

## Short Communication

# Evaluation of use of antibiotic without prescription among young adults

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**Antibiotics are usually prescription only medicines. A high percentage of world's antibiotics are however used in the community without prescriptions. The study evaluated use of antibiotics without prescription among young adults in Nigeria. A questionnaire was designed to assess reported purchase, name and use of antibiotic without prescription. 38.79% respondents reported purchase of an antibiotic without a prescription. Only 25.86% correctly named an antibiotic as the medicine purchased. Among the respondents who purchased an antibiotic without a prescription, 90% used medicine for inadequate duration (< 5days) or at wrong dosing intervals. The most commonly named antibiotic purchased without a prescription is Ampiclox®. It is important to enforce regulation and sales of antibiotic to ensure rational use.**

**Key words:** Misuse, self-prescription, antibiotics.

## INTRODUCTION

Inappropriate use of antibiotics is a significant public health problem. The unnecessary use of antibiotics exposes the community to unwarranted medication and contributes to the development of antimicrobial resistance (Wutzke et al., 2007). Misuse of antibiotics, include failure to complete therapy, skipping of doses or reuse of leftover antibiotics, can potentially expose patients to suboptimal doses of antibiotic therapy. Such antibiotic-taking behaviors can result in insufficient antibiotic exposure for eradicating infectious bacteria and potentially create an environment that promotes antibiotic resistance (Foucault et al., 2007). Microorganisms resistant to multiple anti-infective agents have increased around the world, causing public health and medical concern because they threaten optimal care of patients with infection as well as the viability of the current health care system (DiazGranados et al., 2008).

A contributive factor to misuse of antibiotics is availability of antimicrobials to patients without a prescription or guidance from a well trained professional. This practice is potentially dangerous to a patient who might use an antibiotic for an indication for which it would

not be effective or mask the infection. The risk to the public is high, since some antimicrobials (eg Zidovudine in HIV and Rifampicin in tuberculosis) may be used alone in some conditions where the chance of selecting resistant strain is high (Reeves, 2007). In many developed countries, the availability of antibiotics is strictly controlled by insisting that no antibiotics are dispensed without a doctor's prescription or by pharmacists, nurse practitioner and other health professionals, (Larson et al., 2005; Reeves, 2007). However, in other countries around the world antibiotics are sold without prescription (Reeves, 2007). Okeke et al. (1999) reported that in developing countries, acquired bacterial resistance to antimicrobial agents particularly to first line, inexpensive broad spectrum antibiotics is common in isolates from healthy persons with community-acquired infections. The reason is a mixture of complex socio-economic and behavioral factors associated with antibiotic resistance, one of which is easy access to antibiotics without prescription. The issue of access to antibiotics without prescription is not unique to developing countries alone. Developed countries are confronted with this practice because of access to online pharmacy (Reeves, 2007), availability of antibiotics as OTC in some ethnic shops (Larson et al., 2005) and use of leftover antibiotics without consultation (Raz, 2005). No matter how or where the public gain access to these vital groups of medicines, it is a problem

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that must be investigated and warrants appropriate interventions.

### Purpose of study

The study set out to investigate prevalence of purchase of antibiotics without prescription and appropriateness of use among young adults in post secondary institutions.

### METHOD

A questionnaire was developed to assess level of reported purchase and use of antibiotics without prescriptions. The core questions assessed purchase of antibiotics without prescription, correctly naming an antibiotic as the medicine purchased, and the duration of use for the antibiotic purchased. The questionnaire was pre-tested (n=30) among students in a post secondary institution, after which it was fine-tuned for clarity. A total of 120 questionnaires were distributed.

### Statistical analysis

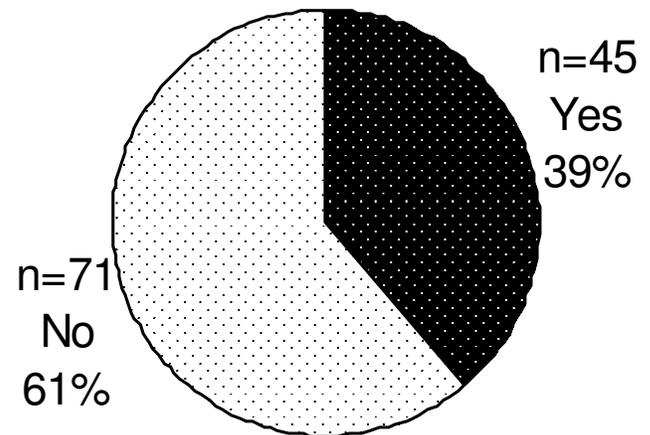
The questionnaires were analyzed using descriptive statistics.

