

## Research

# Unnecessary roughness: Exploring depression and substance abuse in competition in a sample of African American college athletes?

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**ABSTRACT**

The highly stressful environment created by competition in sports may result in depression among some athletes due, in part, to their uncertainties relating to the ability to perform in competition. To cope with the depression some athletes may also abuse substances. The aim of this research is to explore the relationship between competition, substance abuse as well as depression among a population of male African American college athletes. A purposive sample was used at one academic setting in the United States. Data (N=118) were collected using a survey questionnaire composed of a modified version of the Zung Self-Rating Depression Scale. The surveys were analyzed using single and multiple regression analyses. The findings indicate that a positive and moderate correlation exists between competition and depression as well as between competition and substance abuse among the respondents. The findings also indicate that the two variables of competition and depression may account for a substantial amount of the variance in substance abuse among the respondents. The findings may support the belief that some athletes who focus on the importance of competition may experience symptoms of depression and abuse substances as a means of self-medicating.

**KEYWORDS:** African american; Athlete; Depression; Competition; Roughness.

Sports create a highly competitive environment for athletes that can lead to depression and substance abuse for some individuals. An athlete can experience depression prior to competition based on beliefs of inadequacy.<sup>1</sup> Depression can also develop among athletes after losing a competition, with the loss reinforcing negative self-assumptions.<sup>2</sup> Athletes who abuse substances are more likely to experience competition-related symptoms and may abuse substances as a response to competition anxiety.<sup>3</sup> There has been relatively little research concerning the effects of competition on substance abuse and depression among African Americans.<sup>4</sup>

The link between mood and sports performance is well established, for instance, previous research has found that mood changing prior to competition was based on the athlete's estimate of competition outcome.<sup>1</sup> In general, an athlete who anticipates performing poorly is more likely to experience symptoms of depression prior to a competition, which increases the possibility that poor performance will occur. In this situation, a negative self-schema develops, which reduces the amount of effort the athlete exerts at the time of the competition. At the same time, external factors such as fatigue from overtraining can influence mood, and increase the possibility that the athlete will become depressed. Despite the possibility that athletes can suffer from depression before and after competitions, athletes remain susceptible to the under diagnosis of depression because of the tendency to consider pre-competition problems as physiological rather than psychological.<sup>5</sup>

## INTRODUCTION

Research investigating the behaviors of athletes has determined that substance abuse is common in sports with high performance stakes in competition.<sup>6</sup> Substances commonly abused are tobacco, alcohol, cannabis, and doping agents. Substance abuse is also generally more common among female athletes and particularly in aesthetic sports. Some evidence from prior research also suggests that a correlation exists between substance abuse and depression among athletes. Those athletes who abuse substances are more likely to suffer from depression.<sup>3</sup> The studies examining depression and substance abuse among athletes, however, “have not extensively investigated the moderating effect of substance abuse on depression associated with competition”.<sup>7</sup>

Because of incidents of substance abuse among some prominent athletes, researchers are increasingly examining the substance abuse among elite athletes from diverse ethnicities and social entities. There are, however, relatively limited data concerning the relationship of substance abuse and depression among African Americans that have been collected.<sup>4</sup> Therefore the relationship between competition and depression and competition and the use of substance abuse among African American athletes may not be well understood. Some variation may exist between African Americans and other racial or ethnic groups in their response to competition pressures. The purpose of this study is to explore the relationships between competition, depression, and substance abuse among a population of male college level African American athletes. Therefore it is believed that there are positive correlations between [alternative form  $H_a$ ] the perceived intensity of an upcoming competition and depression and substance abuse among male African American college athletes. The study limits its scope to depression and substance abuse behaviors prior to a competition, with the perceived intensity of the competition as the factor that theoretically induces depression and the use of substances to regulate mood.

The specific problem under investigation is the relationship between substance abuse and depression among elite African-American college athletes. Athletes often use performance-enhancing drugs such as steroids that can cause long-term harm to the body. Athletes may also abuse other substances to cope with depression despite the possibility that these substances could *impair* their performances in competitions. This problem has consequences for elite college athletes because of the potential harm of substance abuse on the body and the ability of the athlete to compete if the abuse occurs for an extended period of time. This is also a concern for colleges and universities that field teams because of the possibility that some of the athletes may abuse drugs. Moreover, the problem is important to college administrators and law enforcement personnel because many of the drugs used by elite athletes to enhance performance or to cope with stress are illegal.

