

## Research Article

# Potential Athletes Perceptions of Orthodox and Traditional Botanical Derivatives as Ergogenic Drugs for Sports Performance: Implications for Sports Administration in Nigeria

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## Abstract

The biochemical/pharmacologic agents and nutrients or properties of the botanical derivatives (drugs) and the detrimental nature of their use, is fast becoming a bane that tend to destroy the real essence or meaning of sports management and competition of today. Hence this study was set to investigate the management implications of the perceptions of Nigerian elite Athletes on orthodox/traditional botanical derivatives as ergogenic drugs for sports performance. The population for the research therefore comprised of all the university athletes who participated in the 2012. West African University Games (WAUG) held on March 23rd to April 4th 2012 in university of Ilorin Nigeria. A sample of 286 (174 males and 112 females) drawn from 8 sports areas participated in the study. They were selected through purposive sampling technique. The main instrument for data collection was a validated questionnaire fashioned out from 6 research questions, whose reliability was 0.86. The response options to the questionnaire adopted a modified likert format. Data collected were analyzed using frequency counts and percentages. The research findings revealed that even though the athletes know the detrimental health/social and psychological effects of the orthodox botanic ergogenic derived drugs, they tend to resort to the use of traditional botanic ergogenics derived from plants which they feel might be difficult to detect through laboratory tests. Recommendations were made.

**Keywords:** Chemical substances; Potential elite athletes; Drug use; Derivatives productivity of workers; Ergogenic drugs ergogenic aids; Performance enhancing food/drugs

## Introduction

From the early times, human beings learned to use drugs, which were derivatives from plants, to cure diseases treat various types of ailments, fight infections and reduce pains. Moreover some chemical substances from plants were known to have been used in connection with sports in ancient times, as pre-agricultural humans ate naturally occurring plant foods, especially for carbohydrates which chiefly came from fruits and vegetables in the view of [1,2], drug foods have been linked historically to be in use to enhance the productivity of workers, and they also have been used in the expansion of nation states in every area of the world. Africans including Nigerians knew many years ago of the existence of effective substances contained in plants leaves, back of trees, fruits, flowers and roots for effective use

when strength, endurance, and courage were needed for travelling hunting, fighting or wrestling [3,4].

Historically, Charmis of Sparta, a victor in the 668 BC Olympic Games, was reported to have trained on a diet consisting of fried fig, believing that the extra sugar in the fruit helped his performance [5,6]. In ancient Rome, the Romans gave their racing horses a mixture of honey and, water to increase their horse's speed [4]. Moreover, observed that some drugs are legitimately used to treat and or prevent the spread (or in some cases the occurrence) of some ailments that may interfere with athletes health and athletic performance [7].

However, in contemporary times probably due to the psychophysiological effects of some drugs their illegal use and even abuse have gradually become ergogenic aids to enhance sports performances, delay the onset of fatigue or promote quick recovery from fatigue, among others. Ergogenic aids are performance - enhancing food or non-food substances, including various devices and procedures used by athletes to improve or thought to improve performances [3,4]. It should also be noted that most drugs in use as ergogenic drugs are derivatives of plants (botanical derivatives) which appear or come in different types and forms. While world leaders in sports are doing everything possible to discourage the practice of ergogenic aids in sports, the incidence appears to be on the increase as years roll by [8]. This is predicated on the premise of the over-riding urge by athletes and coaches to win sports competitions at all cost [9].

Furthermore, Agwubuike and Nwajie [4], reported that in contemporary societies, champion athletes occupy exalted or

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esteemed positions within their societies and in some countries, the financial and materials rewards are not only attractive but also tempting. Thus the indulgence of athletes in the use of ergogenic drugs to boost their performances.

Onifade and Adeniran [10] indicated that the impetus for the research on drugs in sports is derived from the need to save people, especially Nigerian youths from the health implications/dangers inherent in the use of ergogenic drugs. There is however, dearth of research efforts specifically on traditional botanical derivatives as ergogenic drugs in sports in Nigeria [11,12]. It is on this backdrop that the present study attempts to fill-in the gap by investigating on the management and implications of the perception of Nigerian potential Elite Athletes on orthodox and traditional Botanical Derivatives as ergogenic drugs for sports performance.

