</tbody>
</table>

Conclusion: The Pearson Product Moment Correlation was calculated examining the relationship between the number of years of experience at the Division III level and the opinion scores of Certified Athletic Trainers. A weak correlation that was not significant was found ($r_{238} = -.017$, $p > .05$). The number of years of experience at the Division III level is not related to the drug-testing opinion scores of Certified Athletic Trainers.

Additional Findings

There were several tests conducted using the demographic section of the questionnaire along with the opinion questions and total score in order to discover additional findings.
An independent-samples *t* test was calculated comparing the mean scores of Certified Athletic Trainers with and without their institutions own drug testing programs. A significant difference was found between the means of the two groups ($t_{238} = -2.295 \ p < .05$). The mean scores of Certified Athletic Trainers with their own drug testing program were significantly higher (53.18 ±4.88) than the mean scores of Certified Athletic Trainers without their own drug testing program (51.09 ±5.43). The results of the analysis are displayed below in Table 18.

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>201</td>
<td>51.09</td>
<td>5.43</td>
<td>-2.295</td>
<td>.023</td>
</tr>
<tr>
<td>Yes</td>
<td>39</td>
<td>53.18</td>
<td>4.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A Pearson product moment correlation coefficient was calculated examining the relationship between the number of varsity sports at each institution and the score to the question, “There is an overall need for a mandatory year round drug testing by the NCAA at the Division III level.” A negative correlation was found ($r_{238} = -.210, \ p < .01$), indicating a significant negative linear relationship between the two variables. Certified Athletic Trainers with more varsity sports at their institution believed
there was less of a need for a mandatory year round drug testing program at the Division III level by the NCAA. The results of this analysis are displayed below in Table 19.

Table 19. Pearson Product Moment Correlation Between the Number of Varsity Sports and the Opinion Scores for an Overall Need to Division III Drug Testing by the NCAA

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Varsity Sports &amp; Opinion Scores</td>
<td>240</td>
<td>-.210</td>
<td>.001</td>
</tr>
</tbody>
</table>

The majority of the sports in which positively tested athletes participated in were baseball, basketball, football, and soccer. Each sport had over 10 athletes testing positive for an illegal substance. Sports that had no athletes testing positive at all were gymnastics, rowing, and water polo. When comparing substances for which athletes tested positive for, a significant observation was made. Athletes tested by the NCAA were found to be tested positive for either stimulants or street drugs. No other substances were recorded positive by institutions that had been tested by the NCAA and reported the results. When looking at the substances for which the athlete tested positive, stimulants appeared most often in sports such as football and basketball. As for street drugs, they were mostly prevalent in baseball and basketball. Out of the 13 reported street drug positive
tests, baseball and basketball had seven cases each. Sports such as cross country, golf, gymnastics, lacrosse, rowing, softball, swimming and diving, and water polo were not reported with positive tests or substances.
DISCUSSION

Discussion of Results

This study focused on Division III Certified Athletic Trainers’ opinions on Division III drug testing by the NCAA. The researcher examined how different demographic categories such as the prevalence of drug education programs, number of varsity sports, years of experience, and an institutions own drug testing can affect their opinions of Division III drug testing.

In the first hypothesis, the researcher believed that Certified Athletic Trainers at schools without drug education programs will have a greater opinion for a drug-testing program than schools with drug education programs. There was no previous research conducted on drug education programs and Division III drug testing. It was thought that the presence of a drug education program would cause a Certified Athletic Trainer to be more supportive of a Division III drug testing program by the NCAA. However, there were no significant results shown in this study to support the hypothesis. Even though there were no significant findings, this study found that only 57.9% of Certified Athletic Trainers have drug education programs at
their institution. What this data does show though is the insufficient effort by Division III institutions to help eliminate drug abuse by athletes.

The second hypothesis stated that there will be a positive relationship between the number of varsity sports and the Certified Athletic Trainer’s opinion of a drug-testing program. The researcher assumed that Certified Athletic Trainers would be able to notice drug abuse easier at institutions with greater number of varsity sports. With more varsity sports, this provides more opportunity for athletes to use substances banned by the NCAA. Although there has been no previous research on number of varsity sports and Division III drug-testing programs, a significant correlation was made that did not support the hypothesis. According to the data, there was a significant negative relationship between the two variables. This meant that Certified Athletic Trainers working at institutions with fewer varsity sports had a greater opinion for a Division III drug-testing program. Being a Certified Athletic Trainer with fewer varsity sports to cover means a much stronger relationship with the athletes. Previous research showed that this type of relationship could lead to athletes revealing personalized information about substance abuse. This would result in Certified
Athletic Trainers having a greater opinion for a Division III drug-testing program.

A third hypothesis was made by the researcher stating that there will be no relationship between the number of years of experience and the Certified Athletic Trainer’s opinion of a drug-testing program. No previous research has been made concerning years of experience and Division III drug-testing. This statement was made by the researcher since Certified Athletic Trainers with only a few years of experience may be just as exposed to drug abuse by athletes as those with a greater number of years of experience, having no affect on their opinion. Results of this study supported the hypothesis as Certified Athletic Trainers with fewer years of experience had just as greater of an opinion as those with longer years of experience.

