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Assessment of the Factors Responsible For the Use of Illicit Drugs by Medical Students in Sports in a Tertiary Institution in Delta State, Nigeria

[1*]NWOGUEZE, BC; [2]ANACHUNA, KK; [3]NNAMA, TN; [4]EKE, CN; [5]OGBUTOR UG; [6]OLOWE, GT; [7]OGINI, WO

[1]*Department of Human Physiology, College of Health Sciences, Evangel University, Akaeze, Ebonyi State Nigeria;*
[2,6]*Department of Human Physiology, Faculty of Basic Medical Sciences, Delta State University, Abraka, Nigeria;*
[3]*Department of Anatomy, College of Health Sciences, Evangel University, Akaeze, Ebonyi State Nigeria;*
[4]*Department of Physiology, Faculty of Basic Medical Sciences, Nnamdi Azikiwe University Awka, Anambra State, Nigeria;*
[5]*Department of Physiotherapy, Federal Medical Centre Asaba, Delta State Nigeria;*
[7]*Department of Sociology, Faculty of Social Science, Delta State University, Abraka, Nigeria*

**Corresponding Author: Email: bukasono123@gmail.com; Tel: 08064062111*

ABSTRACT: The use of illicit drugs in recent times in modern sport has become an issue of growing concern. This study assessed the factors responsible for the use of illicit drugs by medical students in sports in Delta State University Abraka The target population included five departments in the Faculty of Basic Medical Sciences of Delta State University Abraka. A cross-sectional survey design was conducted among 1,436 medical student athletes of the College of Health Sciences of Delta State University Abraka and random sampling technique was used to select a sample size of 143 respondents. A researcher-made confidential questionnaire was the instrument used for the collection of data. A coefficient index score (r) of 0.78 was obtained which ascertained the internal consistency of the instrument was reliable. A total of 120 questionnaires were successfully retrieved and used for data analysis. Mean score and Pearson Product Moment Correlation were adopted as statistical tools for analyzing the obtained data. There was significant ($p<0.05$) relationship between the age of medical students and their knowledge of illicit drugs used in sports, however, there was no significant ($p>0.05$) relationship between the gender of the students and their knowledge of illicit drugs used in sports. Similarly, there was no significant ($p>0.05$) relationship between type of school of medical students and knowledge of illicit drugs used in sports. Findings from the study further equally revealed that there was no significant ($p>0.05$) relationship between parental background and medical students' knowledge of use of illicit drugs in sports. Based on the findings of this study, it is obvious age was supported to determine the use of illicit drugs in sports by medical in sports, hence, the need for stringent policies to be censored especially towards the age requirement for medical student participation while adopting adequate measures to curtail the use of illicit drug among medical students.

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Illicit drug use or drug abuse in sporting events is a public health problem attracting global concern. In Nigeria, the use of drugs in sports is not a common phenomenon only in modern times. This prevalence of illicit drug usage among medical students in sporting activities is turning a major issue which is undermining the interest in sports. The university experience is special as it gives the undergraduate students the chances to socialize and associate with gathering of friends without parental control or interference (Alfred *et al*., 2007). It likewise speaks to the apparent last time of opportunity the undergraduate student has before assuming the obligations of adulthood. This makes them increasingly helpless against attempts of illicit drug use in sports (Walsh 1992). Illicit drugs also referred to as ergogenic substances are taken by athletes to increase their lean muscle mass, strength, oxygen depth and capacity as well as energy and decreased recovery time after exertion towards enhancing optimum performance. Although, sports administrators are doing a lot to discourage the practice, yet the incidence appears to be on the increase (Kate, 2013). Illicit drugs often abused in sports includes; amphetamines, cocaine, tobacco, lysergic acid diethylamide [LSD], stimulants, depressants and hallucinogens which when used for non-medical purposes illicit behavior (Knots, 2000). According to Harcourt *et al*., (2012) illegal drugs could also include; inhalants, cannabis, hallucinogens [LSD, Magic Mushrooms], pharmaceutical drugs such as steroids and other doping substances and tranquillizers which acts as pain-killers. Illicit drug use obviously seems to have become a prominent social problem in Nigerian tertiary institutions especially

