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## Attitude of University Students towards Fake Drugs in Sokoto Northwest, Nigeria

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### **Abstract:**

*Drug counterfeiting is a serious public health challenge frequently associated with grave consequences that include treatment failure, drug resistance to microbes and even mortality beside its effect in causing colossal wastage of resources and human productivity globally. The current study is cross sectional, observational in design aimed at investigating the level of awareness and attitudes of students at Usmanu Danfodiyo University, Sokoto, Nigeria to the problem of drug counterfeiting so as to contribute to the pool of knowledge on fake drugs. Self administered, semi-structured validated questionnaires were used to generate data from four hundred and two (402) undergraduate students of the University. The respondents were selected by stratified random sampling. Data was analysed using Graph pad Instant software to calculate Proportions, Percentages, Odds and Confidence intervals. The mean age of respondents was  $26.6 \pm 5$  years, male: female of 3:1. Twenty-five (25%) of respondents were unaware of, while 22.4% had no knowledge of any hazard associated with fake drugs. The most frequently encountered class of unregistered drug was analgesics/antipyretics. The study revealed paucity of awareness on the problems of drug counterfeiting among the students in our locality, thus indicating the need for effective intervention through public awareness campaign.*

**Keywords:** Fake drugs, University students, Knowledge and Attitude

### **1. Introduction**

Fake and unregistered drugs constitute major challenges to safe health care delivery in developing world. The hazards of fake drugs are enormous which include treatment failures, drug resistance as well as toxicity resulting in increased morbidity and mortality. For instance, the reported emergence of fake antiretroviral drugs (Ahmad, 2004) as well as Artemisinin derived agents (Dondorf et al., 2004; Atemnkeng et al., 2007; Rozendaal, 2000; Newton et al., 2001; Newton et al., 2003) in some developing countries of South-east Asia and Africa is rather worrisome, due to inaccessibility or unaffordability of alternative drugs (Fackler, 2002).

It was due to the growing concern for the dangers posed by the counterfeit drugs in the country (Nigeria) that the military administration at that time promulgated Decree 99 of 1993 establishing National Agency of food, Drug Administration and Control (NAFDAC) saddled with responsibility of control and regulation of production, importation, exportation, advertisement, use and sale of all drugs, cosmetics etc. Since establishment the agency has made giant strides in curtailing the proliferation of substandard and counterfeit medicines. Since 2002 when up to 41% of the drugs circulating in the country were counterfeit, a remarkable progress has been achieved recently in this regard (Ebeleke, 2010; Taylor et al., 2001; Akunyili, 2007). Presently, the figure has drastically dropped to 10% (Akunyili, 2007).

In view of the dangers highlighted above of fake and substandard drugs this study is considered important and the choice of the study area was informed by the fact that use of drugs cuts across all the strata of society. To the best of the authors' knowledge no such study was carried out in the study area. University students are by all means a heterogeneous community reflecting diverse

socioeconomic, political, cultural and religious backgrounds. They represent a micro society of a large community. The aim of the study was to assess the attitude of respondents to fake and unregistered drugs.

## 2. Settings, Study Design, Sampling

Usmanu Danfodiyo University is one of third-generation universities in Nigeria established in 1975 and located in Sokoto North-West geopolitical zone of the country. It has nine faculties and five research centres. It has Sokoto, Kebbi, Zamfara, Niger, Katsina, Kano, Jigawa, Kaduna, Kwara, Nasarawa states as its catchment areas for admissions into various academic and non-academic programs (UTME brochure, 2011).

It was a cross sectional study involving undergraduate students of Usmanu Danfodiyo University Sokoto using self-administered questionnaires. Four hundred and two (402) respondents were recruited for the study by a predetermine sample size estimation. Total number of undergraduate students was obtained from the Management Information Services (MIS) of the university for the 2009/2010 session (13,476). The students were broadly categorized as Science-(5722) and Arts-based (7754) courses. The selection of respondents was by stratified sampling using proportionate allocation in respective academic disciplines. Sub degree, pre degree and post graduate students were excluded.

Semi-structured questionnaire was used for data collection. The questionnaire consisted of three sections namely A, B and C. Section A contained questions on the demographic characteristics of respondents while section B contained questions on knowledge of fake and unregistered drugs. Section C was left free for comments by respondents for areas not covered by sections A and B. The questionnaire was validated at Kebbi state University of Science and technology through a pilot study.

## 3. Data Collection

Two hundred and thirty-one (231) and 171 questionnaires were self-administered to Arts and Science-based courses students respectively by proportionate allocation with the help of survey assistants. The filled questionnaires were collected on the spots while others who could not fill the questionnaires were given the following day to complete the questionnaire and the questionnaires were retrieved. Four research assistants were recruited and briefed in all aspects of the study including aim of study, procedure of respondents' selection and administration of questionnaires.