Additional findings were also made using the demographic categories and opinion questions. Comparisons were made using mean scores, presence of own drug testing at institutions, and the score to the question, “There is an overall need for a mandatory year round drug testing by the NCAA at the Division III level.” In the first comparison, there was a significant difference between schools with and without drug-testing programs for opinion
scores. Certified Athletic Trainers at schools with their own drug-testing programs were found to have a higher opinion scores regarding Division III drug testing when compared to schools without a drug testing program. While there were only 39 Certified Athletic Trainers reporting their own drug-testing programs, mean opinion scores were shown to be 2.09 points higher. This shows that Certified Athletic Trainers who have experienced a regulated drug-testing program feel as though a Division III drug testing program by the NCAA is necessary. This difference may be due to the larger number of positive tests recorded from their own institutions drug-testing.

In another comparison, a significant relationship was found between the number of varsity sports and scores to the question, “There is an overall need for a mandatory year round drug testing by the NCAA at the Division III level.” Similar to the second hypothesis, a significant negative relationship was found between the two variables. However, using this comparison, Certified Athletic Trainers with more varsity sports believed there was less of a need for a mandatory year round drug testing program by the NCAA at the Division III level. Based on the results, it is possible to assume that Certified Athletic Trainers with a lot of varsity sports overlook the potential substance
abuse because of the types of sports. Schools with more varsity sports have athletes competing in sports that may have less of a risk to substance abuse. This may include such sports as gymnastics, rowing, and water polo that were not reported by Certified Athletic Trainers as having tested positive for NCAA banned substances.

According to the results, athletic trainers need to be made aware of several factors. Based on the number of positive test results from either NCAA championship drug testing or an institution's own drug testing, substance abuse is a current issue among Division III athletes. Athletic trainers also need to know that athletes competing in baseball, basketball, football, and soccer had higher positive tests for substance abuse and should monitor those athletes more closely. Lastly, the majority of Certified Athletic Trainers at the Division III level believed there was a need for a mandatory year-round drug testing program by the NCAA. A total of 54.2% of responding Certified Athletic Trainers were in agreement and 25.4% were against the statement, "There is an overall need for a mandatory year-round drug testing by the NCAA at the Division III level," while 20.4% remained neutral.
Conclusions

This study confirmed that there is an overall need for a mandatory year round drug testing program at the Division III level as perceived by Division III Certified Athletic Trainers. After analyzing the demographic data, the conclusion can be made that the overall need for a drug testing program does not come from a certain type of Division III Certified Athletic Trainer. This means that it does not matter the background of Certified Athletic Trainers to determine that there is a need for Division III drug testing by the NCAA.

There were a few significant findings for Certified Athletic Trainers opinion scores. The majority of Certified Athletic Trainers believed drug testing put them in a role of police and counselor, while nearly all of them agreed that athletes should experience a drug education session once a year. This shows that Certified Athletic Trainers would rather have athletes attend drug education sessions than counsel the athletes themselves. Also, it can be concluded that this same group that believed drug testing puts them in a role of police would rather be relieved of this position by a regulated year round drug testing program by the NCAA.
Recommendations

Although this study has collected and displayed interesting data regarding the need for a Division III drug-testing program, several alterations can be made in future studies. It is recommended that a population of Division III Certified Athletic Trainers working with football, baseball, basketball, or soccer be used to determine Division III drug testing opinions. Certified Athletic Trainers working with these sports will have a better understand of substance use based on the findings of this study.

Another recommendation for future studies would be to survey Division I and II Certified Athletic Trainers on their opinion of a Division III drug testing program. This would allow any former Division III Certified Athletic Trainers working in Division I and II to voice their opinion as well. Division I and II Certified Athletic Trainers would have no bias opinion on drug testing.

Based on the findings from this study it is recommended that future studies inquire further about an institution’s own drug testing program and drug education programs. Since there is no current year round drug-
testing program in Division III, these are acceptable ways to help prevent substance use among athletes.
REFERENCES


Appendix A

Review of the Literature
Review of the Literature

This literature review will discuss the previous literature written regarding the use of ergogenic aids and performance enhancement drugs, as well as the current regulations to limit their use at the collegiate level. Literature will be reviewed and discussed to understand the current use of ergogenic aids and the need for NCAA drug testing at the division III collegiate level. Over the past couple of years substance abuse has become a popular topic of discussion among athletics. At the collegiate level, athletic trainers are responsible for the health and well being of all of their athletes. This review of the literature will be divided into three sections:
1) Ergogenic Aids and Performance Enhancers, 2) Athletic Drug Testing, and 3) Drug Abuse Among Athletes. A summary of the literature review will also be provided.

Ergogenic Aids and Performance Enhancers

Ergogenic aids are classified as any means of enhancing energy utilization, including energy production, control, and efficiency. Athletes frequently use ergogenic aids to improve their performance and increase their chances
of winning in competition.¹ Ergogenic aids and performance enhancers have been around for thousands of years as there has been speculation of use dating back to the Olympic Games in Ancient Greece. History shows that Olympians of Ancient Greece took a more natural approach by eating mushrooms. Others such as the Aztecs would even eat a human heart, as they believed it would help them perform better in the Olympic games.² Today there are both natural and synthetic drugs that are produced as ergogenic aids and performance enhancers and are used by athletes in a variety of ways.¹ Some of the more popular drugs of choice have been stimulants, anabolic steroids, and hormones. Although many athletes benefit from these substances, each one carries a great amount of risk and possibility of undesirable effects.³