**Corresponding Author: Email: bukasono123@gmail.com; Tel: 08064062111*

among undergraduates of medical schools. Such illicit drug use occurs in all forms of sport and at most levels of competition (Kate, 2013). Athletic life may prompt result in the use of illicit drugs for various reasons, including for improvement of performance, self-medication relating to psychological maladjustment, and to manage stressors, for example, pressure to enhance performance, minimize pains sustained from injuries, bruises, physical strains, and retirement from sport. The use of illicit drugs among students in medical schools may also involve doping with an end goal to gain success in sports competitions. On the other hand, it might include utilization of substances such as; alcohol or cannabis without the intention to enhance performance as the athletes may have developed substance use issue such as withdrawal syndrome similarly as any non-athletes may (Egbochuku and Akerele, 2007). The knowledge and attitudes of medical students about the problem of using illicit drugs in sport has been the subject of research of numerous authors. The negative attitude of medical students towards the use of illicit drugs in sports in Nigeria may be attributed to their perception concerning the hazardous health effects of such agents, beside the illegal and unmerited advantages that they offer to athletes in competitions (Alfred *et al*., 2007). In addition to other psycho-social reasons such as; escape from reality, identity and identification, frustration, expectation of failure in competition, pressure from team mate, social recognition peer approval and motivation from mass media (Knots 2000). Meanwhile, Morse, (2013) affirmed that competitors/athletes may use illicit drugs to adapt to various stressors, including pressure to perform, physical injuries and retirement from a life of sport which may likely occur much earlier than retirement from most other careers. Several researchers have reported the prevalence of illicit drug abuse among medical student populations (Alfred *et al*., 2007; Ahmadabadi, 2018). Despite the range of health risks and ethical implications, many undergraduate medical students in Nigeria continue to use these dangerous and prohibited substances to enhance their performance in most competitions in sporting activities, and this has become a subject of public health concern. Questions about illicit drug usage in general have long been noted as carrying with them social desirability and threat of disclosure problems (Tourangeau and Ting, 2007). Hence, illicit drug use by medical students leaves them particularly vulnerable to exploitation for other criminal purposes, including match fixing and fraud (Australian Crime Commission, 2013) as well as spread of secret cults among university students (Williams, 2013). Taking into account the rapid growth of this public health problem among athletes, it seems vital to conduct an assessment of the use of illicit drugs by medical students for sports in Delta State University Abraka considering factors such as; age, gender, type of school, parental background of the student and level of participation in sports.

MATERIALS AND METHODS

Study Design and Setting: This study adopted a cross-sectional survey design to assess medical student athletes of the College of Health Sciences of Delta State University, Abraka Nigeria. The goal of the research design was to make inferences about a given population of interest at a specific time pattern and this helps to describe the characteristics of a selected phenomenon and involves the collection of data without manipulation of variables. Thus, the survey design was considered appropriate for this study because it enhances the chances of obtaining quality information from the students. All research protocol was conducted in conformity to the required research guidelines and protocols.

Sampling procedure: The target population used for the study was 1,436 medical male and female students drawn from the total number of student-athletes in medical sciences from the College of Health Sciences, Faculty of Basic Medical Sciences, Delta State University, Abraka, which are; Anatomy, Physiology, Medical Biochemistry and Nursing Sciences Departments, including students from Medicine and Surgery respectively. Sampling was being accomplished in accessible and affordable way. So that, in addition to saving time and costs, sampling deficiencies reaches to minimum amount. The Simple random sampling technique through balloting was employed. This is based on the recommendation of Ezeh, (2005) that for a population of many hundreds, a sample of 10% should be used. Hence, a sample size of 143 students was selected as respondents for this study.

