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Correlates of doping among athletes in Nigeria

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Abstract

The use of drugs by the majority of Nigerian athletes to improve their performance for personal gain and to relieve discomfort is alarmingly on the rise. This study was conducted to examine the knowledge and attitudes toward doping among Nigerian athletes. At the national camps for wrestling, weightlifting, and athletics held in preparation for the 2019 12th African Games in Morocco, information on demographics, knowledge, and attitudes of usage of performance-enhancing drugs was gathered through the administration of a well-structured questionnaire. 122 respondents were selected using a stratified sample procedure. The study's data were analyzed using SPSS to produce ANOVA and t-test procedures. Findings revealed that the knowledge of athletes in the studied population about performance-enhancing drugs was inadequate. According to the participant's attitude towards doping, the findings revealed a grand mean of 2.68 (SD=1.37) which indicated a negative attitude towards performance-enhancing drugs in sports. Furthermore, the study findings revealed that there was an association between age group and doping knowledge, but no correlation between knowledge and gender. To ensure the reduction in the use of drugs to enhance performance in sports, it was recommended that intentional efforts should be made by the stakeholders to design a doping awareness campaign to educate athletes on the dangers of doping with a guarantee that such a campaign is efficiently implemented.

Keywords: Doping, knowledge, attitudes, performance-enhancing drugs

Introduction

The usage of drugs to improve performance in sports is not a new occurrence in Nigeria. Most athletes utilize a variety of drugs to improve performance for personal gain, reduce discomfort, and combat win-at-all-costs syndromes, which pose a health risk Chiang *et, al.* (2018) [4]. Drug misuse, particularly the use of performance enhancing drugs for muscle building and weight loss in sports, poses a genuine health danger to the users while also putting their careers at risk Reddy *et, al.* (2012) [15]. In 2016, a state-sponsored doping operation involving Russian teams disqualified up to 118 athletes from competing in the 2016 Olympic Games in Rio de Janeiro, Roan *et, al.* (2016) [18]. Doping, defined as the use of performance-enhancing pharmaceuticals, is a threat to modern competitive sports in the twenty-first century. Regardless of the type of sport, this tendency among athletes is a stumbling block to the accomplishment of honesty, free, fairness, modesty, unity, and authentic sports competitions as spelled forth by the world sports policy World Anti-doping Agency, (2015) [16].

Doping is defined by the International Olympic Committee (IOC) (2010) as an athlete's deliberate or involuntary usage of a forbidden drug. Doping is also defined by the World Anti-Doping Agency [WADA] (2015) [16] as the use of illegal substances such as anabolic steroids, cocaine, cigarettes, and other substances that are potentially damaging to athletes' health while also increasing performance. The use of such substances by athletes is unethical and is considered a doping offense. Furthermore, the use and abuse of such medications represent a considerable risk to the athletes' health, safety, and well-being. As a result, doping is severely outlawed in sports. The presence of prohibited substances or their metabolites, failure to submit oneself for sample collection following notification, and other doping-related offenses were noted by World Anti-doping Agency, (2015) [16]. Many athletes continue to take these harmful and banned substances despite the ethical concerns and a variety of health dangers (Daniel, 2012) [6].

Doping incidences among young up-and-coming athletes in Nigeria have been recorded in large numbers. According to a study conducted by Daniel (2012) [6] in Lagos State, Nigeria, 57.2 percent of athletes drank alcohol to improve their performance. Ephedrine was also revealed to be utilized by 8.1 percent of Nigerian Elite Athletes (Adegboyega, 2014) [1]. As athletes advance in their sporting careers, they have a persistent desire to improve and win, resulting in a high rate of doping. It is therefore possible that young athletes will utilize doping agents prior to their peak years. The majority of athletes self-medicate without consulting with medical specialists. This is especially prevalent among athletes who have some medical knowledge Chiang *et al.*, (2018) [4]. As a result, the knowledge, attitude, and practice of doping among Nigerian athletes will be evaluated in this study. As a result, the aim of this study is to assess athletes' doping knowledge, and attitudes, in Nigeria. The objectives were to assess the knowledge level of Nigerian athletes on types of performance-enhancing drugs in sports and to determine their attitude toward performance-enhancing drugs in sports.

