Medical students'self-medication practice and knowledge of over-the-counter medications in south eastern nigeria

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Abstract

Background: Self-medication and inappropriate use of antibiotics and antimalarials has contributed to the spread of resistant strains of organisms worldwide including Nigeria.

Methods: This study of 5th year medical students used a 44-item questionnaire to assess their use of medications without a prescription order and their knowledge on use of over the counter (OTC) medications. Scores were used to assess the appropriateness of their knowledge on the use of OTC medications.

Results: Of the 81 students in the class, 77 participated in the study (95% response rate). Females were 40 (51.9%) while the males were 37 (48.1%) in number. Sixty five (85.5%) and 45 (58.4%) of the respondents have self-medicated in the last 6 months and one month respectively. There was no difference between the sexes at six months and one month (OR 0.76; 95%CI 0.2-2.7, and OR 0.57; 95%CI 0.2-1.4 respectively). Most commonly used drugs include: antimalarials (39.4%), analgesics (36.3%), and antibiotics (18.1%) among others. The indications for which these drugs were used include: suspicion of malaria (46.7%), menstrual pains (20%), headaches and body pains (13.3%) among others. The common reasons given for self-medicating were: a previous experience with the treated ailment (60.0%) and the thought that they required no professional medical intervention (58.4%). Less than half (42.4%) had an average or good knowledge on what ailments were eligible for self-medication. There was no difference in the knowledge between the sexes (p=0.46).

Conclusion: There is a high prevalence of self-medication, including use of antimalarial and antibiotics, among the students.

Key words: Self-medications, over-the-counter drugs, students, medical, inappropriate use of drugs, indiscriminate

Introduction

The practice of self-medication in Nigeria is common and rampant among the general population and even among health care workers.[1,2] This phenomenon however is not peculiar to Nigeria and has been widely observed in various parts of Africa and the world.[3,4] National drug regulatory authorities may approve certain drugs as being safe for self-medication after considering the socio economic status of the community. In some instances self-medication is appropriate especially for minor ailments or conditions that may not require medical consultation, or in treatment of chronic diseases where initial diagnosis has been made and patients are well motivated and educated.[5] Self-medication is commonly adopted among Africans for initial relief of symptoms, when access to a medical facility is not readily available or to get round the bureaucracy of established hospitals.[6] Other factors such as poverty, cultural perception of certain diseases and perceived responses to indigenous medications have been widely observed as indicators of self-medication in developing countries making the practice a necessity.[7,8]

However, in many countries such medications, as antimicrobials, are strictly regulated and cannot be obtained over-the-counter (OTC). OTC drugs are regarded as safe and effective medications for use by the general public without a doctor's prescription.[9] OTCs include several classes of drugs including analgesics and antipyretics, gastrointestinal, dermatological agents, night time sleep aids, cold and allergy drugs etc, but exclude antibiotics, antimicrobials and injections.[10] The consequences of self-medication are varied and multiple; such practices as inadequate dosing, incomplete courses and indiscriminate drug use have contributed in a significant manner to the emergence and spread of antimicrobial resistance.[5,11] Others include; incorrect self-diagnosis which can delay diagnosis and treatment of potentially fatal illnesses, added risk of drug-drug interactions, added risk of adverse events and a potential for misuse and abuse.[12,13] The drug regulatory system in Nigeria is weak and many 'controlled' medications can be obtained OTC without a prescription order. Self-medication can be harmful to the patient as such patients

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don't have prior medical review and can develop drug-drug/drug-food interactions, failed treatments and may develop resistant strains of microorganisms.[5] As much as possible, self-medications should be discouraged especially for controlled drugs like antibiotics. It is also considered ethically undesirable.

Medical students are expected to practice and educate their patients on graduation and should possess the right information on OTCs and controlled medications. Through didactic lectures and tutorials in pharmacology and therapeutics, these students are imparted the necessary information on OTCs and controlled substances. However, self-medication and particularly use of antibiotics has been observed to be prevalent even among undergraduate medical students in a part of Nigeria.[14] Also, the use of antimalarial drugs for presumptive treatment of malaria is common among medical students[15] as well as among healthcare workers, among whom self-medication despite availability and proximity to expert care has also been observed.[16]

This study was conducted among the 5th year medical students shortly on completing a thirteen weeks posting on pharmacology and therapeutics to assess their knowledge on OTCs and controlled drugs, and their practice of self-medication during the period of their posting. The study is also aimed at identifying areas for intervention in their training especially in curriculum development.

Materials and Methods

The study took place at the Imo State University teaching hospital in Orlu, Imo State. Orlu is a semi-urban town with an estimated population of two hundred and twenty thousand (220,000).[17] The teaching hospital is a 250-bed facility that serves as a training institution for medical students, nurses and laboratory scientists; as well as serving as a referral center for tertiary level health care to the people of Orlu and its environs.

