

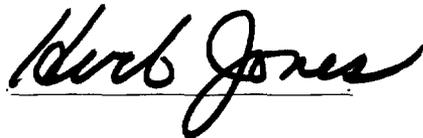
Steroid Use: A Comparative Study

An Honors Thesis

by

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Purpose of Thesis

The purpose of this paper is to determine the prevalence of steroid use among a group of Ball State University students. The paper compares the findings of this study to the findings of other studies conducted on adolescents.

Introduction

Over the last decade, anabolic steroids have become a way for some athletes and non athletes to increase muscle mass and strength. Although steroids do seem to be able to help users add muscle rapidly, there are also many harmful side effects associated with steroid use.

Anabolic steroids are, by definition, "a class of synthetic compounds which closely resemble testosterone, the male sex hormone."¹ The clinical uses of anabolic steroids include the treatment of testosterone deficiency, anemia, carcinoma of the breast, osteoporosis, and arthritis.² The list of actual or potential adverse side effects is lengthy, indeed. It includes liver function abnormalities, testicular atrophy, feminization, acne, hair loss, and behavioral changes/psychiatric disorders.³ In spite of these adverse effects, people are still using steroids. The purpose of this study is to determine steroid use among students enrolled in a general studies class at Ball State University and to compare these findings with those of other studies conducted on adolescents.

Review of Literature

The studies which will be compared were performed by Windsor and Dimitru⁴, Johnson et al⁵, and Buckley et al⁶. In the Windsor study, 1010 surveys were distributed equally to male athletes, male non athletes, female athletes, and female non athletes enrolled in 10 different high schools. The surveys were completed anonymously and voluntarily by 901 students.

Students responded to questions concerning steroid use, age, athletic participation, and knowledge of others using anabolic steroids. The study found that 5.0% of high school males reported using steroids, 1.4% of high school females reported using steroids, and 25.2% of high school students reported knowing at least one other steroid user. Also, the study found that 72.3% of male steroid users were athletes, and 33.3% of female steroid users were athletes.

In the Johnson study, 853 questionnaires were administered to male students in six high schools in Arkansas. The questionnaire was anonymous and voluntary. It contained questions pertaining to steroid use, reasons for steroid use, and participation in athletics. The study found that 11.1% of high school males reported using steroids. The study also found that 88.4% of these steroid users were athletes.

In the Buckley study, 3403 male high school seniors from 46 public and private high schools across the country responded to a questionnaire. The questionnaire was anonymous and voluntary and sought to establish current or previous steroid use as well as characteristics of users and nonusers. The study found that 6.6% of high school males reported using steroids.

Methods

A survey instrument (see appendix) was administered to a group of students enrolled in Health Science 160- Fundamentals of Human Health at Ball State University. Responses to the 7-question survey were anonymous and voluntary. Students were asked questions pertaining to gender, age, steroid

use (both in high school and in college), participation in sports (both in high school and in college), and knowledge of others using steroids. The survey was completed by 153 students (70 males, 83 females). The results of the survey were then compared to studies performed by Windsor and Dimitru⁴, Johnson et al⁵, and Buckley et al⁶ to see how the results compared with one another. Also, the results of the Ball State sample were compared between high school use and college steroid use to show possible trends.

Results

Table 1: Percentage of anabolic steroid use (Ball State study)

		<u>MALES</u>		
		ATHLETES	NON ATHLETES	BOTH
H.S.		4/54 (7.4%)	1/16 (6.3%)	5/70 (7.1%)
COLLEGE		7/23 (30.4%)	4/47 (8.5%)	11/70 (15.7%)
		<u>FEMALES</u>		
		ATHLETES	NON ATHLETES	BOTH
H.S.		2/58 (3.4%)	0/25 (0.0%)	2/83 (2.4%)
COLLEGE		2/10 (20%)	1/73 (1.4%)	3/83 (3.6%)

Of the 70 male respondents, 5 reported anabolic steroid use in high school. Of these 5 users, 4 were high school athletes, while the other one was not an athlete in high school. Eleven of the seventy males reported anabolic steroid use in college (7 athletes, 4 non athletes). Of the 83 female respondents, 2 reported anabolic steroid use in high school. Both of these users were high school athletes. Three of the 83 females reported steroid use in college (2 athletes, 1 non athlete). The percentage of steroid users in males doubled from high school to college. Much of this change appears to be in the non athlete.

Table 2: Respondent's Knowledge of Others Using Steroids

MALES	FEMALES	BOTH
49/70	36/83	85/153
(70%)	(43.4%)	(55%)

Of the 70 male respondents, 49 reported knowing at least one other person who used anabolic steroids. Of the 83 female respondents, 36 reported knowing at least one steroid user. Better than half (55%) of the total sample reported knowing others who were using steroids.