Data collection and measurement: A researcher-made confidential questionnaire was used as the principal instrument for the collection of primary data. The questionnaire had close ended questions. The questionnaire titled "Factors Responsible for Illicit Drugs Use in Sports Questionnaire [FRIDUSQ]" sorted information on the perceived factors responsible for the use of illicit drugs by medical students in sports in Delta State University Abraka, Nigeria. The instrument was made of two sections; A and B. Section A contains the demographic information of respondents while section B contains measured questions relating to illicit drug use as it relates to age, gender, type of school, parental background of the student and level of participation in

sports. These variables in the present study were examined on the basis of 4-point Likert type scale of Strongly agree [SA], agree [A], disagree [D] and strongly disagree [SD] respectively. The researchers administered a total number of 143 questionnaires to the selected medical student-athletes and 120 questionnaires were successfully filled and returned. Hence, the analysis was based on the response rate of 120 that were returned. The remaining 23 questionnaires were wrongly filled and mutilated and therefore rejected.

Statistical Analysis: Coding schemes was developed to organize the data obtained into meaningful and manageable categories. Data were analyzed with Statistical Package for Social Sciences [SPSS] software for descriptive statistics such as; frequencies, simple percentages and mean score with a bench mark criterion of 2.50 and above for acceptance and below 2.50 for rejection and analytical statistics including; Pearson Product Moment Correlation [PPMC] analysis. This was used to answer the research questions generated in the study. More so, the student independent t-test will be employed to test the research hypotheses formulated in the study.

RESULTS AND DISCUSSION

Descriptive analysis results: Data obtained were presented in distribution Chart and Tables. Figure 1 above shows that out of 120 answered questionnaires, 29 were filled by students from Physiology Department which represented 24%, this was immediately followed by 26 filled by students from Anatomy Department constituted 22%, while, 24 were filled by students from Nursing Science Department which represented 20% and 23 were filled by students from Medical Biochemistry Department which constituted 19%. However, the least responses were obtained from 18 students in Medicine & Surgery which constituted 15% respectively.

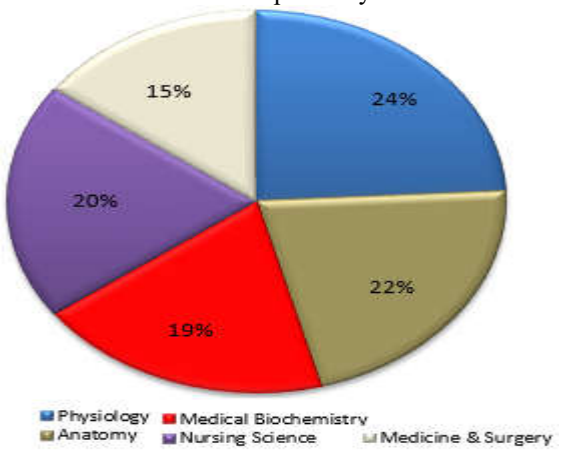

Fig 1: Response rate of the questionnaire administered to students

Table 1: Demographic characteristics of Respondents that participated in the research

Demographic Information	Frequency	Percentage [%]
Gender:		
Male	79	65.8
Female	41	34.2
Age:		
18-22	20	16.7
23-27	51	42.5
28-32	35	29.2
33 and above	14	11.7
Marital Status:		
Single	92	76.7
Married	28	23.3
Academic Levels:		
200	52	43.3
300	45	37.5
400	23	19.2
Religion:		
Christianity	95	79.2
Islamic	6	5
African Traditional Worshiper	10	8.3
Others	9	7.5
Parent Socio-economic Status:		
Low	65	54.2
Average	32	26.7
High	23	19.1