The first relationship that will be studied is between the construct of competition and the construct of substance abuse. This relationship is based on the assumption that competition creates

performance anxiety among elite college athletes. The competition anxiety is related to the abuse of either performance enhancing drugs to improve performance during competition or the abuse of alcohol or other drugs to reduce anxiety. The relationship between competition and substance abuse is related to the problem because it involves examining whether competition is a factor that may lead to substance abuse.

The second relationship that will be studied is between competition and depression. This relationship is based on the assumption that competition creates performance anxiety that can lead to depression among elite athletes if they believe their performance will be below expectations. The relationship is related to the problem because competition can create depression with the athlete abusing substances as a means of coping with the depression.

## METHODS

The researchers will examine the constructs of competition, substance abuse, depression, and elite athletes. The construct of competition is the involvement of a college athlete in a sporting event between teams of different colleges or universities that affects the team's standing in a league.<sup>8</sup> The construct of substance abuse is an individual's use of any of the following substances: alcohol, tobacco products, amphetamines, anabolic steroids, marijuana, cocaine, psychedelics, or any prescription pharmaceutical for which the athlete does not have a prescription.<sup>9</sup> This construct is not based on the frequency of substance use, but rather on the use of any of these substances that could have either a positive or negative effect on an elite athlete's performance. The construct of depression solely involves mood depression, which is a temporary condition that involves a collection of symptoms such as lethargy or sadness.<sup>10</sup> This construct can be distinguished from clinical depression that is a permanent condition. The construct of the elite college athlete refers to individuals whose performances exceed the performance levels of other athletes. As such, the elite athlete receives a benefit unavailable to others such as a financial benefit in the form of a scholarship or higher status among peers.

## Participants

The participants (N=335) consisted of a purposive sample of African-Americans males participating in sports in at a southeastern university. The participants started competition when they were in Pop Warner football or similar programs starting at age 5; therefore, they have been in competition most their lives. As result, it is impossible to differentiate between the beginning of competition and the beginning of substance abuse. The study excluded women athletes to reduce the possibility of gender functioning as a confounding variable. The team rosters provided information concerning the identity of African-American athletes at the university. Every other name on each roster was selected for participation in the study. Each prospective participant received an email explaining the purpose of the study and the survey questionnaire (see Appendix). The participants were

given a one-week period to return the completed survey questionnaire by email. The procedure resulted in a response rate of 70% (n= 118) participants returning completed survey questionnaires. Based on the central limit theorem, the size of the sample population resulted in a confidence level of 7 at a confidence level of 95%.

## PROCEDURE

### Statement of hypotheses

The first hypothesis of the study in its null form is:  $H_1: \mu \neq \mu_0$  (two-sided), no statistically significant correlation exists between competition and substance abuse among elite African-American college athletes. This hypothesis predicts that competition will have no relationship to the incidence of substance abuse among elite African-American college athletes. It is directly related to the problem under investigation because it examines whether a relationship exists between the antecedent variable of competition and substance abuse. The hypothesis tests some of the propositions found in the literature review such as the willingness of elite athletes to use performance enhancing drugs<sup>11</sup> and the possibility that substance abuse among African American athletes may be low.<sup>9</sup>

The second hypothesis of the study in its null form is:  $H_2: \mu \neq \mu_0$  (two-sided), that is, no statistically significant correlation exists between competition and depression among elite African-American college athletes. This hypothesis predicts that competition will not have a relationship with depression among elite African-American athletes. The hypothesis tests whether competition may be associated with a higher incidence of depression among elite athletes. The hypothesis tests the propositions of Adler and Adler (1989) concerning the role of sport for self-aggrandizement among athletes and the threat of self-diminishment that accompanies competition.

The third hypothesis of the study in its null form is:  $H_3: \mu \neq \mu_0$  (two-sided) no statistically significant correlation exists between substance abuse and depression among African-American college athletes. This hypothesis predicts that substance abuse and depression are not related. This hypothesis has a relationship to the problem because it tests whether depression may be a factor related to the abuse of substances, which could therefore moderate any relationship between competition and substance abuse in the study population. The literature has not extensively examined the relationship between depression and substance abuse among athletes, although Bower and Martin (1999) did determine that mood was a factor leading to substance abuse among some athletes.

The study used a non-experimental, cross-sectional correlation method to test for the existence of a statistically significant relationship between competition among African-American college athletes and depression and substance abuse. The independent variable in the study was the athlete's focus on important compe-

tion events. The dependent variables in the study were depression and substance abuse. The theoretical model postulates that the perception of intensity in a competition results in depression in some individuals, with substance abuse as a means to cope with the depression.

### Data collection

The data collection instrument was a survey questionnaire prepared for this study that combined elements of the Zung Self-Rating Depression Scale (ZSRDS) with additional questions measuring perceived intensity of an upcoming competition and substance abuse (see Appendix). The ZSRDS is a standard measure for assessing the existence of depression in individuals but not the severity of the depression.<sup>12</sup> Some adaptation of the questions was necessary for use with the study population. The first question in part 1 is intended to ensure that respondents are African Americans. The remaining questions the first part of the survey questionnaire obtain information about perception of importance of sports competition and substance abuse behaviors among respondents prior to sports competition.

### Analysis

Single and multiple regression analysis were used to test the hypothesis of the study. The data was coded with the answers to Part One question 1 of the survey questionnaire providing information concerning the independent variable. The composite score of questions 2 through 5 were used to code the dependent variable of substance abuse. The composite score of questions 1 through 8 of part two of the survey questionnaire were used to code the dependent variable of depression. The correlation coefficient determined the existence of a correlation while the coefficient of determination determined the strength of the correlation. The alpha level was set at  $p < .05$  for hypothesis testing.

### Reliability and validity

A pilot test was conducted with participants (n=12) that met the criteria for inclusion in the study. Cronbach's alpha was used to assess the reliability of the instrument, which produced a value of .71, which was deemed to be sufficient reliability for the purposes of the study. A panel of three peers was used to establish content validity of the instrument using the content validity ratio.<sup>13</sup> The ratio was greater than zero for all items, suggesting that the instrument had sufficient content validity for use in the study. Construct validity of the ZSRDS has been established by previous research.<sup>14</sup> Content analysis was used to determine the content validity of the revised scale and the instrument as a whole.

## RESULTS

The initial analysis of the data examined the independent relationships between focus on competition and depression and substance abuse. The findings indicate that a positive correlation exists between the relationship of depression and competition, the

	R	R <sup>2</sup>
Importance of game/depression		
Importance of game/substance abuse	.62	.38
Importance of game and depression/ Substance abuse	.56	.32
Substance abuse	.58	.34

**Table 1:** Findings of the Analysis.

reported level of focus on winning important sports competition and depression. The correlation coefficient was  $R = .62$ , which indicates a strong correlation. The coefficient of determination was  $R^2 = .38$ , which indicates that the competition explains approximately 38% of the variance in depression among African-American athletes (Table 1). The findings also indicate that a positive correlation exists between the focus on the importance of competition and substance abuse. The correlation coefficient was  $R = .56$ , which is indicative of a strong correlation. The coefficient of determination was  $R^2 = .32$ , which suggests that the focus on importance of competition accounts for approximately 32% of the variance in substance abuse among African American athletes (Table 1).

The analysis also involved a multiple regression analysis in which the variables of focus on the importance of competition and depression were treated as the independent variable and substance abuse was treated as the dependent variable. The analysis found a statistically significant and moderate correlation among the variables with a correlation coefficient of  $R = .58$ . The coefficient of determination was  $R^2 = .34$  suggesting that these focus on importance of competition and depression accounted for approximately 34% in the variance in substance abuse among African American athletes. Table 1 contains the findings of the regression analyses.