Currently, the NCAA has a list of banned substances that categorizes ergogenic aids and performance enhancers by their use. Substances are categorized into: stimulants, anabolic agents, substances banned for specific sports, diuretics, street drugs, peptide hormones, and analogues. This list of substances is updated annually with additions being made since it was initially put in place. The NCAA outlines the drug classes and provides
specific examples of banned substances including common
generic names of ingredients such as ma huang. 4

The drug class stimulants are an extremely popular
group of substances not only among the athletic population
but also the general population as well. Stimulants have
become a serious issue, as they are now being made
available over the counter and being used in beverages.
One common stimulant that is often abused is amphetamines.
Amphetamines stimulate the body by releasing hormones
called norepinephrine from sympathetic nerves, causing
increased blood pressure and vasoconstriction. Due to
these effects, resistances to fatigue as well as mood
elevations have been recorded. According to Tokish et al, 5
performance studies have shown that amphetamine use
increased quadriceps strength, anaerobic capacity, and time
to exhaustion, however there was no increase in VO2 max.

Similar to amphetamines is another banned stimulant
with the same effects known as ephedrine, which was banned
by the NCAA in 1997. Just like amphetamines, ephedrine has
been linked to numerous adverse side effects including
anxiety, appetite loss, hypertension, hallucinations,
nervousness, dizziness, tremors, heart problems, and
unfortunately death. In a study done by Bents et al, 6 92%
of stimulant users were aware of the NCAA ban on ephedrine
making it a concern as these adverse effects have been reported in healthy individuals of all ages.

One other banned stimulant substance that is commonly abused is caffeine. With similar effects as amphetamines and ephedrine, many people believe as though the substance is safe to consume because of its social acceptability and easy accessibility. Caffeine is an active ingredient often found in soft drinks, coffee, tea, chocolate, cold medications and pain relievers. However, the NCAA detects the substance using urinary testing and has limited caffeine use to 15 ug/ml of urine. This amount is equivalent to approximately eight cups of coffee with at least 100 mg of caffeine per cup. Studies have shown that as little as 3-5 mg/kg of caffeine ingested one hour prior to exercise can enhance endurance performance while remaining at legal urinary levels. While caffeine alone is a powerful stimulant, combining it with another stimulant can be dangerous.

Another ergogenic aid that is banned by the NCAA is anabolic agents, which have become widely abused over the past few years. With an estimated 1 to 3 million athletes using anabolic steroids, the annual black market sales have exceeded $100 million. Athletes have turned to anabolic agents, as they have been known for their dramatic results.
in a small period of time. Anabolic agents are defined as a chemically modified analog of testosterone, the endogenous hormone primarily responsible for male sexual characteristics and muscle anabolism. Although there are a wide range of anabolic agents, testosterone and its derivatives are considered prescription medications with specific instructions, therefore using them without formal consent is considered illegal.

Three major mechanisms take place as anabolic agents are put into the human body. First, a positive nitrogen balance is created as ingested proteins are metabolized better. Second, anabolic effects directly induce skeletal muscle synthesis. Finally, a perceived state of euphoria is experienced followed by a decreased muscle fatigue within the body, thus allowing someone to increase their level of intensity while lifting and training. While anabolic agents have been known to increase muscle size, strength, and fat-free mass, the adverse effects far outweigh the positive ones. Steroid users have experienced side effects including: acne, decreased sperm production, excess growth of body hair, severe tendon ruptures, baldness, infertility, and increased mood changes as well as many other serious complications.
A serious issue concerning anabolic agents is the sudden rise in designer steroids. Designer steroids are structurally manipulated drugs that mimic the muscle building effects of anabolic steroids and were chemically altered so not to be detected by existing testing protocols.\textsuperscript{5,11} This method has become more popular among professional athletes as seen with the company BALCO and the designer steroid THG. Even though the Anabolic Steroid Control Act of 1990 banned distribution of these steroids, elite athletes commonly use them because they have remained unidentified by drug testing procedures. The creators of these drugs are well educated in the mechanisms of drug testing procedures and have the necessary skills in beating the system.

Human growth hormone (HGH) is another member of the NCAA banned substance list that falls under the category of peptide hormones. This hormone is responsible for the increase amino acid uptake and protein synthesis as well as stimulation of growth in our bodies from when we are born.\textsuperscript{9} Also composed in the pituitary gland, it plays an important role in the body’s use of energy. Recent studies have concluded that while HGH enlarges one’s stature, there is no evidence to support the claim that it enhances performance, as stated by Tokish et al.\textsuperscript{5}
A popular drug of choice among the general population including athletes is marijuana. Classified by the NCAA as street drug, this illegal substance causes personality changes and symptoms of psychosis.\textsuperscript{12} Although there is no known beneficial uses of this drug for performance, the growing popularity brings up potential health risks.\textsuperscript{13} These selective banned substances are only a fraction of the portion of known drugs currently banned by the NCAA.

**Athletic Drug Testing**

It has been well known that student-athletes use a variety of drugs for a multitude of reasons.\textsuperscript{14} In an attempt to limit this drug abuse, the NCAA has instituted a drug-testing program that was first established in 1986. The drug-testing program has been designed for the protection and to safeguard the health and safety of student athletes. Also, the program was created so that no athlete has an artificial induced advantage or may be pressured into consuming substances in an attempt to remain competitive.\textsuperscript{4}

To ensure this fair level of play, the NCAA drug-testing program involves a urine collection on specific occasions, which are brought for laboratory analyses to check for the presence of banned substances.\textsuperscript{15} These banned
substances are ergogenic aids and performance enhancers that jeopardize the student-athletes health and safety. The NCAA Executive Committee has composed a list of these substances while new ones have been added annually as technology evolves. The list of substance is categorized into drug classes for easier reference.

The NCAA Drug Testing Program begins when student-athletes must sign a Drug Testing Consent Form, prior to participation in intercollegiate athletics. The form contains rules and bylaws that are specific to the student-athletes division level and provides a list of NCAA banned substances. By signing, student-athletes have agreed to terms and conditions concerning future drug testing procedures. The consent form is a signed confirmation that the athlete has been informed of possible consequences and provided with a current list of NCAA banned substances. For Division I and II athletes, this form serves as a written contract to a year-round drug-testing program that allows the NCAA to retrieve a urine collection upon request. This includes when the athlete is in season and out of season as well as out of school for the summer. As for Division III, this form acts as an agreement, allowing the NCAA to test an athlete if he or she may reach any NCAA championship or any postseason game for football. ⁴
Upon urine collection, if an athlete tests positive for any of the banned substances then the following chain of events will occur. The school’s athletic director will be contacted by the NCAA and notified of the athlete’s results. The athlete will then be declared ineligible for further participation in all sports for one full calendar year. If the positive test occurs during the off-season, then the athlete will miss the ensuing season. If the result occurs during regular or post season competition, then the athlete is ineligible for the remainder of that season and up until that point of the following season. That athlete may also be required to submit another urine collection prior to returning to play. If an athlete tests positive for a banned substance a second time, he or she shall lose their remaining eligibility in all sports. Also, any athlete that does not report to their scheduled drug-test will be given an automatic positive test result.4

The NCAA Drug-Testing Program is a well-defined system, which is conducted in a professional manner. However, the program and its contents have raised some debate among both athletic trainers and athletes. The primary issue among athletic trainers is their dual role when dealing with athletes. According to a study by Starkey et al,16 62.1% of the responding athletic trainers
indicated that their association with the drug screening processes puts them in a dual role of counselor and police. Athletic trainers are known to have an advantage of meeting these athletes in an individualized and personalized setting where treatment, interaction, and intervention take place, revealing personal information.\textsuperscript{17} Although the NCAA does not mandate their participation in the drug screening process, they must act both as a counseling resource and a representative to help detect substance abuse among student athletes. Also, athletic trainers would rather provide contribution towards substance abuse programs than their association with the drug screening processes.\textsuperscript{16,17}

There are several issues of debate by the athletes concerning the drug-testing program. The first issue relates to the randomized drug testing of non-suspicious athletes which is frequently considered to be a violation of their Fourth Amendment rights.\textsuperscript{18} In 1994, a case was brought to the California Supreme Court in which the court ruled in favor of the NCAA, stating that student athletes are held to a lesser expectation of privacy.\textsuperscript{18,19} While in a separate case between the University of Colorado and Derdeyn in 1993, the Colorado Supreme Court ruled in favor of the student athlete. The judge’s reasoning was that
urine drug testing without adequate suspicion was a violation of the Fourth Amendment.\textsuperscript{18}

Another issue among athletes is the debate over the specific drugs that they are being tested for by the NCAA. As stated by the NCAA, the purpose of the Drug Testing Program is to test for substances that may jeopardize the health and safety of the athlete. However, some athletes believe they should only be held accountable for the substances that would provide them with an unfair advantage over their competition. Therefore, testing for anything other than performance enhancing substances (i.e. street drugs) would be infringing on their privacy.\textsuperscript{18,20}

With the NCAA testing for substances other than performance enhancers, there have been questions concerning the reliability of the tests. Athletes have begun to worry about the possibility of testing positive for substances that have been ingested neither for performance enhancing or recreational purposes.\textsuperscript{18} On top of the possibility of human error in the laboratory, more substances are added annually to the NCAA banned substance list where athletes have to be more cautious of what the products they are consuming contain.

Overall, the NCAA Drug-Testing Program has divided the population into two sides. There are those that believe
the program provides health and safety for the athlete, fair competition, and discourages substance use. Then there are those that argue the program entices athletes to cheat, violates an athlete’s privacy, and unfairly singles out the athlete for scrutiny. However, in Diacin’s study of male athlete’s the consensus was that the value of playing in a drug-free environment outweighed the disadvantages of the NCAA Drug-Testing Program.\textsuperscript{18,20}

Drug Abuse Among Athletes

While there has been a tremendous effort to limit the use of NCAA banned substances, student athletes continue to abuse them. The NCAA is made up of over 1,000 schools comprised of 350,000 athletes competing in 30 sports among 3 divisions. With the competition level increasing each year, athletes are finding newer ways of gaining an edge on other competitors. For this they are turning to performance enhancing drugs and ergogenic aids, as well as recreational drugs.\textsuperscript{21}

In a recent study of college hockey players, there was a significant find in the abuse of metabolic stimulants. As 122 college hockey players were surveyed, 58% of the athletes were willing to admit to using ephedrine and
pseudoephedrine to enhance their performance. As for the respondents who were no users, 19% of them confessed that they intend to use NCAA banned substances at some point in their college careers. Also, one third of the respondents admitted to using the drugs currently, while an astonishing 33% said that they would use a banned substance if it would get them into the National Hockey League. Although this is only a small survey sample in reflection to the entire athletic population, metabolic stimulants are one of the more commonly abused drugs, along with supplements. Since supplements are easily accessible these days and can be purchased over the counter at any local store, it has become a major problem for the NCAA. Supplements have represented more then two thirds of the positive test results and have made up about three fourths of the appeals received against such findings. This was the evidence needed to support a by-law passed by legislation preventing any NCAA school from providing nutritional supplements to their athlete, except for carbohydrate and energy replacement products.

A lot of times the pressure to perform better does not necessarily come from the athlete themselves. Outside influences can pay tribute to the ongoing drug abuse. Testimonials from athletes have been documented where
individuals have succumbed to substance abuse due to the pressure from coaches.\textsuperscript{24} One college football player spoke in court about how his training without using drugs brought him to a level that was considered excellent for most players. Yet his coach continued to pressure him to get bigger and stronger before falling victim to substance abuse.\textsuperscript{25} This pressure may be implied specifically in the off season when most athletes do their training prior to their season. That pressure may have contributed to the 3.3\% that tested positive for steroids during a prior off-season testing, according to Duda.\textsuperscript{26}

A major concern and problem at the collegiate level is the issue of alcohol use among athletes. While many people find alcohol use socially acceptable and legal in today’s standards, on the playing field it is considered an illegal substance. All athletes run the risk of testing positive and losing a year of eligibility by consuming alcohol. The problem comes from the alcohol abundant environment on college campuses and consistent prevalence with collegiate athletes. This is evident, as studies have shown that student-athletes consume significantly more alcoholic beverages than non-athletes.\textsuperscript{27,29} Statistics also revealed that men consume an average of 21 units per week while women consume as many as 9 units of alcohol weekly.\textsuperscript{28,29}
The most comprehensive study concerning substance abuse among athletes comes every four years from Dr. Green of UCLA. By surveying almost 14,000 student-athletes, Green was able to examine substance use according to team, ethnicity, NCAA Division, reason for use, and source of drugs. While data showed substance use to be dominant in male team sports, a significant relationship among ethnicities for the prevalence of substance use was also seen. Caucasians were found to be the highest for substance abuse for smokeless tobacco, alcohol, ephedrine, marijuana, and psychedelics. When comparing student-athlete substance abuse habits, a significant relationship was seen among NCAA Divisions. The prevalence of alcohol, anabolic steroids, ephedrine, alcohol, marijuana, and psychedelic use was noticed to be the highest in Division III.

After looking at who, what, and where of the situation, Green surveyed student-athletes on the why aspect. In terms of reasons for use, the majority of the responses were for either performance enhancement or to recover from an injury. As for student-athletes that admitted to anabolic steroid usage, 40% stated that they had obtained the drug from a physician. Since student-athletes have become exposed to the prevalence of substance
use, 66.9% expressed that all college athletes should be tested by the NCAA. Furthermore, 65% stated that student-athletes should be tested by their own school. This is a remarkable voice of support by the student-athlete population on a highly debatable issue.\textsuperscript{30}

Summary

The technology and advancements in science have brought us astonishing amounts of ergogenic aids and performance enhancing drugs. While many of them have been proven to increase an athlete’s physical appearance, all of them are detrimental to an athlete’s health and safety. Collegiate athletes are continuing to abuse NCAA banned substances even knowing the adverse effects it may have on their body. As the majority of these substances are not even regulated by the Federal Drug Administration, very few people know the long-term effects of these drugs. With their growing popularity among athletics, the NCAA does an excellent job of limiting their use among students.

The NCAA Drug Testing Program has been set in place since 1986 to protect the health and safety of these young athletes as well as deter any unfair competition. With its strict guidelines and by-laws, athletes must oblige to
randomized urine specimen collections in order to participate in a sport. Any trace of NCAA banned substance is grounds for loss of eligibility of one year following a positive test result. While this system may seem flawless, Division III athletes are less restricted as they are only subject to testing at championship events. This may cause opportunity concerning the prevalence of substance abuse by student-athletes.

Research has shown the evidence of substance use among athletes at all divisions. As athletes are constantly pushed by coaches and themselves to perform better, many will turn to ergogenic aids and performance enhancers for the answers. With the potential flaws and drawbacks to the NCAA Drug Testing Program, opportunity arises for athletes to experiment in a dangerous field that needs more regulation.
Appendix B

The Problem
The Problem

Statement of the Problem

Over the past few years, steroids and performance enhancement drugs have become a serious issue in sports. In every level of competitive sports from high school to professional, athletes are trying to find new ways to get an edge on others. Many are turning to the easy way out by taking supplements and ergogenic aids as the answer. Currently, the NCAA regulates both Division I and Division II sports by holding randomized mandatory drug testing every year to limit the use of these substances. At the elite level, there are also randomized drug tests as well, in which we are seeing role model type athletes being caught with illegal substances. Today, there is no known drug testing to help regulate the use of these substances among Division III athletics during the regular season. The purpose of this study was to look at the need for a regulated drug testing procedure at the Division III level of athletics.
Definition of Terms

The following terms are used throughout the study and, therefore, will be defined as they pertain to this specific research:

1. BOC – An organization known as the National Athletic Trainers’ Association Board of Certification Inc. (BOC) that has been responsible for the certification of athletic trainers since 1969. Not only does the BOC provide a certification program for the entry-level athletic trainer but it also establishes requirements for maintaining status as a certified athletic trainer.

2. Ergogenic Aids - Any substance or supplement that contributes to the enhancement of an athlete’s performance. The NCAA Banned Substances are identified as ergogenic aids and are used for energy production, control, and efficiency.1,3,6,8

3. NCAA Banned Substances - A list of substances comprised by the NCAA Executive Committee that is broken up into six categories based on their effects and usage. The six categories include: Stimulants, Anabolic Agents, Substances Banned for Specific Sports, Diuretics, Street Drugs, Peptide Hormones and Analogues.2,7
4. NCAA Drug Testing Program – A system designed by the NCAA Executive Committee in 1986 to protect the health and safety of these young athletes as well as deter any unfair competition. With its strict guidelines and by-laws, athletes must oblige to randomized urine specimen collections in order to participate in a sport.2,7

**Basic Assumptions**

The following are basic assumptions that can be made for this study:

1. All subjects currently working at the Division III level are Certified Athletic Trainers.

2. The Certified Athletic Trainers will answer the questionnaire honestly and to the best of their knowledge.

3. The Certified Athletic Trainers will be given adequate time and privacy to accurately answer the questionnaire to their best ability.

4. Certified Athletic Trainers are the best-qualified group to answer this survey for the purpose of the study.
Limitations of the Study

The following are possible limitations of the study:

1. Excluding subjects who are not currently employed at a Division III school, but had previously worked at that level for a considerable amount of time.

2. Some subjects may have no knowledge of their athlete’s substance abuse due to insufficient experience and exposure.

Significance of the Problem

Every year, the National Collegiate Athletic Association continues to update the banned substance list which applies to Division I, I-AA, and II athletes during the regular season. A year round testing program has been implemented for these divisions in order to help regulate the use of banned substances among athletes. The only division at the collegiate level in the United States that does not regulate the usage of banned substances is Division III.

Currently, supplement companies are a billion dollar industry in which they have increased the availability of certain substances by concealing them in other products. Since most supplements are sold at any local vitamin store, this makes them accessible to athletes of all ages,
including high school. The problem still remains among supplements and ergogenic aids that the Federal Drug Administration does not regulate them and it is a buyer beware market.

Athletes today at the collegiate level are watching professional athletes and so called role models use ergogenic aids and supplements to help improve their performance. As supplement use remains an issue at the collegiate level, athletic trainers must be the ones to recognize and educate the athletes of the potential risks. With no regulation of banned substances at the Division III level, athletic trainers may be the first ones to admit the need for year round drug testing program.
Appendix C

Additional Methods
Appendix C1

The Division III Drug Testing Questionnaire
Division III Drug Testing Questionnaire

Participants for this survey were selected at random from the NATA membership database according to the selection criteria provided by the student doing the survey. This student survey is not approved or endorsed by NATA. It is being sent to you because of NATA’s commitment to athletic training education and research.

1. Gender
   - Male
   - Female

2. Position
   - Head Athletic Trainer
   - Assistant Athletic Trainer
   - Program Director

3. Number of Varsity Sports
   - __________

4. Sport Coverage (Check all that apply)
   - Baseball
   - Basketball
   - Cross Country
   - Field Hockey
   - Football
   - Golf
   - Gymnastics
   - Ice Hockey
   - Lacrosse
   - Rowing
   - Soccer
   - Softball
   - Swimming & Diving
   - Tennis
   - Track & Field
   - Volleyball
   - Water Polo
   - Wrestling

5. Years of Experience at Division III level
   - __________
6. Has your college ever been drug tested before by the NCAA?

- Yes
- No
  - If no, Skip to Question 10.
  - If yes,
    7. How many tested positive?

- ___________

8. What sport(s) did the athlete(s) participate in?

- Baseball
- Basketball
- Cross Country
- Field Hockey
- Football
- Golf
- Gymnastics
- Ice Hockey
- Lacrosse
- Rowing
- Soccer
- Softball
- Swimming & Diving
- Tennis
- Track & Field
- Volleyball
- Water Polo
- Wrestling

9. What did the athlete(s) test positive for? (Check all that apply)

- Stimulants
- Anabolic Agents
- Substances Banned for Specific Sports
- Diuretics
- Street Drugs
- Peptide Hormones and Analogues
10. Does your college/university do its own drug testing?
   - Yes
   - No
     - If no, Skip to Question 16.
     - If yes,
       11. What are the sanctions based on?
           - Days
           - Weeks
           - Months
           - Games
           - Seasons
           - Indefinite

12. How often are they tested?
    - Weekly
    - Monthly
    - Yearly
    - Varies

13. Is the selection process randomized?
    - Yes
    - No

14. How many positive tests have there been?
    - _________

15. Are you currently aware of any athletes using NCAA banned substances?
    - Yes
    - No
      - If no, Skip to Question 17.
      - If yes,
        16. Approximately, how many number of athletes?
            - _________

17. Does your college have a drug education program available to athletes?
    - Yes
    - No
      - If no, Skip to Question 20.
      - If yes,
18. How often is it offered?
   - Weekly
   - Monthly
   - Each Semester
   - Yearly
   - Upon Request

19. Is it adequately structured?
   - Yes
   - No

20. Regarding drug screening, athletic trainers are often times forced to assume the role of both police and counselor.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

21. Drug testing has compromised my relationship and rapport with athletes in some sports.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

