



ORIGINAL ARTICLE

# Pharmacists' and physicians' perception and exposure to drug promotion: A Saudi study



Noha M. Zaki \*

Department of Pharmaceutics and Pharmaceutical Technology, College of Pharmacy, Taif University, Taif, Saudi Arabia

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## KEYWORDS

Drug promotion;  
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**Abstract** *Introduction:* Drug promotion has to contribute to a more rational use of drugs. Concerns arise if promotion negatively influences prescribing/dispensing pattern. It is warranted to assess exposure and attitudes to, and acceptance of, drug promotion among pharmacists and physicians.

*Methodology:* Adopting a randomized, multiple site and cross-sectional survey study, questionnaires ( $n = 250$ ) were completed by physicians and pharmacists to investigate the exposure, acceptance or skepticism of Saudi physicians/pharmacists to drug promotion as well as their perception of the appropriateness of gifts and to check if they had any teaching/training about dealing with medical representatives (MRs) and Pharma promotion.

*Results:* Significantly more pharmacists than physicians (32% vs. 23%;  $p < 0.05$ ) reported being taught or educated about the ethics of drug promotion. The experience level was significantly associated with the teaching or training that the physicians and pharmacists received. Conference registration fees and drug samples were the most appropriate promotional gift for the physicians (67% and 66%, respectively;  $p < 0.01$ ) whereas for pharmacists, the drug sample was considered the most suitable donation (79%). More pharmacists perceived drug companies as a useful way to gain knowledge about drugs than physicians (75% vs. 65%;  $p < 0.01$ ). A higher proportion of both groups were accepting drug promotion than those skeptical about it.

*Conclusion:* The majority of physicians or pharmacists participating in this study have received gifts from pharmaceutical companies. The drug samples and printed educational materials are the

\* Tel.: +966 595230971.

E-mail addresses: [noha@tu.edu.sa](mailto:noha@tu.edu.sa), [drnohazaki@gmail.com](mailto:drnohazaki@gmail.com), [anm1998@lycos.com](mailto:anm1998@lycos.com).

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most widely accepted gifts. Recent graduates and those with few years of experience had higher teaching/training than experienced physicians and pharmacists in pharmaceutical promotion ethics and tactics to deal with MRs. On the other hand, experienced healthcare team were more approached and targeted by pharmaceutical companies and MRs. It is highly recommended to implement courses/discussion groups on the ethical interaction between healthcare professionals and pharmaceutical companies in the curriculum of both pharmacy and medicine. Updating the physicians and pharmacists after graduation, as part of continued medical/pharmacy education, will eventually improve the healthcare professionals' capability to act to the patients' welfare.

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## 1. Introduction

Drug promotion refers to all informational and persuasive endeavours by manufacturers and distributors, ultimately leading to provoke the supply, purchase and/or use of medications (WHO, 1998). Drug promotion has been suggested so that healthcare professionals have access to information they need about medicine and that medicines are prescribed and used in the welfare and benefit of patients.

It was estimated that the pharmaceutical promotion and marketing expenditure in the USA, in 2000 was \$15.7 billion which was 20–30% of sales turnover and 2- to 3-times that of research and development (National Institute for Health Care Management, 2001). Half of this expenditure is directed to the price of medicine samples (50.3%) and detailing visits to physicians (25.5%).

Physicians prescribe drug products that are called “prescription drugs” whereas the pharmacists dispense non-prescription drugs or “over-the counter medications; OTC”. The detailing visits of medical representatives (MRs) to physicians and pharmacists combined with other promotional activities such as gifts, sponsored meetings and advertising might affect the attitudes towards the drug company and its medical products.

Communications and interactions between pharmaceutical companies and physicians/pharmacists regarding drug promotion and marketing have been lately the focus of interest from an ethical point of view. These interactions are pervasive and often influential and beneficial for the patient but they may turn into some undesirable consequences (Hall et al., 2006). