

The impact of pharmaceutical promotion on rational prescribing and drug use in Sudan

Ryan Mohammed,
Salah Ibrahim Kheder

Department of Pharmacology,
Faculty of Pharmacy,
National University,
Khartoum, Sudan

Abstract

Background: The relationship between pharmaceutical companies and health-care professionals has become a matter of debate and criticism concerning the real objectives and the potential impact on providing ethical and professional care of medicines. The aim of this study is to investigate the influences of pharmaceutical marketing on perceptions of physicians and pharmacists on their rational prescribing and health profession. **Methods:** A descriptive (noninterventional study), cross-sectional survey study conducted in Khartoum State during the period of September 15, 2013 TO March 20, 2014. Questionnaire was designed for this purpose and distributed to physicians and community pharmacists on a random basis. **Results:** Of the 200 doctors surveyed, 77 (38.5%) were physicians and 123 (61.5%) were pharmacists. Nearly 53.8% of physicians and 44.6% of pharmacists thought that they moderately influenced personally by pharmaceutical promotion. The main factors that affecting the prescribing behavior of physicians through their practice were product safety and effectiveness, i.e., 83 (76.9%) and the frequent visits by medical representatives about 54 (50.0%). While the main factors making the pharmacists ordering the product that is they have been prescribed 85 (78.7%) and the quality of the product 68 (63.0%). **Discussion:** The study shows that a variety of techniques were used to influence the prescribing and use of medicines such as free medical samples, gifts, journals, and direct marketing. The key role of these techniques is to increase the number of prescriptions. However; many health professionals underestimate the effects of pharmaceutical promotion on their beliefs and professional practice and believe that they are not personally influenced by promotion. **Conclusion:** The current quantitative study strongly suggests that the absence of regulated pharmaceutical promotion and competition results in the negative influence in the professional behavior and thus rational prescribing and use of medicines.

Key words: Pharmaceutical promotion, rational prescribing, rational use, Sudan

INTRODUCTION

Pharmaceutical marketing is a unique as decision-making of buying of medicine lies in the hand of intermediate

Address for correspondence:

Dr. Salah Ibrahim Kheder, Faculty of Pharmacy,
National University, Khartoum, Sudan.
E-mail: isra-su@outlook.com

customer (doctor) rather than final customer (patient). Thus, pharmaceutical companies try to influence the customer (doctor) rather than the final customer (patient). Hence, doctors are the most important players in pharmaceutical marketing system. Doctors write the prescriptions that determined which drugs (brands) will be used by consumer (patient). Thus, influencing the doctor is a key to the pharmaceutical sales. Pharmaceutical

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DOI:

10.4103/summ.summ_2_17

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How to cite this article: Mohammed R, Kheder SI. The impact of pharmaceutical promotion on rational prescribing and drug use in Sudan. Sudan Med Monit 2017;12:19-23.

companies try to influence prescription pattern on favor of their brands by offering various kinds of promotion inputs such as samples, gifts, travel subsidies, and sponsorships.^[1]

The relationship between pharmaceutical companies and health-care professionals has become a matter of debate and criticism concerning the real objectives and the potential impact on providing ethical and professional care of medicines.^[2,3] The ethical criteria for medicinal drug promotion set a standard to support and encourage the improvement of health care through the rational use of medicinal drugs by encouraging the appropriate use of pharmaceutical products by presenting them objectively and without exaggerating their properties.^[4] If promotion leads to better prescribing, more rational use of medications or improved cost-effectiveness, then there would be no concern. While the evidence is not conclusive, what are all points in the direction of a strong association between reliance on promotion and less appropriate overall use of prescriptions.^[5]

In Sudan, a decree for drug promotion regulation is initiated with promulgation of advertising rules by National Medicines and Poisons Board. However, there are no mechanisms to monitor the drug promotional campaign by pharmaceutical in companies in Sudan, despite the fact that there is enough evidence that the rational drug utilization problems increasingly encountered due to unethical practices of pharmaceutical promotion.^[6,7]

Market research is one tool to monitor consequences of drug promotion and to explore casual relationships between promotion and prescribing and rational drug use of medicines in developing countries. Market research is a process of gathering information to help and make informed decisions about the market business. There are mainly two kinds of research methods: qualitative market research and quantitative market research. Qualitative research is a set of research techniques used in marketing and social sciences, in which data are obtained from relatively small groups of respondents and not analyzed with statistical analysis. This differentiates it from quantities research, in which a large group of respondents provides data that statistically analyzed.

