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## Influence of drug promotion on prescribing habits of doctors in a Teaching Hospital

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### Summary

This descriptive cross-sectional survey was conducted at University of Ilorin Teaching Hospital to examine the influence of drug promotion by drug companies on the prescription habits of doctors in the hospital. Self-administered questionnaires were used to collect information from 137 doctors selected across all the clinical and laboratory departments using proportionate sampling. Majority (89.0%) of the doctors had attended drug promotion forum and were exposed to 64 different branded drugs within 6 months to this study. Fifty percent of the doctors had prescribed promoted drugs for the first time within 6 months to this study and over two-thirds agreed that drug promotion materials served as incentives to prescribe promoted drugs in preference to their alternatives. More than two-thirds of the doctors did not prescribe in generic names, thus making them susceptible to prescribing promoted branded drugs. Drug promotion by drug companies influence prescription habits of doctors in this teaching hospital. This finding though beneficial to the drug companies may not necessarily be cost-effective and to the benefit of the patients. Further studies and attention on this issue in developing countries is necessary with the ultimate aim of protecting the interest of patients in the face of rising cost of pharmaceuticals.

**Keywords:** *Drug promotion, influence, prescription habits.*

### Résumé

Cette étude était conduite au centre universitaire hospitalier d'Ilorin pour examiner l'influence de la promotion médicale des compagnies pharmaceutiques sur les prescriptions médicales habituelles des médecins dans les hôpitaux. Des questionnaires administrés librement étaient utilisés pour avoir des informations sur 137 médecins sélectionnés dans les cliniques et les départements utilisant une population proportionnelle. La majorité des médecins (89%) avaient atteint un forum de promotion du médicament

et étaient introduit à 64 différents génériques de médicaments 6 mois avant cette étude. 50% des médecins prescrivait les médicaments en promotion avant la fin des 6 mois précédent cette étude et les 2/3 acceptaient que le matériel reçu de la promotion encourageait dans la prescription de ces médicaments de préférence. Plus des 2/3 des médecins ne prescrivait pas les génériques, ainsi susceptible de prescrire les médicaments génériques en promotion. La promotion du médicament par la compagnie influence les habitudes de prescription des médecins dans les centres hospitaliers universitaire. Ce résultat, bien que bénéfique pour les compagnies, peut ne pas nécessairement l'être pour les patients. Des études approfondies dans les pays sous développés sont nécessaires afin de protéger l'intérêt des patients face à la quête pharmaceutique. Cette hôpital a besoin d'avoir un formulaire de médicaments pour réduire les comportements irrationnels de prescription parmi les médecins.

### Introduction

Spending on prescription drugs is the fastest growing component of the health care budget [1]. Pharmaceutical industries spend between 15 and 25% of its total budget on promotional activities, and this proportion is even higher in third world countries [2]. Drug promotion refers to all informational and persuasive activities of pharmaceutical industries, the effect of which is to induce prescription, supply, purchase, and use of medicinal drugs [3].

Proponents of drug promotion and advertising claim that it is informative and educational; opponents are concerned that the information conveyed encourages inappropriate and unnecessary use of such drugs [4]. This study examined the influence of drug promotion on prescribing habits of doctors in University of Ilorin Teaching Hospital, Ilorin, Nigeria.

### Materials and methods

The descriptive cross-sectional survey was conducted at University of Ilorin Teaching Hospital (UIH), Ilorin, Kwara State, Nigeria. The Teaching hospital is one of the second-generation teaching hospitals in Nigeria. The hospital provides specialist and to some

extent primary care to patients and has residency-training programs in most specialties of medicine. All the clinical and laboratory departments were represented in the sample population (Table 1). At the departmental level, proportionate sampling was used to select respondents from the different cadres of doctors. In all, 137 doctors out of a total of 331 doctors in the hospital were recruited into the study. Self-administered questionnaire was used to collect information on respondents' demographic characteristics, attendance of drug promotion forum, and influence of drug promotion on attitude and prescription habits of the physicians.

**Table 1:** Distribution of respondents by department

Department	Freq	(%)
Medicine	18	(13.1)
Surgery	20	(14.6)
Paediatrics	10	(7.3)
Obstetrics & Gynae	18	(13.1)
Epidemiology	13	(9.5)
Ophthalmology	9	(6.6)
Otorhinolaryngology	7	(5.1)
Radiology	8	(5.8)
Anaesthesia	8	(5.8)
Microbiology	6	(4.4)
Chem. Pathology	8	(5.8)
Morbid Anatomy	5	(3.6)
Haematology	7	(5.1)
Total	137	(100)

Data collected was entered and analyzed using Epi-Info version 6.04-computer software. Frequency distribution and chi-square analysis was done and P-value < 0.05 was taken as statistically significant.

## Results

A total of 137 doctors made up of 28(20.4%) females and 109 (79.6%) males were the respondents. The mean period of experience since graduation was 5.8 ± 5.02 yrs. The respondents were made up of House officers (36.1%), Registrars (36.8%), Senior Registrars (21.1%) and Consultants (6.0%).