22. Athletic trainers should facilitate the organization of a substance abuse education program.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

23. Student-athletes should have an educational session at least once a year.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

24. Administrators genuinely support health/wellness educational programs.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

25. Coaches genuinely support health/wellness educational programs.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

26. Athletic trainers should be a resource for the organization of drug rehabilitation programs.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A
27. Education, without testing, will be an effective deterrent to substance abuse.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

28. Athletic trainers should be the organizers of urine specimen collecting for drug testing.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

29. Coaches have been, or would be, supportive of a player in drug rehabilitation.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

30. I feel that drug screening is an invasion of privacy.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

31. Targeting athletes only, rather than the student body as a whole, is an inherently a discriminatory practice.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

32. If required, I would submit to a drug screen in order to keep my job.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

33. The opportunity and potential use of NCAA banned substances is a cause for concern at my institution.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

34. Athletes at my institution are properly informed of the NCAA banned substances and the sanctions they entail.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

35. There is an overall need for a mandatory year round drug testing program by the NCAA at the Division III level.

   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree  N/A

Approved by the California University of Pennsylvania IRB
Appendix C2

IRB Human Subjects Form
Institutional Review Board (IRB) approval is required before beginning any research and/or data collection involving human subjects.

(Reference IRB Policies and Procedures for clarification)

**Project Title**
The Necessity for NCAA Division III Drug Testing as Perceived by Division III Certified Athletic Trainers

**Researcher/Project Director**
Michael Hurley

**Phone #**
781-910-6256

**E-mail Address**
HUR5392@cup.edu

**Faculty Sponsor (if required)**
Dr. William B. Biddington

**Department**
Health Science and Sports Studies

**Project Dates**
January 2007 to March 2007

**Sponsoring Agent (if applicable)**

**Project to be Conducted at**
California University of Pennsylvania

**Project Purpose:**
- [ ] Thesis
- [ ] Research
- [ ] Class Project
- [ ] Other

Keep a copy of this form for your records.

**Required IRB Training**
The training requirement can be satisfied by completing the online training session at [http://cme.nci.nih.gov/](http://cme.nci.nih.gov/). A copy of your certification of training must be attached to this IRB Protocol. If you have completed the training at an earlier date and have already provided documentation to the California University of Pennsylvania Grants Office, please provide the following:

**Previous Project Title**

**Date of Previous IRB Protocol**
Please attach a typed, detailed summary of your project AND complete items 2 through 6.

1. Provide an overview of your project-proposal describing what you plan to do and how you will go about doing it. Include any hypothesis(es) or research questions that might be involved and explain how the information you gather will be analyzed. For a complete list of what should be included in your summary, please refer to Appendix B of the IRB Policies and Procedures Manual

The purpose of this study is to look at the need for a regulated drug testing procedure at the Division III level of athletics. Over the past few years, steroids and performance enhancement drugs have become a serious issue in sports. In every level of competitive sports from high school to professional, athletes are trying to find new ways to get an edge on others. Many are turning to the easy way out by taking supplements and ergogenic aids as the answer. Currently, the NCAA regulates both Division I and Division II sports by holding randomized mandatory drug testing every year to limit the use of these substances. At the elite level there are also randomized drug tests as well, in which we are seeing role model type athletes being caught with illegal substances. Today, there is no known drug testing to help regulate the use of these substances among Division III athletics. The following hypotheses were based on a review of the literature and intuition of the researcher. 1) Certified Athletic Trainers at schools without drug education programs will have a greater opinion for a drug-testing program than schools with drug education programs. 2) There will be a positive relationship between the number of varsity sports and the Certified Athletic Trainer’s opinion of a drug-testing program. 3) There will be no relationship between the number of years of experience and the Certified Athletic Trainer’s opinion of a drug-testing program. An alpha level of .05 will be used for the statistical significance of all tests. A t-test will be used to determine Hypothesis I while a Pearson Product Moment Correlation will be used to determine Hypothesis II and III.

2. Section 46.11 of the Federal Regulations state that research proposals involving human subjects must satisfy certain requirements before the IRB can grant approval. You should describe in detail how the following requirements will be satisfied. Be sure to address each area separately.

   a. How will you insure that any risks to subjects are minimized? If there are potential risks, describe what will be done to minimize these risks. If there are risks, describe why the risks to participants are reasonable in relation to the anticipated benefits.

      There are no foreseeable risks.

   b. How will you insure that the selection of subjects is equitable? Take into account your purpose(s). Be sure you address research problems involving vulnerable populations such as children, prisoners, pregnant women, mentally disabled persons, and economically or educationally disadvantaged persons. If this is an in-class project describe how you will minimize the possibility that students will feel coerced.

      This study will be based on the population for Certified Athletic Trainers at the Division III level on a voluntary basis. The subjects are over the age of 18 years old and are administrators of the institutions.

   c. How will you obtain informed consent from each participant or the subject’s legally authorized representative and ensure that all consent forms are appropriately documented? Be sure to attach a copy of your consent form to the project summary.

      There is no Informed Consent Form required for this on-line study. Inform consent will be implied upon completion and return of the questionnaire to the researcher.
d. Show that the research plan makes provisions to monitor the data collected to insure the safety of all subjects. This includes the privacy of subjects’ responses and provisions for maintaining the security and confidentiality of the data.

In order to maintain confidentiality of the subjects’ records, Michael Hurley will maintain all documents in a secure location in which only the student researcher and research advisor can access.