## 4. Results

Three hundred and eighty-five questionnaires were recovered and analyzed after data cleaning representing a response rate of 95.8 %. The mean age of respondents was 26.6±5 years with male: female 3:1. About 289 (75%) of the respondents were aware of fake and counterfeit drugs in circulation but only 125(32%) had encountered such drugs. Out of 125 respondents who have an encounter with unregistered drugs only 29 (23.2%) reported it to the national agency for food and drug administration control (NAFDAC). Eighty seven (22.4%) were not aware of any hazards associated with fake drugs. All the incidents of unregistered drugs encountered by the respondents were restricted to chemists, shops and hawkers. The 2 most frequently encountered unregistered classes of drugs were analgesic/anti paretic agents (49%) and antimicrobial agents (39%).

The attitudes of the respondents in the situation of encountering fake drugs, opinion of the respondents on the major outlets of fake drugs as well as their personal choice about place of drug purchase are depicted in tables 1-3.

Action	Number (%)	Odds	95% CI
Destroy the drug	86(22.16%)	0.2876	0.2264-0.3654
Do nothing	53(13.66%)	0.1596	0.1196-0.2131
Return the drug	82(21.13%)	0.2706	0.2122-0.3452
Return the drug	118(30.41%)	0.4419	0.3560-0.5486
Take it as it is	49(12.63%)	0.1458	0.1082-0.1966

Table 1: Action the Respondents would have taken in case of an Encounter with Fake Drugs  
Key: NAFDAC National Agency of Food Drug Administration and Control

Out-let	Number (%)	Odds	95% CI
Unregistered pharmacy/chemist	122(31.44%)	0.4639	0.3744-0.5747
Hawkers	93(23.97%)	0.3185	0.2523-0.9972
No response	173(44.59%)	0.8160	0.6678-0.9972

Table 2: Opinion of Respondents on Main out-lets of Fake Drugs

Place of purchase	Number (%)	Odds	95% CI
Any chemist	131(33.76%)	0.5157	0.4179-0.6365
Registered pharmacy	153(39.43%)	0.6595	0.5379-0.8085
Hospital pharmacy only	104(26.80%)	0.3701	0.2957-0.4633

Table 3: Respondents Choice on Place of Drug purchase

## 5. Discussion

The male to female ratio found in this study differed with the finding of Sanya et al, 2013 in Ibadan. It is however supported by the preponderance of male gender in public service (NBS, 2011). The current study revealed that only 30.4% of the respondents indicated that they would report to NAFDAC if they encountered fake drugs, a figure which is quite low. However, the real percentage figure of those who will actually report such cases to NAFDAC may be lower. This is evident from the fact that only 23.2% (29 out of 125) of those who have an encounter with unregistered drugs reported it to the agency. This finding is not surprising in a country like Nigeria where such apathy in reporting encountered incidents of drug counterfeiting to appropriate authority was reported to be very common even among healthcare providers like pharmacists (Odili et al., 2006).

Other findings in this study are also worthy of great concern. The facts that over one third of the respondents purchase their drugs from any chemist and, also, up to about 12.6% of the respondents confessed that they will take the drug as it is even if they found out that it is not registered, is disheartening. Perception of drug consumers on counterfeit drugs is one of the determinants that encourage inflow of fake drugs to the markets (Kibwage 2008; Opiyo 2006).

These findings may not be unrelated to the lack of awareness of a significant percentage of the respondents (25%) about the presence of fake drugs in circulation. This is quite troubling, indicating the need for vigorous public awareness about the issue. Coupled to this, poverty level plays very crucial role as majority of Nigerians (90.2%) lived below poverty line of US\$ 2 a day (HAI-Africa, 2008) and cannot afford good quality medicine. And in some instances the price of medicines is so high such that patients pay up to 64 times international reference prices for medicines in many hospitals (WHO and HAI, 2008).

The fact that antimicrobial agents including anti malarials was the 2<sup>nd</sup> most frequently encountered unregistered drugs in this study was reassuring, indicating that a substantial progress in reducing the rate of counterfeit drugs among this important class of pharmaceuticals has been attained compared to a decade ago when this class of agents was the most frequently counterfeited drug products in developing countries (WHO, 1999; Frankish, 2003). It is also reassuring that none of the incidence of unregistered drugs encountered by the respondents (125 incidents) involves a registered pharmacy. This sanitization of pharmacies indicates that the serious anti counterfeiting crusade undertaken by NAFDAC within the past 10 years is paying off. This study is limited by the fact lack of registration of a particular drug was taken as drug counterfeiting, which, although reasonable may not be the situation in all cases.

In conclusion, the current study revealed paucity of awareness on the problem of drug counterfeiting among university students in our locality. Effective intervention through public awareness campaign is highly needed.

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