Table 3: Percentage steroid use among high school students



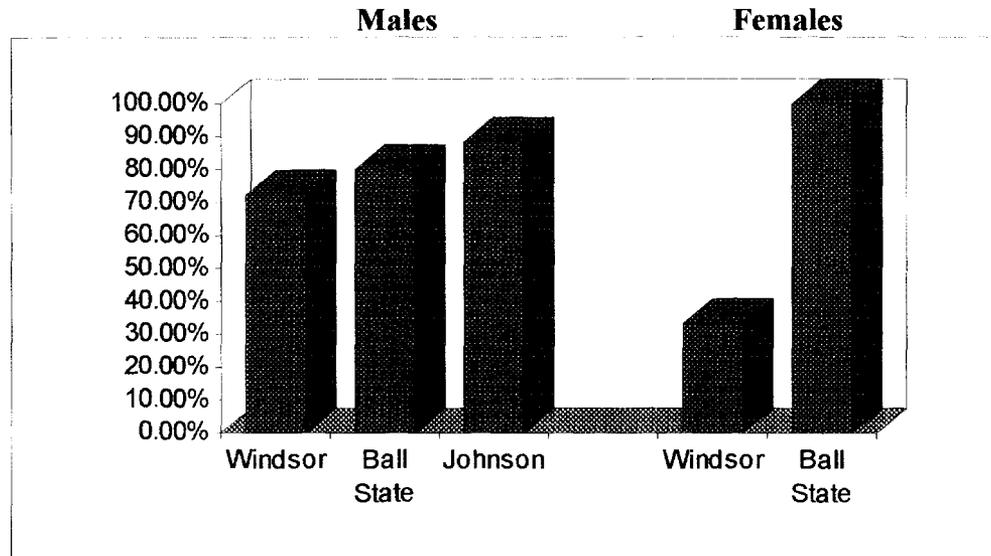
When compared to the other studies, the Ball State study found a similar incidence of steroid use among high school students. Of the male respondents in this study, 7.1% reported anabolic steroid use, compared to 5.0% in the Windsor study, 11.1% in the Johnson study, and 6.6% in the Buckley study. Only the Johnson study appears to be different. Their finding was more than 50% higher than any other study. Of the female respondents in this study, 2.4% reported anabolic steroid use, compared to the Windsor study (the only one dealing with females) where 1.4% of high school females reported using anabolic steroids.

Table 4: Knowledge of others using anabolic steroids

	MALES	FEMALES	BOTH
BALL STATE	49/70 (70%)	36/83 (43.4%)	85/153 (55%)
WINDSOR	130/462 (28.1%)	97/439 (22.1%)	227/901 (25.2%)

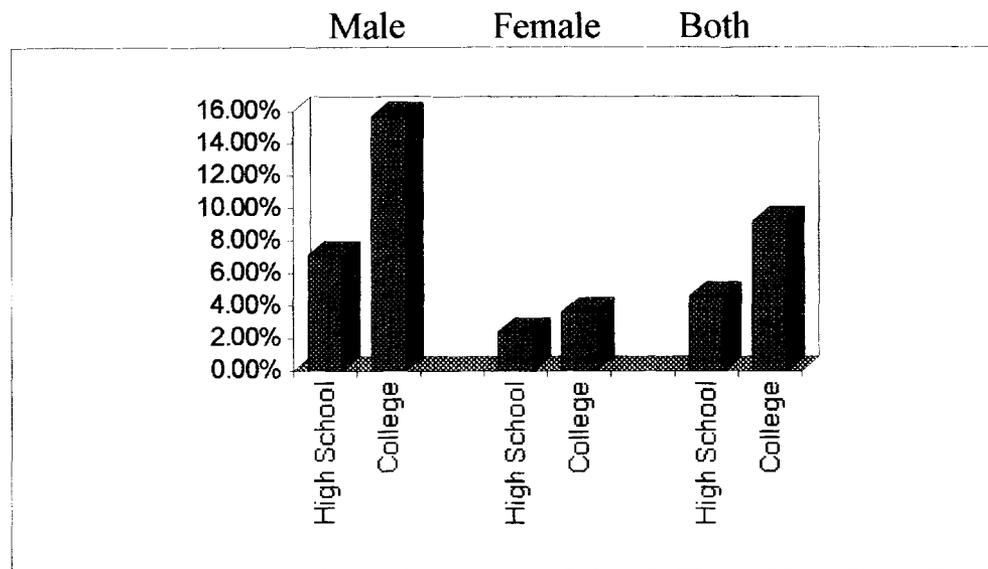
The Ball State study found a higher percentage of respondents who had knowledge of others using anabolic steroids. Seventy percent of males and 43.4% of females knew at least one steroid user in the Ball State study, whereas only 28.1% of males and 22.1% of females in the Windsor study reported knowing at least one anabolic steroid user. One can only speculate why this great difference. It may be because the Windsor study sample was high school students as compared to college students in the Ball State sample.