Method

Study Population

The research was targeted at the athletes preparing for the 12th African Games 2019 National camps in Nigeria. The sports events include wrestling, weightlifting, and athletics. This was because these are some of the 10 sports in Nigeria where doping is highly reported.

Sample Size and Sampling Techniques

A convenient Sampling method was used for this study. Rendering to the Nigerian National Camps of Wrestling, weightlifting, and Athletics for the preparation of the 12th African Games Morocco 2019, there were 176 athletes and officials (e Table 1). Having determined the sampling frame, the Yamane (167) formula was used to determine the sample size thus size $e =$ as error margin (0.05 or 5 percent). The sample size is therefore 122. In each of the sports, the sample size was proportional to the population of each sport. The population of each sport and the sample size is shown in Table 1. The specific gender and age composition of the sample was determined using a Convenient Sampling Method.

Table 1: Sample Size by Camps

Sport	Population	Sample Size
Wrestling	67	47
Weightlifting	51	35
Athletics	58	40
Total	176	122

Source: Author's compilation (2019)

Data Collection and Analysis

During the reconnaissance survey, the researcher visited all of the national training camps to address athletes through the technical directors and went over the research statements with them, outlining the goal and scope of the study. The data was collected using a well-structured questionnaire after respondents understood and consented to participate in the study. Statistical Package for Social Science (SPSS) version 23 and Microsoft Excel was used for data analysis. Frequency and percentages were used to describe the demographic characteristics of the respondents. One-way

Analysis of variance (ANOVA) was used to compare knowledge and attitude mean scores of the different age groups. The technique was chosen because it allows researchers to compare the amounts of one component in more than two groups Nesselrode & Grimm, (2019) [12].

Results

Demographic Characteristics of the Respondents

Gender, age, and religion are among the socioeconomic variables of the respondents analyzed in this study. The gender of the respondents is shown in Table 2. Data from the study showed that 91% of the respondents were males whereas 9% were females. In other words, the majority of the study's athletes were men. One of the most essential aspects of doping activity in Nigeria is recognizing the age group of athletes. The knowledge, attitude, and practice of doping are determined by an athlete's age class. The age distribution of respondents is also depicted in Table 2. Findings revealed that respondents between the ages of 25 years and 28 years account for 56 (45%) of the total, while those aged 29 years and above account for 45 (35%). Only 5 responders (or 4% of the total) are between the ages of 13 years and 16 years. Data collected shows that 77% of the athletes are Christians, 21% are Muslims and 2% are traditional worshippers as shown in Table 2.

Table 2: Demographic Characteristics of Respondents

Variable	Frequency	Percentage
Gender of Respondents		
Male	111	91
Female	11	9
Total	122	100.0
Age of respondents		
13-16	5	4
17-20	8	7
21-24	8	7
25-28	56	45
29 and above	45	35
Total	122	100.0
Religion		
Traditional Religion	2	2
Islam	26	21
Christianity	94	77
Total	122	100.0

Source: Field Survey, 2019

The Knowledge Level of Nigerian Athletes on Types of Performance-Enhancing Drugs in Sports

The responses of the respondents on the knowledge level of performance-enhancing drugs used in sports acquired through the questionnaire survey were used to address this objective. The drugs that were described in this study were those that the researcher had learned about through prior research and informally conducted interviews with athletes. The respondents were asked to indicate their level of agreement with their knowledge of the identified drugs. Research data on the knowledge of types of performance-enhancing drugs were rated through responses on 18 questionnaire items/statements on a 5-point Likert rating format of (5= strongly agree, 4 = agree somewhat, 3 = uncertain, 2 = disagree somewhat, 1= strongly disagree). Scores ranged from 18 to 90. Mean and Standard deviation scores of knowledge of performance-enhancing drugs in sports are given in Table 3. All mean of 3.00 and above are

considered “Agreed” while those < 3.00 are considered “Disagreed”.