3. Check the appropriate box(es) that describe the subjects you plan to use.

- Adult volunteers
- CAL University Students
- Other Students
- Prisoners
- Pregnant Women
- Physically Handicapped People
- Mentally Disabled People
- Economically Disadvantaged People
- Educationally Disadvantaged People
- Fetuses or fetal material
- Children Under 18
- Neonates

4. Is remuneration involved in your project? ☐ Yes or ☒ No. If yes, Explain here.

5. Is this project part of a grant? ☐ Yes or ☒ No. If yes, provide the following information:
   - Title of the Grant Proposal
   - Name of the Funding Agency
   - Dates of the Project Period

6. Does your project involve the debriefing of those who participated? ☐ Yes or ☒ No. If Yes, explain the debriefing process here.

7. If your project involves a questionnaire interview, ensure that it meets the requirements of Appendix __ in the Policies and Procedures Manual.
Project Director’s Certification
Program Involving HUMAN SUBJECTS

The proposed investigation involves the use of human subjects and I am submitting the complete application form and project description to the Institutional Review Board for Research Involving Human Subjects.

I understand that Institutional Review Board (IRB) approval is required before beginning any research and/or data collection involving human subjects. If the Board grants approval of this application, I agree to:

1. Abide by any conditions or changes in the project required by the Board.
2. Report to the Board any change in the research plan that affects the method of using human subjects before such change is instituted.
3. Report to the Board any problems that arise in connection with the use of human subjects.
4. Seek advice of the Board whenever I believe such advice is necessary or would be helpful.
5. Secure the informed, written consent of all human subjects participating in the project.
6. Cooperate with the Board in its effort to provide a continuing review after investigations have been initiated.

I have reviewed the Federal and State regulations concerning the use of human subjects in research and training programs and the guidelines. I agree to abide by the regulations and guidelines aforementioned and will adhere to policies and procedures described in my application. I understand that changes to the research must be approved by the IRB before they are implemented.

Professional Research

Project Director’s Signature

Department Chairperson’s Signature

Student or Class Research

Student Researcher’s Signature

Supervising Faculty Member’s Signature if required

Department Chairperson’s Signature

ACTION OF REVIEW BOARD (IRB use only)

The Institutional Review Board for Research Involving Human Subjects has reviewed this application to ascertain whether or not the proposed project:

1. Provides adequate safeguards of the rights and welfare of human subjects involved in the investigations;
2. Uses appropriate methods to obtain informed, written consent;
3. Indicates that the potential benefits of the investigation substantially outweigh the risk involved.
4. Provides adequate debriefing of human participants.
5. Provides adequate follow-up services to participants who may have incurred physical, mental, or emotional harm.

Approved ☐ Disapproved ☐

Chairperson, Institutional Review Board

Date 01/18/09
Appendix C3

Cover Letter
Dear Fellow Certified Athletic Trainer:

I am a master’s degree candidate at California University of Pennsylvania, requesting your assistance to complete part of my degree requirements. Please follow the link at the end of this letter to an online survey titled: The Division III Drug Testing Questionnaire.

The questionnaire consists of 19 demographic questions and 16 Likert Scale (1-strongly disagree to 5 strongly agree) questions. The survey will take about five to seven minutes to complete.

Among four hundred and thirty three Division III colleges, seven hundred and forty four randomly selected certified Board of Certification members with a listed email address are being asked to submit this questionnaire, but you have the right to choose not to participate. The California University of Pennsylvania Institutional Review Board has approved this study for the Protection of Human Subjects. Completion of the online survey constitutes informed consent to participate in this study.

This is a completely anonymous questionnaire and upon submission, neither your name nor email address will be attached to your answers. Your information will be kept strictly confidential.

As a fellow certified athletic trainer, your knowledge and opinions regarding this topic makes your input invaluable. Please take a few minutes to fill out the anonymous questionnaire you will find by clicking on this link and submit it as soon as possible:

( http://www.surveymonkey.com/s.asp?u=400013333183 )

Thank you for your time and consideration.

Sincerely,

Michael J. Hurley, ATC, PES
Graduate Athletic Training Education Program
Department of Health Science and Sport Studies
California University of Pennsylvania
250 University Avenue
California, Pennsylvania 15419
Hur5392@cup.edu.
REFERENCES


Title: THE NECESSITY FOR NCAA DIVISION III DRUG TESTING AS PERCEIVED BY DIVISION III CERTIFIED ATHLETIC TRAINERS

Researcher: Michael J. Hurley

Advisor: Dr. William B. Biddington

Date: April, 2007

Research Type: Descriptive Design

Purpose: To look at the need for a regulated drug testing procedure at the Division III level of athletics.

Method: Certified Athletic Trainers (N = 240) currently working at Division III institutions participated. The Division III Drug Testing Questionnaire assessed overall need for mandatory year round Division III drug testing by the NCAA.

Findings: The number of years of experience and presence of a drug education program had no affect on a Certified Athletic Trainers’ opinion of Division III drug testing. A significant correlation was found between the number of varsity sports and a Certified Athletic Trainers’ opinion of Division III drug testing. Presence of an institution’s own drug testing program significantly affected opinions of Division III drug testing.

Conclusion: There was an overall need for regulated Division III drug testing by the NCAA. Certified Athletic Trainers’ opinions were affected by number of varsity sports and presence of an institution’s own drug testing program.