This was a cross-sectional study of the 5th year medical students of Imo state University shortly after completing a three months posting on pharmacology and therapeutics. All students were addressed before the study was conducted and only those who decided to voluntarily participate in the study were given questionnaires. Accent to participate in the study was taken as given consent by the participants. Participants were not required to provide their names to encourage participation through anonymity. Approval for the study was given by the Imo State University Teaching hospital Ethics Committee.

A pre-tested 44-item questionnaire assessed their use of medications without a prescription order in the preceding six months and one month prior to the study, and their knowledge on use of OTC medications. Assessment of medications to be obtained OTC was done by asking eight specific questions on some of the commonly available drugs and their treatment

indications. A score (0 – 8 based on the questions asked) was used to assess the appropriateness of their response to what medications may be taken OTC without a prescription order and graded as follows: "poor knowledge" (0-1), "fair knowledge" (2-3), "average" (4), "good knowledge" (5-6) and "very good knowledge" (7-8).

Collected filled questionnaires were entered in data form and analyzed using SPSS 15.0. Results are presented in frequencies and proportions, while comparison of variables was done using odds ratio and chi square where necessary. An independent student t-test was used to compare the age of both sexes of students. A P-value < 0.05 was considered significant.

Results

Demography: There were eighty one (81) 5th year medical students in the class of which seventy seven (77) agreed to participate in the study (95% response rate). Females were 40 (51.9%) while the males were 37 (48.1%) in number. There mean age of both male and female students were similar (25±1 vs. 25±2 years respectively; p = 0.99). Eight (10.4%) of the students were married and all were females. All except one (76/77) are of the Ibo tribe and sixty eight (88.3%) students lived within walking distance of a drug sales outlet.

Practice of self-medication: Sixty five (84.4%) and 45 (58.4%) of the respondents had used medications without a prescription order in the last six months and one month respectively preceding the study. There was no difference between the sexes on self-medication at six months and one month (OR 0.76; 95%CI 0.2-2.7, and OR 0.57; 95%CI 0.2-1.4 respectively). Although a higher proportion of females used drugs on self-medication at 6 months (87.2% females vs 83.8% males) and in the last month (65% females vs 51.4% males).

While only six students had used herbal medications in the last six months; ranging from neem tree preparations, local concoctions and proprietary herbal preparations, there was no association of sex with herbal use (OR 2.3; 95% CI: 0.4-13.4).

Only three females were on treatment for a chronic illness (dyspepsia, high blood pressure and rheumatic pains). The drugs most commonly used by the students in the last month included: antimalarial (39.4%), analgesics (36.3%), and antibiotics (18.1%) among others (Figure 1).

The indications for which these drugs were used without a prescription order included: suspicion of malaria (41.1%), headaches and body pains (29.3%), menstrual pains (10.1%) among others. Among the 45 students who had used medications in the last month, suspicion of malaria was the commonest indication (46.7%). Others were menstrual pains and headache among others (Table 1).

Table 1: Indications for self-medication among medical students in the last month (N= 45)

Indication for self-medication	Frequency	Proportion
Suspicion of malaria	21	46.7
Dysmenorrhea/pains	9	20
Headache/migraine	6	13.3
URTI	5	11.1
Boils/acne	2	4.4
UTI	1	2.2
Diarrhoea	1	2.2

URTI: upper respiratory tract infection; UTI: urinary tract infection

Information about medications used were usually obtained sometimes from multiple sources and these included doctors (36.9%), medical texts textbooks (35.4%), pharmacists (24.6%), friends (18.5%) and relatives (12.3%), and from the media/magazines (10.8%).

Figure 1: Distribution of last drugs used by respondents in the last month (N= 45)
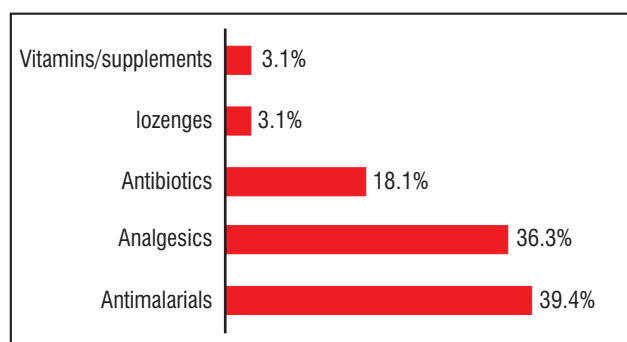
The common reasons given for self-medicating were: a previous experience with the treated ailment 60% (39/65); the thought that they required no professional medical intervention 53.8% (35/65); or to save cost of treatment 35.4% (23/65) as in Figure 2.

Figure 2: Given reasons for self-medication among students (multiple responses given)
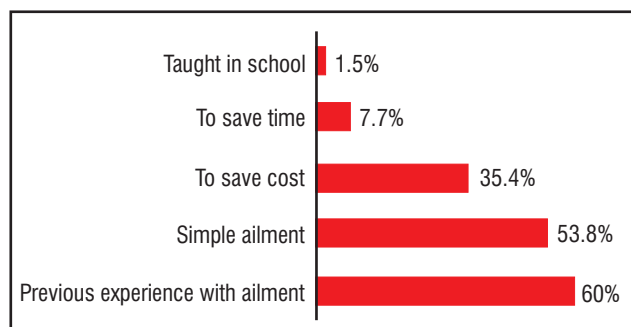
Most respondents obtained their medications from pharmacies (62.9%) and patent medicine stores (29%).