Table 3: Responses on the knowledge level of performance-enhancing drugs among athletes in Wrestling, Athletics, and Weightlifting Federations (N=122)

No	Items	Mean	S. D	Decision
1	Anabolic steroids	3.10	1.153	Agreed
2	Stanazolol	2.79	1.166	Disagreed
3	Diamabol	2.64	1.005	Disagreed
4	Nandrolone	2.86	1.007	Disagreed
5	Heroin	2.96	1.249	Disagreed
6	Morphine	2.73	1.150	Disagreed
7	Methadone	3.00	1.157	Agreed
8	Opium	2.66	1.058	Disagreed
9	Amphetamines	2.89	1.112	Disagreed
10	Ephedrine	2.82	1.171	Disagreed
11	Cocaine	2.93	1.386	Disagreed
12	Caffeine	2.91	1.178	Disagreed
13	Phenobarbital	3.01	1.023	Agreed
14	Barbiturates	2.97	1.044	Disagreed
15	Narcotic Analgesics	3.12	1.072	Agreed
16	Alcohol	3.31	1.121	Agreed
17	Tobacco	3.30	1.127	Agreed
18	Marijuana	3.11	1.278	Agreed
	Grand Mean	2.95	1.13	Disagreed

Scoring: 1.0 = strongly disagree, 2.0 = disagree somewhat, 3.0 = uncertain, 4.0 = agree somewhat, 5.0 = strongly agree, midpoint =3, Source: Field Survey, 2019

The results in Table 4.1 shows that the grand mean of 2.95 with a standard deviation of 1.13 is less than the accepted mean cut-off point of 3.00, revealing that the athletes are, to a certain extent, less knowledgeable on some types of performance-enhancing drugs used in sports circle. Item-by-item reveals that while they are knowledgeable on some drugs, they are less knowledgeable on others.

Table 5: Responses on the attitudes of athletes on performance-enhancing drugs in sports among athletes in Wrestling, Athletics, and Weightlifting

No	Items	Mean	S. D	Decision
1	I am aware of substances I cannot use in competition	3.27	1.286	Agreed
2	I am aware of substances I cannot use out of competition	2.95	1.205	Disagreed
3	Most athletes in the competition are not using banned substances	2.80	1.090	Disagreed
4	Doping is necessary to achieve the best results	2.72	1.344	Disagreed
5	I support government interventions in anti-doping efforts through the establishment of anti-doping laws	3.47	1.544	Agreed
6	Doping gets too much attention from a sports organization	2.74	1.465	Disagreed
7	My performance would be improved by banned substances	2.41	1.310	Disagreed
8	I feel pressured to use banned substances	2.57	1.336	Disagreed
9	Doping is not worth the risk	2.69	1.478	Disagreed
10	When using a medication I am concerned about the possibility of doping violations	2.62	1.326	Disagreed
11	Recreational drug use is prevalent in high-performance athletes	2.59	1.413	Disagreed
12	I am aware of performance-enhancing drugs	2.51	1.445	Disagreed
13	I use substances that will enhance my ability to cope with the pain	2.60	1.552	Disagreed
14	I use any substance that would improve my endurance	2.50	1.450	Disagreed
15	I use any substance that will increase the amount of training I can undergo	2.39	1.429	Disagreed
16	I use any substance that will enhance my concentration	2.35	1.366	Disagreed
17	If I could use a drug that would not be detected by doping control and win a gold medal regardless of the side effects then I would.	2.47	1.461	Disagreed
	Grand Mean	2.68	1.37	Disagreed

Source: Field Survey, 2019

Hypothesis I (Age and Knowledge of Doping)

Table 4 reveals a statistically significant difference in the age bracket groups of athletes $F(4,117) = 5.028, P=.001$ (eta squared =0.147 as large effect size). The null hypothesis stated earlier was - There is a significant difference among athletes on knowledge of doping in sports based on their age bracket groups. The One-way ANOVA was conducted to determine whether the age bracket of athletes does not differ significantly as it relates to their knowledge of doping in sports in Nigeria. With these results, the second null hypothesis is hereby supported and thus not rejected for the alternative. Further proving requires the use of post hoc pairwise comparison.