Among the respondents, 121(89.0%) had been to a drug promotion forum out of which 97(70.8%) had attended a drug promotion forum within 6 months prior to the survey. The various drug promotion forum attended by the respondents took place in on going hospital academic programmes such

as grand rounds (64.5%), drug lunch (20.9%), clinics (5.5%) and association activities (9.1%)

Respondents who had attended a drug promotion forum mentioned 64 different drugs promoted by different pharmaceutical companies (Table 2). Over half (60.6%) of the respondents attended drug promotion by one of the drug companies within the last 6 months prior to the survey and less than 15% of the respondents had attended drug promotion of each of the other drug companies.

**Table 2:** Therapeutic classes of drugs promoted

Therapeutic class	Freq	(%)
Analgesics	3	(4.7)
Vitamins	4	(6.3)
Antibiotics	11	(17.2)
Antimalarials	7	(10.9)
Antiallergies	3	(4.7)
Anticonvulsants	4	(6.3)
Antipsychotics	5	(7.8)
Antihypertensives	10	(15.6)
Antidiabetics	6	(9.4)
Diuretics	7	(10.9)
Topical Prep.	2	(3.1)
Immunological Prep.	2	(3.1)
Total	64	(100)

More than two-thirds (70.1%) of the doctors received some promotional materials such as pens and notebooks during the drug promotion within the previous 6 months out of which 68 (49.6%) had prescribed the promoted drug within that period, 57 (41.6%) had not and 12 (8.8%) were not sure (Table 3).

**Table 3:** Exposure to and influence of drug promotion on respondents

Factors	Response (%)	
	Yes	No
Ever attended drug promotion	121(89%)	15(11%)
Attended drug promotion in the last 6 months	97(70.8%)	40(29.2%)
Received drug promotion material	96(70.1%)	41(29.9%)
Prescribed promoted drug in the last 6 months	68(49.6%)	57(41.6%)
Prescribed promoted drug for first time	65(50.0%)	65(50.0%)

**Table 4:** Perception of Respondents on Influence of Drug Promotion On prescription

Factors	Response			
	S.A.	A	D	S.D.
Physicians prescribe drugs recently promoted	7(5.2%)	55(40.7%)	63(46.7%)	10(7.4%)
Promotional materials are incentives	19(14.1%)	70(51.9%)	38(28.1%)	8(5.9%)
Drug Promotion Makes You Prescribe Recently Promoted Drugs	Yes	No		
Is Your Prescription Pattern Affected By Drugs Promoted Within The Last 6 Months	61(46.2%)	71(53.8%)		
	35(26.3%)	98(73.7%)		

S.A. =Strongly Agree A =Agree D =Disagree S.D. =Strongly Disagree

**Table 5:** Physicians' years of experience and influence of drug promotion

Variables	Years of experience		
	0 – 4	5 +	
Attended Drug Promotion in last 6 months			
Yes	29(50.9)	68(85.0)	$\chi^2= 20.36$ p = 0.001
No	28(48.1)	12(15.0)	
Received Drug Promotion Material			
Yes	29(50.9)	67(83.8)	$\chi^2= 19.01$ p = 0.002
No	28(48.1)	13(16.2)	
Prescribed promoted drug in the last 6 Months			
Yes	15(32.6)	53(67.1)	$\chi^2= 19.42$ p = 0.002
No	31(67.4)	26(32.9)	
Prescribed promoted drug for first time			
Yes	20(35.7)	45(60.8)	$\chi^2= 24.20$ p = 0.0002
No	36(64.3)	29(38.2)	
Promotional materials are incentives			
Agree	44(77.2)	45(57.7)	$\chi^2= 21.30$ p = 0.0182
Disagree	13(22.8)	33(42.3)	
Promotion Material Makes You Change Prescription			
Agree	9(16.1)	26(33.8)	$\chi^2= 7.29$ p = 0.0226
Disagree	47(83.9)	51(66.2)	
Always Prescribe In Generic Name			
Yes	17(29.8)	26(33.8)	$\chi^2= 5.14$ p = 0.6289
No	40(70.2)	51(66.2)	

Significantly higher proportion of doctors with at least 5 yrs post graduation experience had attended a drug promotion forum ( $P<0.05$ ), received drug promotion materials ( $P<0.05$ ) and prescribed promoted drugs within the previous 6 months ( $p<0.05$ ) when compared to doctors with less than 5yrs post

graduation experience (Table 5). Also, significantly higher proportion of those with at least 5 years experience compared to doctors with less than 5yrs post graduation experience prescribed the promoted drug for the first time within the previous six months ( $P<0.05$ ) (Table 5).

Half (50.0%) of the respondents who prescribed the promoted drug in the previous six months were prescribing those drugs for the first time (Table 3). Sixty-three (46.0%) of the doctors agreed that doctors tend to prescribe promoted drugs in preference to their alternatives while 72 (53.3%) disagreed. Also, 89 (65.0%) of the doctors agree that drug promotion materials are incentives to make doctors prescribe promoted drugs more frequently (Table 4). Significantly higher proportion of the doctors with at least 5 years experience compared to doctors with less than 5 yrs post graduation experience agree that promotion materials are incentives to frequently prescribe promoted drugs, and that drug promotion tend to make doctors change to prescribe promoted drugs more than the alternatives ( $P < 0.05$ ) (Table 5).