A total 53 of the 65 (81.5%) respondents obtained the desired relief after self-medication. Less than half, 36 (46.8%), of the respondents would suggest self-medication to others. The most popular drug classes suggested as appropriate for self-medications included analgesics (58.3%), anti-malarials (25%), multivitamins/ nutritional supplements (8.3%), antibiotics (5.6%) and anti-asthmatics (2.8%).

Figure 3: Proportion of respondents' score on knowledge of drugs that should be obtained OTC
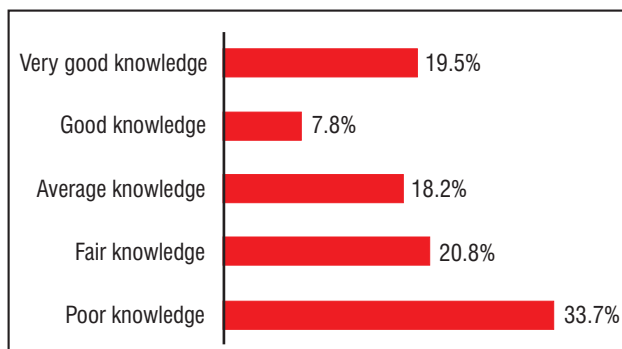
Knowledge of OTCs: Less than half (42.4%) had an average or good knowledge on what ailments were eligible for self-medication (Figure 3). There was, however, no difference in the knowledge of OTCs between the sexes (x^2=2.59, P = 0.63).

Discussion
The practice of self-medication and use of antibiotics as well as antimicrobials has been observed to be prevalent among healthcare workers and medical students in Nigeria.[14-16] Medical students who are training to become practitioners are expected to practice what they are taught and in such a manner as to distinguish prescription drugs from OTC medications.

The observed proportion of respondents who practiced self-medication in the preceding six (6) months (85.5%) exceeds observations made among other groups of medical students[14,15] and even among the general population,[18,19] but similar to findings of Omolase et al (85%) among general outpatients.[6] However, in the last month preceding our study, 58.4% of the students had practiced self-medication. Gender did not significantly affect self-medication as we observed and in another study among medical students[14] but other studies observed that females had a higher likelihood of self-medication .[20] Our study population can be regarded as young with average age of 25.3 years and the prevalence of self-medication has been reported to be higher among the younger population (15-35 years) in the Middle East.[21] However, it has been observed that self-medication is higher among urban dwellers and better educated individuals.[21]

We observed that antimalarial medications and

analgesics were the commonly used drugs implying that a presumptive treatment for malaria is prevalent, and similarly observed among other Nigerian population and may not be unique to our cohort as the demography of the studied population varied.[6,18,19]

The commonest reasons for self-medication were 'a previous knowledge of treatment of the ailment'(60%) and that the 'illness was simple enough to treat without professional medical assistance'(53.8%). Omolase et al observed that the commonest reason for self-medication was that treated illness was simple enough in 54.7%.[6] However, a lower proportion of medical students studied (42.6%) volunteered this as a reason for self-medication.[14] Having a previous experience with treatment especially when desired response was achieved and a simple enough illness appears to be a strong reason for self-medication. While we observed in our study the other reasons for self-medications were the need to save cost (35.7%) and time (7.7%), these were similarly observed in other studies where proportions for the need to save cost and time ranged from 16% to 32%.[6,21,22]

Only 81.5% who used drugs following self-medication obtained desired relief after suggesting that 18.5% of respondents may have had a wrong treatment or misdiagnosis, a common risk associated with self-medication.[12] Though self medication has some benefits like empowering patients in treating minor illnesses, increased access to medications and reduced burden on public funded healthcare systems; the associated risks include incorrect self-diagnosis, delay in seeking medical attention, adverse reactions, drug interactions, incorrect dosage and administration, masking of a severe disease and risk of dependence and abuse.[23,24]

Just fewer than half the respondents will recommend self-medication to others. In a study among non-medical tertiary education students, 40% of the students encouraged self-medication.[15] These are two different population groups suggesting a willingness to recommend self-medication may be unrelated to the educational background of the students. Also, 25% will recommend antimalarial self-medication and 5.6% antibiotics, suggesting that these students do not completely understand the drugs to be obtained OTC on self-medication. This is also reflected by the fact that a total of 54.5% of students had a "fair"or "poor" knowledge on drugs that should be obtained OTC (Figure 3).

Conclusion

There is a high practice of self-medication, including the use of antimalarial and antibiotics, among the medical students as background knowledge in medicine and interaction with qualified medical personnel provides them with the opportunity to use certain medications without a prescription order. Additionally, they generally have a poor knowledge on what medications were appropriate to be obtained OTC. It is imperative that the teaching of appropriate medications to be dispensed OTC without a prescription order is incorporated in their lectures on therapeutics.

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