### Research questions

The following research questions were raised to guide the study.

1. Are the athletes knowledgeable of the commonly used orthodox and traditional botanical – derived ergogenic drugs in sports?
2. What are the sources/agents of the athletes knowledge of the commonly used orthodox and traditional botanical derivatives as ergogenic drugs in sports?
3. What is the athletes' level of use of the common orthodox and traditional botanical derivatives as ergogenic drugs in sports?
4. What factors influence athletes to use orthodox and traditional derivatives as ergogenic drugs in sports?
5. Are the athletes aware of the implications/consequences of using orthodox and traditional botanical derivatives as ergogenic drug in sports?
6. Do the athletes patronize orthodox botanical-derived ergogenic drugs more than the traditional types in sports?

## Materials and Methods

### Respondents

The population for this study comprised all athletes who participated in the 2012 West African University Games (WAUG) held on March 23<sup>rd</sup> to April 4<sup>th</sup> 2012 in University of Ilorin Nigeria. A sample of 286 (174 males and 112 females) drawn from 8 sports areas participated in the study. They were selected through purposive sampling technique. Their mean ages were 24.8 for males and 23.6 for the females.

### Instrument

The main instrument for data collection was a validated questionnaire designed by the researchers whose reliability was 0.86. The instrument was pilot - tested with the athletes of University of Benin, Nigeria and discrepancies were re-analyzed and recorded. The final questionnaire had five sections, A - E. section "A" was on the respondents' biodata while section "B" dealt with their level of use of botanical derivatives of drugs as ergogenic aids. The botanical derivatives that have similar effects on the central nervous system were grouped together, such as kolanuts, tea and coffee were grouped together and coded "Caffeines".

Beverages that contained ethanol, either distilled or undistilled, were classified as "alcohol". The response options for sections (B)

ranged from never used to used daily sections (C - E) were on sources, influencing factors and implications (effects) of the drugs ergogenics, respectively. The response options adopted a modified likert format ranging from not aware to highly aware.

### Data analysis

Data collected were analyzed using frequency counts and percentages.

## Results

The results are presented in Tables 1-4.

Table 1 which dealt with athletes level of knowledge about commonly used botanical derived ergogenic drugs in sports (N=286) revealed that majority of the athletes are aware of the existence of the orthodox performance - enhancing drugs, such as marijuana 68.5%; Anabolic steroids 73.8%; Caffeine 60.1%; however some equally claimed ignorant of the existence of drugs like LSD 73.4%; Heroin 67.5%; Smokless Stabacco 73.4%. Comparatively the research revealed that majority of the athletes is aware of the existence of the listed orthodox performance - enhancing drugs. On the issue of knowledge of the traditional botanical derived ergogenic drugs as sports performance enhancing, Table 1 revealed that the athletes were also very much aware of their existence as depicted in their responses which ranged from 54.8% for (folk medicine) to 75.9 (for perfumery types of botanical derived ergogenic drugs).

**Table 1:** Athletes level of knowledge about commonly used botanical - derived ergogenic drugs in sports (N=286).

Drugs (Orthodox)	Knowledgeability			
	Yes	%	No	%
Marijuana/Canabis/indian hemp	196	68.5	90	31.5
Vitamin Supplements Omega H <sub>3</sub> , Vitamin B Complex	123	43	163	57
Anabolic Steroids	211	73.8	75	26.2
LSD	76	26.6	210	73.4
Alcohol	175	61.2	111	38.8
Heroin	93	32.5	193	67.5
Caffeine	172	60.1	114	39.9
Smokeless Tobacco	76	26.6	210	73.4
Cigarettes	102	63.7	104	36.3
Concoctions	174	60.9	112	39.4
Chewing medical (plants, seeks, roots, back of trees)	198	69.2	88	30.8
Vegetable drugs	176	61.5	110	38.5
Folk medicine (eg seacial type of oil/cream to be rubbed on hand/body/face)	157	54.8	129	45.2
Alcohol Beverages	196	68.5	90	31.5
Perfumery	217	75.9	69	24.1
Medicine applied by incisions on the skin	195	68.2	91	31.8
Spiced food/diet	281	98.2	5	1.7