Table 4: Response on ANOVA on age bracket difference of athletes' knowledge of doping in sports in Nigeria

Source of Variation	Some of Square	Df	Mean squares	F	P	Remark
Between Groups	3708.753	4	927.188	5.028	.001*	S
Within Groups	21574.067	117	184.384			
Total	25282.820	121				

* $p < .05$

Source: Field Survey, 2019

The Attitude of Athletes on Performance-Enhancing Drugs in Sports

The question was scored using a 5-point Likert scale with replies on 18 questionnaire items/statements (5=strongly agree, 4=agree slightly, 3=uncertain, 2=disagree somewhat, 1=strongly disagree). The data presented in Table 5 is in relation to the attitudes of athletes toward performance-enhancing drugs in sports. The analysis reveals a grand mean of 2.68 (SD=1.37) which indicates that the responses of the athletes are generally below the cut-off-point of 3.00. Therefore, all means of 3.00 and above are considered Agreed while those <3.00 are considered disagree.

Hypothesis II (Age and attitude of doping)

The instrumental percentage of the model was predicted at 0.05%. The results of the ANOVA analysis in Table 6 revealed that there was no statistically significant difference among the age groups of the athletes, $F(4, 117) = .94, P = .446$. The hypothesis was thus: There is no significant difference among athletes based on their age groups and their attitude toward performance-enhancing drugs in sports. In testing this hypothesis, the independent variable is the age groups of athletes classified into five while the dependent variable is their attitude towards performance-enhancing drugs in sports. One-way ANOVA was conducted to explore whether differences exist among age groups of athletes as it relates to their attitudes on performance-enhancing drugs in sports

Table 6: Model Summary ANOVA

Source of Variance	Sum of square	Df	Mean square	F	p-value	Remark
Between Groups	871.19	4	217.79	.94	.446	NS
Within Groups	27250.66	117	232.91			
Total	28121.84	121				

Dependent Variable: Attitude, Y

Predictors: (Constant), X

Source: Field Survey, 2019

This implies that there is no significant difference in the age groups of the athletes as it relates to their attitudes toward performance-enhancing drugs in sports in this study. This null hypothesis is hereby supported and thus sustained.

Discussion of findings

Recent studies on athlete doping, according to Petróczi, (2007) [14], the sex-doping association has been one of the most robust topics of research. Gender is likely to be one of the most critical elements in determining why people dope in sports and the danger of being encouraged to dope by others in a community. Generally speaking, men and women dope in sports in different ways in most civilizations. From fighting for "gender equity in sport," to employing "sport for gender equity and personal development," there has been a dramatic shift (Folusayo *et al.* 2020) [7]. Data from the study showed that 91% of the respondents were males whereas 9% were females. As shown in Table 1. The gender gap in sports, although closing, remains, due to biological differences affecting performance, but it is also influenced by reduced opportunity and sociopolitical factors that influence full female participation across a range of sports around the world (Laura, 2013) [19].

Data from the study revealed that 45% of the respondents are between the ages of 25 years and 28 years which is similar to other studies conducted by Daniel, (2012) [6] giving an age range of 21 years to 30 years with 43% as predominant in his study. While those aged 29 years and above account for 35%. As a result, it is safe to assume that 80% of the responders are over the age of 25 years. Only 5 responders (or 4% of the total) are between the ages of 13 years and 16 years. This finding is also consistent with that of Kiani and Moghaddam, (2019) [9], who conducted research in Kermanshah province, Iran. The study discovered that the highest percentage of respondents is between the ages of 20 and 30, at 57.8%, while the lowest percentage is over 40 years, with 4.4%. The study revealed that 68% of respondents are single, which is similar to other

studies, stating that singlehood gives some level of freedom to participate in various sporting activities, reduced responsibilities from spouse and wards and children Patti, (2011) [13].