Our study is quantitative market research purposed to investigate the influences of pharmaceutical marketing on perceptions of physicians and pharmacists on their rational prescribing and health profession.

METHODS

This was descriptive (noninterventional study) cross-sectional survey study conducted in Khartoum

State. Two sets of questionnaires were designed for this purpose and distributed to two targeted groups one for physicians in public and private sectors, and the second for community pharmacists on a random basis during the period of September 15, 2013 TO March 20, 2014. Data were collected from 200 respondents, 77 physicians of different professions, and 123 community pharmacists.

Questionnaire for physicians and pharmacists contained thirty questions divided into four sections, Section A composed of eight questions about demographic data, Section B composed of ten questions about the promotional techniques that influences the prescribing/dispensing of medicines, Section C composed of seven questions about the reasons of brand shifting among prescribers and dispensers, and Section D about main source of information and knowledge among five options. Sections B, C, and D were Likert-type scale. Data were entered into Statistical Package for the Social Sciences version 16 SPSS Inc., 233s. (Wacker Drive Chicago, IL 60606-6412 USA) and descriptive analysis was conducted.

RESULTS

Of the 200 doctors surveyed, 77 (38.5%) were physicians and 123 (61.5%) were pharmacists. Majority of them (72%) were female and most of the respondents practicing their work in private health facilities rather than public facilities (125 vs. 75). Higher percent of age was (<30) reflecting younger health-care providers, i.e., 158 (79.4%), thus not married. Different health-care providers had been surveyed, and most of them (91%) graduated from Sudan medical schools and 79.4% (158) practicing their jobs between 1 and 5 years.

Physicians agreed that the most techniques affecting their prescribing behavior were continuous medical education and authentic information (78.2%), followed by advertisement, journals and direct marketing (60.2%), the free samples (57.7%), the public relations as lunch meetings and sponsorship for the conferences (46.2%), and gifts (44.9%). Nearly 53.8% thought that they influenced personally by pharmaceutical promotion, while 71.8% of them thought that their other colleagues influenced by pharmaceutical promotion. Furthermore, 53.8% of physicians thought that they were moderately influenced by medical representatives, whereas 55.10% thought that the medical representative moderately influences the prescribing of other physicians.

On the other hand, pharmacists also agreed that the most techniques affecting their dispensing behavior were continuous medical education and authentic

information (76.1% and 72%, respectively), followed by advertisement, journals, and direct marketing (56.4%), the free samples and public relations as lunch meetings and sponsorship for the conferences (52.2%), and gifts (40.5%). Nearly 49.6% thought that they influenced personally by pharmaceutical promotion, whereas 63.1% of them thought that their other colleagues influenced by pharmaceutical promotion. Furthermore, 44.6% of pharmacists thought that they were moderately influenced by medical representatives, whereas 47.9% thought that the medical representative moderately influences the prescribing of other pharmacists.

Table 1 shows that the main reason for brand shifting among physicians and brand substitution among pharmacists was the price. Other reasons were therapeutic effectiveness, availability, and affordability of shifted or substituted brand to the patient.

The trade name, indications, dose, and generic name were almost always mentioned as products attributes as compared to drug interactions, contraindications, and precautions to the doctors [Figure 1].

Tables 2 and 3 summarize that the factors drives physicians in prescribing decision and pharmacists in ordering the product. The main factors that affecting the prescribing behavior of physicians through their practice were product safety and effectiveness, i.e. 83 (76.9%) and the frequent visits by medical rep about 54 (50.0%). While the main factors making the pharmacists ordering the product that is they have been prescribed 85 (78.7%) and the quality of the product 68 (63.0%).