The demographic information of the medical student-athletes that participated in the study [Table 1] revealed that based on gender distribution, 65.8% were males while 34.2% were females. The highest age of the students fall between 23-27years [42.5%], this was followed by students that falls between the ages of 28-32years [29.2%] and the students whose ages were between 18-22years [16.7%]. However, the least were students whose age falls between 33years and above [11.7%]. In addition, considering their marital status, 76.7% were singles when compared to 23.3% that were married. Meanwhile majority of the respondents [43.3%] were 200level medical students, this was followed by 37.5% of the medical students that were in 300level and 19.2% that were in 400level respectively. Based on the religious inclinations of the participants, 79.2% were Christians, 8.3% are African traditional worshipers, 5% practice Islam and the remaining 7.5% had unspecified religious background. In linking the opinion of the respondents on the use of illicit drug and their parent's socio-economic status, it was gathered that 54.2% accepted that they were from poor homes, 26.7% rated their parents socio-economic status to be on the average while the remaining 19.1% of the students accepted that their parents socio-economic background is high. Data presented in Table 2 below shows the mean ratings of students' on age as a factor responsible for the use of illicit drugs by medical students in sports in Delta State University Abraka. Based on the cut-off point of 2.50 the respondents rated all the 5 items generated to be

acceptable. The mean rating of item statements 1, 2, 3, 4 and 5 were 3.05, 3.61, 3.35, 3.18 and 3.25 respectively. From the grand mean of 3.29, hence, it can be deduced that the age of students has significant relationship with the use of illicit drugs in sports to a large extent.

Table 2: Age as a Factor Responsible for the Use of Illicit Drugs by Medical Students

S/N	Description of Items	SA	A	D	SD	Mean	Decision
1	Students age determines substance accessibility	50	37	22	11	3.05	Accepted
2	Students with less age has inadequate knowledge of the harmful consequences of drug use	77	40	2	1	3.61	Accepted
3	Students are found to be more involved in substance use at an early ages	62	43	10	5	3.35	Accepted
4	Students of same peer age are frequent addict of drug abuse	47	52	15	8	3.18	Accepted
5	There is perceived relationship between the age of students and the knowledge of illicit drugs	50	55	10	5	3.25	Accepted
	Grand Mean					**3.29**	

Table 3: Summary on Pearson Product Moment Correlation on the relationship between Age of medical students and the use of illicit drugs

Variables	Mean	SD	Critical *r*	Corr. Index *r*	*df*	Sig 2-tailed	Remarks
Age of medical students	14.30	5.6	0.443	0.859**	18	0.001	Ho_1
Use of illicit drugs in sports	7.70	7.9					Rejected

** Correlation is significant at the 0.01 level [2-tailed]; * Correlation is significant at the 0.05 level [2-tailed]

Table 3 above shows Hypothesis I Testing of Pearson Product Moment Correlation [PPMC] as regards the relationship between the age of medical students and the use of illicit drugs. The Pearson correlation index *r* of 0.859 value with a degree of freedom 18 was greater than the critical r value of 0.443 with alpha Sig. [2-tailed] value of 0.001 was less than the 0.01 level of tolerance; hence, the null hypothesis previously stated was rejected while the alternate hypothesis is accepted. Hence, there is significant relationship between age as a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. Substance use among undergraduates in tertiary institutions has become a public health concern in recent times. In this research, it can be deduced that student's age determines substance accessibility, also, that students with less age has inadequate knowledge of the harmful consequences of drug use, meanwhile, students are found to be more involved in substance use at an early age and consequently, students of same peer age are frequent addict of drug abuse. Hence, there is relationship between age is a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. The study agrees with the view of Vladimir *et al.*, (2005) who reported an increased prevalence of psychoactive substance use among students in the age group 20-24 years. The data presented in Table 4 above shows the mean rating of students on gender as a factor responsible for illicit drugs used by medical students in sports in Delta State University, Abraka. Based on the cut-off point of 2.50 the respondents rated all the 5 items generated were accepted. Their ratings of items 6 to 10 are: 3.51, 2.73, 3.28, 3.28 and 3.26 respectively. Considering the grand mean which was 3.11, it can be indicated that the respondents adopted the opinion that gender has significant relationship with the use illicit drugs in sports to a high extent.

The outcome of the Pearson Product Moment Correlation [PPMC] Statistics to hypothesis II as regards the gender of medical students and use of illicit drugs in sports is shown in Table 5; this was significant because the calculated alpha Sig. [2-tailed] value of 0.368 was greater than the 0.05 level of tolerance. Moreover, the calculated correlation index r value of 0.122 was lesser than the 0.443 critical r value.