### RESULT

Out of 120 questionnaires distributed a total of 116 (96.66%) were returned. The mean age for respondents was  $24 \pm 0.77$  years. Out of the 93.97% that gave a positive response to question 'Have you used antibiotics before?' About one out of four (38.79%) agreed to have purchased an antibiotic without a prescription Figure 1. 25.86% (n=30) of the total respondents who said they had purchased an antibiotic without a prescription also correctly wrote the name of antibiotic purchased. Among the respondents who reported purchase of an antibiotic without a prescription, only 3 out of 30 respondents (10%) reported use of antibiotics for  $\geq 5$  days indicating that 90% of youths that purchased antibiotics without prescription did not use it appropriately. The most commonly named antibiotics purchased by youths without a prescription was Ampiclox®. It was purchased by 21 out of the 30 respondents (that is, 70%) followed by Ampicillin 13.33% (Table 1).

### DISCUSSION

The work investigated the use of antibiotics without prescription among young adults in post secondary institution. It assessed the level of misuse of these agents in the community. One out of four young adults surveyed have purchased an antibiotic without prescription. The result is lower (38.79%) than studies conducted in Jordan



**Figure 1.** Have you ever purchased an antibiotic without a prescription before?

which reported level of purchase of antibiotic without a prescription at 46% (Al-Bakari et al., 2005) while purchase of antibiotics for self medication in a survey of Southern Spain was 41% (Väänänen et al., 2006). In comparison, in a study amongst the Greek population, the level of use of non prescribed antibiotic was as high as 74.6% (Mitsi et al., 2005). This difference in results may be attributable to age group surveyed as this particular project surveyed young adults in post secondary institutions (mean age  $24 \pm 0.77$  years) while earlier studies seem to have studied the general population constituting of older adults. This probably suggests that purchase of antibiotic without prescription is a habit that increases with age of the population if left unchecked.

This work revealed that Ampiclox® (Ampicillin/Cloxacillin) is the most commonly purchased antibiotic without prescription. This is closely in agreement with the Jordanian study (Al-Bakari et al., 2005) that reported penicillin's with extended spectrum to have the as highest percentage for self medication in treating upper and lower respiratory infection and the Greek study (Mitsi et al., 2005) that showed Amoxicillin was the most more frequently purchased antibiotic without prescription. The widespread access to antibiotics without prescription, with resultant inappropriate use, may lead to increased development of resistant strain. This has grave implication in practice - increased use of more expensive antibiotics by prescribers, which may decrease access to life saving essential medicines because patient cannot afford medicines especially in resource limited environment. It is becoming imperative that sales of antibiotics need to be regulated in our environment to prevent misuse of antibiotics and slow antibacterial resistance development. Misuse of antibiotic defined in this work as the use of antibiotics without a prescription

**Table 1.** Names of drugs purchased without prescription.

Drug	Respondents (n)	% respondents
Ampiclox	21	70
Ampicillin	4	13.33
Ciprofloxacin	2	6.68
Amoxicillin	1	3.33
Erythromycin	1	3.33
Procaine Penicillin	1	3.33
Total	30	100

and the reported use of incorrect dose, wrong dosing interval and inadequate duration was found to be high 90% (27/30) among the population that reported purchase of antibiotics without prescription. The Jordanian and Greek work recorded some measure of inappropriate use among people self medicating with antibiotics, ranging from 10% (those who did not follow correct dosage instruction) to 50% (those that discontinued therapy earlier than appropriate time) (Mitsi et al., 2005).

## Conclusion

It can be concluded from this work and the literature that unrestricted access to antibiotics results in high level of misuse of antibiotics that needs to be addressed. Access to antibiotics needs to be restricted (prescription only), and using regulatory measures, enforced. In line with Global strategy for containment of Antimicrobial resistance (WHO, 2001), education of patients on suitable alternative to antimicrobials for relief of symptoms and discouragement of patient self-initiation of treatment, except in specific circumstances needs to be initiated. Interventions that address inappropriate use of antibiotics and its dire impact directed at the community and all members of the health team are needed.

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