The sources of information for updating doctors knowledge were conferences and continuous educational programs

72 (92%), journals and textbooks 66 (86%), and internet 63 (81%). The sources of information for updating pharmacists knowledge were internet 94 (78%) and conferences and continuous educational programs 89 (74%).

DISCUSSION

Many pharmaceutical promotional factors influenced the rational prescribing and dispensing of medicines by physicians and pharmacists, respectively. However, each professional has own agenda, oftentimes creates a conflict of interest. Conflicts of interest can arise from financial ties between profession and pharmaceutical company. Such ties include honorariums for writing or selling a company's product, conference sponsorships, and the supporting of scientific events.

Our study shows that a variety of techniques were used to influence the prescribing and use of medicines such as free medical samples, gifts, journals, and direct marketing. The key role of these techniques is to increase the number

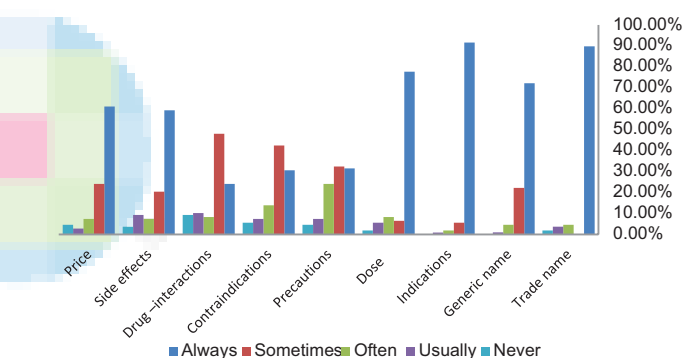


Figure 1: The frequency of product attributes promoted to the doctors by medical representatives

Table 1: Reasons for brand shifting among physician and brand substitution among pharmacists

Brand shifting/substitution reasons	Profession	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)
Price	Physician	3 (3.8)	4 (5.1)	4 (5.1)	35 (44.90)	32 (41.0)
	Pharmacist	9 (7.4)	9 (7.4)	5 (4.1)	58 (47.9)	40 (33.1)
Therapeutic effectiveness	Physician	1 (1.3)	6 (7.7)	8 (10.3)	35 (44.9)	28 (35.9)
	Pharmacists	5 (4.1)	13 (10.7)	11 (9.1)	54 (44.6)	38 (31.4)
Persistence of the medical representative	Physician	5 (6.4)	24 (30.8)	15 (19.2)	27 (34.6)	7 (9.0)
	Pharmacists	8 (6.6)	38 (31.4)	24 (19.8)	41 (33.9)	10 (8.3)
Promotional effort of the company (gifts, samples, bonus, conferences, etc.)	Physician	7 (9.0)	24 (30.8)	17 (21.8)	20 (25.6)	10 (12.8)
	Pharmacists	15 (12.4)	39 (32.2)	11 (9.1)	42 (34.7)	14 (11.6)
Clinical trials and scientific data submitted for replaced brand	Physician	2 (2.6)	3 (3.8)	11 (14.1)	47 (60.3)	15 (19.2)
	Pharmacists	4 (3.3)	12 (9.9)	18 (14.9)	67 (55.4)	20 (16.5)
Availability of shifted or substituted brand	Physician	5 (6.4)	5 (6.4)	8 (10.3)	49 (62.8)	11 (14.1)
	Pharmacists	5 (4.1)	6 (5.0)	15 (12.4)	62 (51.2)	33 (27.3)
Affordability of shifted or substituted brand to the patients	Physician	2 (2.6)	7 (9.0)	8 (10.3)	41 (52.6)	20 (25.6)
	Pharmacists	2 (1.7)	12 (9.9)	15 (12.4)	55 (45.5)	37 (30.6)