Table 4: Gender as a Factor Responsible for the Use of Illicit Drugs by Medical Students

S/N	Description of Items	SA	A	D	SD	Mean	Decision
6	Male students are more exposed to the use of illicit drugs than females	70	43	5	2	3.51	Accepted
7	Females always think about their family's reputation before using illicit drugs unlike males	43	44	10	3	2.73	Accepted
8	Males take illicit drugs more in the midst of friends than females	55	50	8	7	3.28	Accepted
9	Male students engage in drug abuse to enhance sports than females	32	47	22	19	2.77	Accepted
10	Gender of students has influence on the use of illicit drugs	60	40	11	9	3.26	Accepted
	Grand Mean					**3.11**	

Table 5: Summary on Pearson Product Moment Correlation on the relationship between Gender of medical students and the use of illicit drugs

Variables	Mean	SD	Critical r	Corr. Index r	*df*	Sig 2-tailed	Remarks
Gender of medical students	19.30	7.4	0.443	0.122	18	0.368	Ho_1 accepted
Use of illicit drugs in sports	2.60	1.6					

** Correlation is significant at the 0.01 level [2-tailed]; * Correlation is significant at the 0.05 level [2-tailed]

Hence, the null hypothesis II was hereby accepted. Therefore we conclude that there is no significant relationship between gender as a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. The second important finding of this study was that male students are more exposed to the use of illicit drugs than females, consequently, that females always think about their family's reputation before using that illicit drugs unlike males, in addition, males take illicit drugs more in the midst of friends than females, more so, male students engage in drug abuse to enhance sports than females. Hence, gender is a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. This finding agrees with the study carried out by Tshitangano and Tosin, (2016) which have shown that males are more likely than females to use illicit drug, which agrees with our findings. Although, in contrast to our study André *et al.,* (2012) in their study in Brazil reported no significant difference between gender in the use of alcohol, tobacco and illicit drugs.

Table 6: Type of School as a Factor Responsible for the Use of Illicit Drugs by Medical Students

S/N	Description of Items	SA	A	D	SD	Mean	Decision
11	Practice of drug abuse among medical students is more common in public institutions	22	11	50	37	2.15	Rejected
12	Students from private medical schools are more aware of the risk of illicit drugs in sports	37	62	10	11	3.04	Accepted
13	Medical students in public tertiary uses illicit drugs in sports than their counterparts	78	40	2	0	3.63	Accepted
14	Illicit drug abuse is often common among medical students than other university students	12	13	49	36	1.84	Rejected
15	Type of school of medical students has influence on their knowledge of illicit drugs	45	45	23	7	3.07	Accepted
	Grand mean					**2.75**	

Table 7: Summary on Pearson Product Moment Correlation on the relationship between type of school of medical students and the use of illicit drugs

Variables	Mean	SD	Critical r	Corr. Index r	*df*	Sig 2-tailed	Remarks
Type of school of medical students	19.40	7.8	0.443	0.179	18	0.311	Ho_1 accepted
Use of illicit drugs in sports	2.62	2.0					

** Correlation is significant at the 0.01 level [2-tailed]; * Correlation is significant at the 0.05 level [2-tailed]

Table 6 above presented data on the rating on type of school as a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. Based on the cut-off point of 2.50 the respondents rated 3 out of the 5 items generated acceptable while 2 of the items were rejected. Their ratings of items 12, 13 and 15 are: 3.04, 3.63 and 3.07 respectively while items 11 and 14 had a mean score below 2.50 criterion, meanwhile, there rating were 2.15 and 1.84 respectively and were rejected. Based on the data obtained as indicated from the cluster mean which was 2.75, it can be showed that the respondents share the view that the type of school of students has significant influence on their knowledge of illicit drugs used in sports to a high extent. Table 7 above shows the outcome of the Pearson Product Moment Correlation [PPMC] Statistics revealed there was no significant relationship between type of school of medical students and use of illicit drugs in sports; this was because the calculated alpha Sig. [2-tailed] value of 0.311 was greater than the 0.05 level of tolerance. Moreover, the calculated correlation index r value of 0.179 was lesser than the 0.443 critical r value. Hence, the null hypothesis III was hereby accepted, thus, we conclude that there is no significant relationship between type of school as a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. In this study, it was obtained that medical students in public tertiary institutions uses illicit drugs in sports than their counterparts and that type of school of medical students has influence on their knowledge of illicit drugs. Therefore, type of school is a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. The results of this study agrees with the opinion of Noori *et al*., (2016) who found the school the student