Table 5: Percentage of steroid users who are athletes



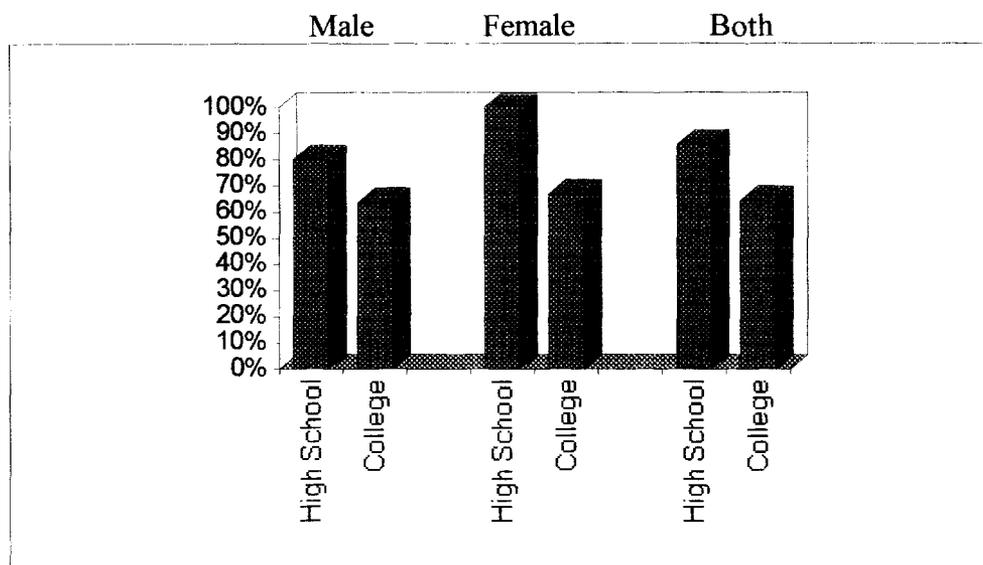
The percentage of male steroid users who are athletes are comparable in all of the studies. In the Ball State study, 4 of 5 (80%) male high school steroid users were athletes, compared to 94 of 130 (72.3%) in the Windsor study and 84 of 95 (88.4%) in the Johnson study. However, 2 of 2 (100%) female high school steroid users in the Ball State study were athletes, compared to only 2 of 6 (33.3%) in the Windsor study.

Table 6: High school use versus college use (Ball State study)



Within the Ball State study, the percentages of anabolic steroid use more than doubled for men from high school to college. Five of seventy males (7.1%) reported anabolic steroid use in high school, while 11 of 70 (15.7%) reported anabolic steroid use in college. Two of eighty-three females (2.4%) reported anabolic steroid use in high school, while 3 of 83 (3.6%) reported anabolic steroid use in college. A total of 7 of 153 (4.6%) students reported anabolic steroid use in high school, versus 14 of 153 (9.2%) reporting anabolic steroid use in college.

Table 7: Percentage of steroid users who are athletes (Ball State study)



From high school to college, the percentage of steroid users who were non athletes increased. Among the males, 4 of 5 (80%) high school anabolic steroid users were athletes, while 7 of 11 (63.6%) college anabolic steroid users were athletes. Among females, 2 of 2 (100%) high school anabolic steroid users were athletes, while 2 of 3 (66.7%) college anabolic steroid users were athletes. Overall, 6 of 7 (85.7%) high school anabolic steroid users were athletes, while 9 of 14 (64.3%) college anabolic steroid users were athletes.

Conclusion

For the most part, the findings of this study were consistent with the literature. The most significant finding in the Ball State study was the percentage of steroid use doubling from high school to college in males (5 to 11), and increasing 50% (2 to 3) in females. Also, the change of the profile of steroid users from high school to college was interesting. In both males and females, a higher percentage of steroid users in college were non athletes, whereas nearly all high school steroid users were athletes. This seems to indicate that these collegiate users are looking for body definition, rather than improved physical performance.

The data also seem to show that the prevalence of anabolic steroid use is comparable in the Ball State study with the other studies performed on adolescents. This may be encouraging, because there doesn't seem to be an increase in steroid use. Hopefully, this study will encourage others to monitor steroid use and compare the results, because little research has been done in the area of adolescent steroid use. The more studies that are performed, the more heightened the public awareness will be concerning the problem. This heightened awareness is basic to looking for solutions to deal with the problem.

Appendix A

Prevalance of Anabolic Steroid Use

1. Sex: M.____. F.____.

2. Age: ____.

3. Did you ever use anabolic steroids in high school?

Y.____. N.____.

4. Were you a competitive athlete (member of a team) in high school?

Y.____. N.____.

5. Have you ever used anabolic steroids in college?

Y.____. N.____.

6. Are you a competitive athlete (member of a team) in college?

Y.____. N.____.

7. How many people do you know that use anabolic steroids?

_____.

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¹Tricker, Ray and David L. Cook. Athletes at Risk: Drugs and Sport. Wm. C. Brown Publishers. 1990. page 54.

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³Wadler, Gary I. and Brian Hainline. Drugs and the Athlete. F.A. Davis Company. 1989. page 65.

⁴Windsor, R.E. and D. Dimitru. "Prevalance of Anabolic Steroid Use by Adolescents". Medicine and Science in Sports and Exercise. October 1989. pages 494-497.

⁵Johnson, Mimi D. et al. "Anabolic Steroid Use by Male Adolescents". Pediatrics. June 1989. pages 921-924.

⁶Buckley, William E. et al. "Estimated Prevalance of Anabolic Steroid Use Among Male High School Seniors". Journal of the American Medical Association. Dec. 16, 1988. pages 3441-3445.

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