Table 2: Factors affecting the prescribing behavior of physicians

Factors	Always (%)	Sometimes (%)	Often (%)	Usually (%)	Never (%)
Level of facility	10 (9.3)	59 (54.6)	12 (11.1)	13 (12.0)	14 (13.0)
Name of company	22 (20.4)	38 (35.2)	25 (23.1)	10 (9.3)	13 (12.0)
Samples	27 (25.0)	38 (35.2)	28 (25.9)	9 (8.3)	6 (5.6)
Giveaways (gifts)	23 (21.3)	39 (36.1)	33 (30.6)	9 (8.3)	4 (3.7)
Frequent visits	54 (50.0)	40 (37.0)	11 (10.2)	0	3 (2.8)
Personal relations	21 (19.4)	41 (38.0)	12 (11.1)	12 (11.1)	22 (20.4)
Product safety and effectiveness	83 (76.9)	17 (15.7)	3 (2.8)	5 (4.6)	0
Product price	37 (34.3)	58 (53.7)	9 (8.3)	3 (2.8)	1 (0.9)
Relation with the agent and distributor	5 (4.6)	24 (22.2)	18 (16.7)	25 (23.1)	36 (33.3)
Medical rep personality	36 (33.3)	48 (44.4)	11 (10.2)	9 (8.3)	4 (3.7)

Table 3: Factors affecting the pharmacist in ordering a product

Factors	Always (%)	Sometimes (%)	Often (%)	Usually (%)	Never (%)
They are prescribed	85 (78.7)	18 (16.7)	1 (0.9)	4 (3.7)	0
The bonus offer	31 (28.7)	70 (64.8)	4 (3.7)	2 (1.9)	1 (0.9)
The credit facilities	19 (17.6)	62 (57.4)	18 (16.7)	8 (7.4)	1 (0.9)
Personal relationship	15 (13.9)	55 (50.9)	20 (18.5)	11 (10.2)	7 (6.5)
The relation with the agent or distributor	7 (6.5)	40 (37)	22 (20.4)	25 (23.1)	14 (13.0)
Quality of the product	68 (63.0)	20 (18.5)	10 (9.3)	7 (6.5)	3 (2.8)
Drug - interactions	17 (15.7)	71 (65.7)	13 (12.0)	5 (4.6)	2 (1.9)
Service offered	11 (10.2)	20 (18.5)	31 (28.7)	31 (28.7)	15 (13.9)
Price	37 (34.3)	57 (52.8)	7 (6.5)	5 (4.6)	2 (1.9)

of prescriptions. Half and more than half of the health professionals agreed that most of the techniques used by pharmaceutical companies affecting their prescription and dispensing behavior. Free samples and gifts' effect in influencing the prescribing behavior of doctors is very well documented.^[8-10] However, many health professionals underestimate the effects of pharmaceutical promotion on their beliefs and professional practice and believe that they are not personally influenced by promotion (physicians 53.8% and pharmacists 49.6%), but that their colloquies are affected (physicians 71.8% and pharmacists 63.1%), similar results were obtained by Steinman *et al.*^[11] Psychologists have found that it is normal for people to believe that only other people are vulnerable to being misled by promotional techniques. This called the illusion of unique invulnerability.^[12]

More than half of physicians (53.8%) and less than half of pharmacists (44.6%) thought that they were moderately influenced by medical representatives. Many observational studies have found an association between prescriber reliance on medical representatives and more frequent or lower quality prescribing.^[13,14] Furthermore, the more a prescriber has contact with medical representative, the more likely to recommend that a medicine is added to the hospital formulary.^[15]

It is obvious from examining [Figure 1] that safety information is systemically ignored from medical

representatives. In case of new drugs, heavy promotion leads to widespread prescribing and use before the safety profile of these products is fully understood. Newer, more expensive medicines displace older, less expensive ones without any evidence of an improvement in therapeutic outcomes. For the prescribing doctor to practice rational prescribing and the pharmacists to recommend to and advise patients on proper use of prescribed pharmaceuticals, both have to have a caliber of information that is "accurate, truthful, informative, balanced, up-to-date, capable of substantiation, and in good taste."^[16]

CONCLUSION

The current quantitative study strongly suggests that the absence of regulated pharmaceutical promotion and competition results in the negative influence in the professional behavior and thus rational prescribing and use of medicines. It also draws the attention to the current situation and consequences with the hope that it might result in the establishment of enforced regulation polices and interventions to control drug promotion.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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