However, only 25.5% of the doctors reported that the promotion materials influenced their drug prescription. Also, less than a third (32.1%) of the doctors claimed they always prescribe drugs in generic names. All the doctors interviewed have drug information from sources other than drug promotion. The other sources of drug information include; Medical School Training (18%), Senior Colleagues (35.7%), Colleagues (5%), Journals/Periodicals (25%), Books (70%) and The Internet (57%).

Though less than a third of the doctors reported that drug promotion materials affected their prescription habit, significantly higher proportion of those with at least 5 years practice experience compared to doctors with less than 5 yrs post graduation experience reported that their prescription habit was affected by promotion materials ( $P < 0.05$ ). There is no significant difference among the doctors with at least 5 years experience compared to doctors with less than 5 yrs post graduation experience on whether or not they always prescribe drugs in generic names ( $P > 0.05$ ). (Table 5)

## Discussion

Drug promotion is sometimes a determinant of irrational and unhealthy use of drugs. Pharmaceutical industries throughout the world are heavily involved in aggressive drug promotions with a clear aim to change the prescribing habits of physicians [2,3]. In this study, most of the physicians were exposed to drug promotion. Within a period of 6 months, drug promotions had been held for over sixty branded drugs. This supports the finding of aggressive drug

promotion by drug companies. While drug promotion is a forum for physicians to obtain information on drugs, it has negative effects. Studies have shown that these pharmaceutical industries do not adhere to ethical principles such as emphasizing both the beneficial and harmful effects of such promoted drugs and in most situations the drug promotion leads to irrational and unhealthy use of drugs [2, 3].

Studies have found that multinational and national drug companies often grossly exaggerate indications for the use of drugs and minimize or ignore the associated hazards. Physicians are provided with grossly exaggerated claims and the hazards of the prescription drugs are covered up or glossed over. Physicians in developing countries are more prone to the negative consequences of drug promotion [5,6].

Most of the physicians received drug promotion materials, which they largely agree tend to be an incentive for physicians to frequently prescribe the promoted drugs though majority denied being personally influenced by the promotion materials. While promotion materials may not be much valued by physicians in developed countries to influence their prescription habit, the same cannot be said of physicians in developing countries. This is another factor that influences prescription habits of physicians. In this study, majority of the physicians did not always prescribe in generic names; this makes them more susceptible to prescribing brand names of promoted drugs. The availability of a drug formulary should help to curb indiscriminate prescribing habits but unfortunately, no drug formulary exists in the hospital.

Striking differences were found in the manner in which identical drug, marketed by identical company or its foreign affiliate was described to physicians in the United States and to physicians in Latin America. In United States, listed indications were usually few in number, while contraindications, warnings and potential adverse reactions were given in detail but it is the reverse in Latin America [7]. This study has shown that physicians tend to prescribe the promoted drug frequently and a high proportion of them never prescribed the drugs before their exposure to the drug promotion. Prescription decisions are influenced by the profit-motivated activities of drug companies particularly drug promotion [8].

Within six months the doctors interviewed had attended drug promotions of over sixty branded drugs within the institution. It is known that the existence of a large number of drugs may result in

confusion at all levels of the therapeutic chain and represent a waste of manpower and money [2].

Even though a high proportion of doctors agreed that drug promotion materials affects drug prescription habits of doctors, few of them accepted that promotion materials influenced their prescription habit. The common practice of doctors in the study population of not prescribing in generic names also made them susceptible to prescribe promoted drugs. The more experienced physicians in this study were more exposed to drug promotions, received promotion materials and prescribed promoted drugs more. This observed difference may however be due to the fact that less of the experienced physicians were included in this study. The implication however, is that these physicians are likely to influence prescribing habits of the junior physicians more so in a teaching hospital setting.

The cheaper alternative drugs are not frequently promoted by drug companies, the costly ones are usually promoted by the drug companies as marketing strategies. Unfortunately not many doctors consider cost of the drugs as a major factor in treatment of their patients [9]. De-emphasizing the use of expensive medications and their substitution for cheaper medications that are just as effective should be a major concern particularly in developing countries where affordability of health bills is a major problem. Consumers need to be protected from rising cost of pharmaceuticals [4,10].

In conclusion this study showed that drug promotion by drug companies significantly influenced prescription habits of doctors in this teaching hospital by tendency to prescribe the promoted drugs, and this might be the situation in most teaching hospitals in developing countries where drug formularies do not exist. This finding though beneficial to the drug companies promoting these drugs may not necessarily be cost-effective and to the benefit of the patients. Physicians in developing countries need to be protected from the unethical practice of double standard in drug promotion. Also further studies and

attention on this issue in developing countries is necessary with the ultimate aim of protecting the interest of patients and promoting a more rational use of drugs.

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