Table 2 indicated that majority of the athletes had never used most of the botanical derived ergogenic drugs especially the orthodox ones. With the exception of vitamins (Omega-H3), Alcohol and caffeine, the table depicted that athletes had never used the orthodox before. However on the issue of traditional botanical derived Ergogenic Drugs, the table revealed that athletes have remarkable inclination towards their usage. Considering the athletes responses of "never used" it is only the "folk medicine type" that athletes are not yet very much into their usage (with 68.8%). Whereas their responses for used occasionally" and "used often" is a clear indication that athletes are steadily being initiated towards their usage. The traditional botanical derived ergogenic drug of "chewing medicinal plants", had the highest percentage response of "used often" 24.8%; followed by "vegetable drugs" 19.2%; "alcohol beverages", 7.8%; "spiced food diet", 16.7%;

“perfumery”, 12.9%; “medicine applied” as incisions on skin”, had 11.8% and “concoctions”, had 7.3% responses.

**Table 2:** Analysis of Athletes level of use of Botanical Derived Ergogenic Drugs (N=286).

Drugs (Orthodox)	Level of Useage							
	Never % Used	Usef % Before	Used % Sometimes	Used % Often				
Marijuana	247	86.3	18	6.2	14	4.8	7	2.4
Vitamins Omega H <sub>3</sub> Vitamin B Complex	19	6.6	11	3.8	181	63.2	75	26.2
Anabolic Steroids	228	83.2	37	12.9	7	2.4	4	1.3
LSD	252	88.1	26	9	6	2	3	1
Alcohol	4	1.3	29	10.1	196	68.5	57	19.9
Heroin	248	86.7	14	4.8	17	5.9	7	2.6
Caffeine	14	4.8	104	36.3	111	38.8	57	19.9
Smokdless Tobacco	233	81.4	18	6.2	25	8.7	10	3.4
Cigarettes	198	69.2	47	16.4	19	6.6	22	7.6
<b>Traditional:</b>								
Concoctions	101	35.3	92	32.1	72	25.1	21	7.3
Chewing medicinal Plants	98	34.2	68	23.7	49	17.1	71	24.8
Vegetable drugs	82	28.6	98	34.2	51	17.8	55	19.2
Folk Medicine e.g. special type oil cream for rubbing	197	68.8	70	24.4	9	3.1	10	3.4
Alcohol beverages	47	16.4	179	62.5	9	3.3	51	17.8
Perfumery	111	38.8	74	25.8	64	22.3	37	12.9
Medicine applied as incisions on skin	68	23.7	112	39.1	72	25.1	34	11.8
Spiced food diet	76	26.5	102	35.6	60	20.9	48	16.7

Table 3 potraed the percentage analysis of factors that influenced the athletes level of use of botanic derived ergogenic drugs, which revealed that the most applicable influencing factor was to serve “as supplement to poor conditioning (training). While the most not applicable influencing factor was “parents support. This means that majority of the athletes parents do not approve of their use of botanic derived ergogenic drugs to boost their sports performance, even though from the same result of the research it was shown that athletes indulge in the use of botanic derived ergogenic drugs in order to satisfy pressures from coaches, parents and friends” (77.2% or 221) of the respondents.

**Table 3:** Percentage Analysis of Factors Influencing the Athletes level of use of Botanical Derived Ergogenic Drugs (N=286).