## DISCUSSION

The results of this study appear to support the assumption that a correlation exists between substance abuse and competition along with depression and competition for this sample. Although results may not be generalized to all African-American college athletes, there is support for further study in this area. Moreover, it appears the results also correspond to the sparse professional literature regarding college athletes and competition for all ethnicities. While there is not an abundance of literature in this area, future study is warranted.

## SUMMARY OF THE FINDINGS

The findings for the study provide support for accepting the alternative hypothesis of the study: A positive correlation exists between the perceived intensity of an upcoming competition and depression and substance abuse among male African American college athletes. The findings of the study demonstrate that African American athletes are more likely to engage in substance abuse when they feel performance pressure from an upcoming game they perceive as important. As the athlete's focus on the

importance of the game increases, their feelings of depression and their use of substances tend to increase. The finding that concerns about performance in athletic completion has a statistically significant relationship with depression is similar to the findings of other researchers.<sup>1</sup> Some African-American athletes may develop a negative perception of themselves and their potential for success in a competition that leads to symptoms of depression. The finding of a relationship between the focus on athletic competition and substance abuse is also similar to the findings of other researchers concerning substance abuse among athletes involved in high stakes competitions.<sup>6</sup> African-American athletes who are focused on success in important competitions are more likely to abuse substances.

The findings of the study concerning the combined effect of focus on important competitions and depression on substance abuse have not been previously examined among African-American athletes. The findings suggest that the individual athlete's propensity to respond to the stress of upcoming competition with depression may be a mediating factor in substance abuse. The findings further suggest that the model representing the mechanism leading to substance abuse among African-American athletes involves an initial expectation for performance in competition that fosters anxiety and depression concerning ability to meet expectations among some athletes. The athlete then turns to substances to cope with depression, the use of which can become chronic.

## LIMITATIONS OF THE STUDY

The study is limited by the sampling procedure with the possibility that the athletes at the university are not representative of all African-American athletes. It is also limited because it did not identify the type of sport or whether it is an individual or team-based sport, which can potentially influence depression or substance abuse. The findings of the study may also be limited by the candor of the respondents in answering the questions concerning substance abuse despite assurances of confidentiality. Some respondents may not have revealed the full extent of substance abuse. Another limitation of the study is the use of correlation analysis to test the hypothesis, with a correlation unable to establish a cause and effect relationship among the variables.

## CONCLUSIONS

A correlation exists among African-American athletes competing at the college level between the athletes' focus on the importance of winning and depression and substance abuse. The

findings suggest that the depression plays a mediating role in the relationship between focus on the importance of winning and substance abuse. If an individual athlete has a propensity to depression when faced with anxiety or uncertainty about abilities in an upcoming competition, they are more likely to abuse substances as a means of coping with the depression.

#### CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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## APPENDIX

### APPENDIX SURVEY QUESTIONNAIRE

#### Part 1:

A. My racial/ethnic background is:

African-American \_\_\_\_\_ Hispanic \_\_\_\_\_  
White \_\_\_\_\_ Asian \_\_\_\_\_ Other \_\_\_\_\_

For the following questions, please describe your level of agreement with the statement with 1 indicating you strongly disagree with the statement while 5 indicates you strongly agree with the statement. All information that you provide will be confidential and your identity will not be linked to the information.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. I become very focused on winning important sports competitions	1	2	3	4	5
2. I use tobacco to relax before important sports competitions	1	2	3	4	5
3. I use alcohol to relax before important sports competitions	1	2	3	4	5
4. I use cannabis to relax before important sports competitions	1	2	3	4	5
5. I use other addictive substances to relax before important sports competitions	1	2	3	4	5

#### Part 2:

For the following questions, please describe how much of the time the statement describes how you feel before an important sports competition:

	A little of the time	Some of the time	Good part of the time	Most of the time
1. I feel down-hearted	1	2	3	4
2. Morning is when I feel best	1	2	3	4
3. I have trouble sleeping at night	1	2	3	4
4. I eat less than I used to	1	2	3	4
5. I am more tired than normal	1	2	3	4
6. I feel that I am not useful or needed in the sports program	1	2	3	4
7. I find it difficult to make decisions	1	2	3	4
8. I am restless and cannot keep still	1	2	3	4