On multiple occasions, religiousness and spirituality have been proven to be effective therapies against substance misuse and usage. Zenic *et al.* (2011) [17]. Table 1 shows the distribution of respondents based on their religion. It shows that 77% of the athletes are Christians, 21% are Muslims and 2% are traditional worshippers. In this research, the majority of the respondents are Christians which may be attributed to the type of sports the athletes participate in. According to Coakley (2007) [5], religion is a socially shared set of beliefs and rituals that people use to transcend the material world and give meaning to important aspects of their lives. Religious beliefs and rituals are unique because people connect them with a sacred and supernatural realm and accept this connection on faith, which is the foundation for all religions and religious beliefs. Religion is further defined as a relation to Human being which they regard as holy, sacred, spiritual, and divine. It is commonly regarded as consisting of a person's relation to God or to gods or spirits. As Aitken, (1992) [2] coined the phrase, "Born-Again sport" is quite prevalent in various levels of sport, where numerous Born-Again athletes can be found in most Christian denominations throughout the World.

The results in Table 3 show that the grand mean of 2.95 with a standard deviation of 1.13 is less than the accepted mean cut-off point of 3.00, revealing that the athletes are, to a certain extent, less knowledgeable on some types of performance-enhancing drugs used in sports circle. Item-by-item reveals that while they are knowledgeable on some drugs, they are less knowledgeable on others. It could be seen, in Table 3, that out of 18 performance-enhancing drugs identified in this study, athletes are knowledgeable on seven (7) of the listed performing-enhancing drugs, which include, Anabolic steroids, Methadone, Phenobarbital, Narcotics analgesics, Alcohol, Tobacco, and Marijuana, While they are less knowledgeable on the remaining eleven (11) drugs on Table 3. Therefore, athletes had poor knowledge of performing enhancing drugs in sports. This finding is similar to Macellina, *et al.* (2018) [20].

As an outcome, it is believed that knowing about doping will influence athletes' actions and behaviors toward doping, which can be influenced by peer, economic, and modest pressure. The second goal was to determine how respondents felt about doping practices. This study revealed that the athletes only agreed on two only statements 1 and 5 in Table 5, while disagreed with the other 15 statements. As a result, it is reasonable to conclude that athletes have a negative attitude toward performance-enhancing drugs in sports. The study is substantially identical to Daniel, (2012) [6], in which 55.6% of respondents disagree with such an attitude. The finding also corroborates with Cheta, (2014) [21]; Lazarus, (2015) [11].

Conclusion

According to the findings, Nigerian athletes have insufficient awareness of most doping medications, with minor variations on specific doping difficulties. Athletes were shown to have a negative attitude toward doping procedures when their attitudes were assessed. This was shown in their vehement opposition to the practice. The prevalence of doping in the country has been determined to

be extremely low. Additionally, more advocacies should be done to secure the strict adoption of a comprehensive sports education program in schools, where doping knowledge can be emphasized. As a result, doping prevention programs for amateur athletes might be built on this foundation.

Recommendations

Based on the findings, the following recommendations were made

1. The study's findings revealed that athletes in Nigeria have average to low knowledge of doping issues. As a result, it is strongly recommended that the government, in collaboration with key sports federations, implement a doping education program and ensure that it is well-managed. This will assist athletes in making better-educated judgments when faced with doping situations.
2. To stop the use of doping in sports, the Federal Government should establish an efficient interdisciplinary network through the Ministry of Sport, the national sports commission, and other pertinent sports bodies.

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