attends as a factor associated with substance use, considering that some schools with sport halls promotes illicit drug advertisement, prescription and are often distribution centers of drug abuse. The data presented in Table 8 above shows the parent socio-economic status as a factor responsible for illicit drugs used in sports in Delta State University, Abraka. Based on the responses obtained; item 17, 19 and 20 was above, had a the cut-off point of 2.50 and was accepted, meanwhile, the ratings of the items are: 3.38, 3.46 and 3.30 respectively. However, item 16 and 18 had a mean score below 2.50 criterion and were rejected. Their ratings are 2.13 and 1.99. However, the grand mean was 2.85 in a four-point rating scale which implies that the items in the cluster are acceptable. Hence, the respondents adopted the statements that parental background has influence on their knowledge of illicit drugs used in sport to a high extent.

Table 8: Parent Socio-economic Status as a Factor Responsible for the Use of Illicit Drugs by Medical Students

S/N	Description of Items	SA	A	D	SD	Mean	Decision
16	Students from affluent homes has more knowledge of illicit drugs used in sports	25	14	32	49	2.13	Rejected
17	Students whose parents are educated has more knowledge of illicit drugs used in sports	56	55	8	1	3.38	Accepted
18	Students from single parental upbringing has lesser knowledge of illicit drugs used in sports	22	16	41	21	1.99	Rejected
19	Students from broken home are more likely to use illicit drugs in sports	76	30	7	7	3.46	Accepted
20	Socio-economic status of parents has influence on student's use of illicit drugs	62	40	10	8	3.30	Accepted
	Grand mean					**2.85**	

Table 9: Summary on Pearson Product Moment Correlation on the relationship between parent socio-economic status of medical students and the use of illicit drugs

Variables	Mean	SD	Critical r	Corr. Index r	*df*	Sig 2-tailed	Remarks
Parent socio-economic status	18.30	8.5	0.443	0.078	18	0.415	Ho_1
Use of illicit drugs in sports	3.70	2.0					accepted

** Correlation is significant at the 0.01 level [2-tailed]; * Correlation is significant at the 0.05 level [2-tailed]

Table 9 above shows that the outcome of the Pearson Product Moment Correlation [PPMC] Statistics revealed there was no significant relationship between parent socio-economic status of medical students and the use of illicit drugs in sports; this was because the calculated alpha Sig. [2-tailed] value of 0.415 was greater than the 0.05 level of tolerance. In the interim, the determined correlation index r value of 0.078 was less than the critical index r value of 0.443. Subsequently, the null hypothesis IV which expresses that there is no significant relationship between parent socio-economic status as a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka was thus rejected. Data from this study revealed that students whose parents are educated has more knowledge of illicit drugs used in sports, also, that students from broken home are more likely to use illicit drugs in sports and socio-economic status of parents has influence on student's use of illicit drugs. Hence, parent's socio-economic status is a factor responsible for the use of illicit drugs by medical students in Delta State University, Abraka. Our findings confirms with studies by Lemstra *et al*., (2008) who have reported that there is a relationship between family socioeconomic status and adolescent use of illicit drugs.

Conclusion: Illicit drug abuse seems to have become a prominent social problem in Nigeria especially among our undergraduate athletes who often have the drive to be the best in sport to enhance performance. With the ever-mounting pressures faced by athletes, it is not surprising that drug abuse by athletes exists across essentially all sports and age groups. Hence, findings from this study revealed that illicit drug use in sports can be influenced by age, parent socio-economic status, gender and type of school, Hence, the need to educate medical students on the factors that influence and dangers of illicit drug use in sports.

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