Influencing Factors	Not Applicable	%	Applicable	%	Mostly applied	%
Interest in sports	15	5.4	211	73.7	60	20.9
Dependence on botanical ergogenic drugs	196	68.5	69	24.1	21	7.4
To complement poor Facilities	9	3.1	203	70.9	74	25.8
Parents supports	234	81.8	32	11.1	20	7.1
As supplement to poor training/ coaching	3	1	214	74.8	69	24.1
As a supplement to poor conditioning	11	3.8	239	83.5	36	12.7
For good motivation/ guest for reward	17	5.9	187	65.3	82	28.8
To satisfy pressures from coaches, parents friends	25	8.9	221	77.2	40	13.9

Table 4 showed the analysis of athletes level of awareness of the implications and effects of the use of botanic - derived ergogenic drugs to enhance sports performance, which depicted that majority of the athletes are not aware of the detrimental health implications of their use of traditional “botanic - derived ergogenic drugs 89.8% (257); the same goes for the damaging psychological consequences 74.8% (214)

and the negative social effects 73.7% (211) of the respondents. The additional oral interview conducted on the same athletes regarding why they tend to be encouraged to use the traditional botanic derived ergogenic drugs, showed that they believed that it was only the orthodox botanic derived ergogenic drugs eg. LSD, heroin, anabolic steroids etc that could be dictated through laboratory tests.

**Table 4:** Analysis of Athletes level of Awareness of the Implications/Effects of the use of botanic derivatives as ergogenic drugs (N=286).

Implications	Level of awareness					
	Medical/Health: eg	Not Aware	%	Aware	%	Highly Aware
Damaging effects on body organs/ systems	257	89.8	18	6.2	11	3.8
Ethical: e.g. Gaming performance/ competitive advantage through artificial rather than nature/ ability/means	9	3.1	41	14.3	236	82.5
Social e.g. Banning of users(droppers) results to social stigma/shame	211	73.7	45	15.7	30	10.4
Financial: e.g. Waste of money to provide drugs rather than use cheap natural ability	3	1	80	27.9	203	70.9
Psychological: e.g. Detection of users results to banning which brings disgrace and lowered reputation.	214	74.8	12	4.1	60	20.9

### Discussion

The findings of this research revealed that majority of the athletes know about the commonly used orthodox/traditional botanic derived ergogenic drugs as shown in Table 1. Furthermore the study depicted that greater percentage of the athletes have never used the orthodox botanic ergogenic derived drugs whereas evidence show that many of the athletes are now resorting to traditional botanic ergogenic derived drugs. Table 3 which portrayed the percentage analysis of factors that influence the athlete’s level of use of botanic derived ergogenic drugs showed that the most applicable influencing factor was to serve as supplement to poor conditioning (training). While the most “not applicable” influencing factor was, “parents support”, even though the athletes indulge in the act to satisfy pressures from coaches, parents and friends. Finally on the issue of athletes awareness of the detrimental implications of the use of these botanic derived ergogenic drugs, Table 4 revealed that majority of the athletes were not aware of the health/social and psychological implications of the usage.

The result of this research tends to be in agreement with Jankowrak and Bradbird (2006) [11], who pointed out that although drug foods may be useful for coping with physical effort or mental fatigue, they tend to create physical and psychological dependences that may bring negative health consequences. These drug foods termed pharmacologic agents that alter cortical stimulation, resulting in the modification of mental activity high sports performance, prolongation of athletes work capacity or efficiency, should be avoided due to their damaging after effects.

### Conclusion

There tend to be a new development by athletes venturing into yet another area of use of traditional botanic derived ergogenic drugs to enhance their performance in sports, a venture that may be said to be purely their own (athletes) volition to satisfy their coaches/friends and prevents. Majority of the athletes agreed that they indulge in their use to argument poor conditioning (training).

## Recommendation

1. It is hereby recommended that the government should provide adequate sports, facilities in all the universities in the country, at least one standard stadium per university, with international standard training facilities.
2. Universities should recruit at least 3 coaches in each sports area for all the universities, to enable them cater adequately in the training of available potential athletes.
3. Seminars/workshops need to be organized to sensitize the university athletes on the inherent dangers in the use of any form of substance that enhances sports performance.
4. More researches need to be conducted in this area to portray identify the extent to which this new trend have damaged the nation's future in sports.

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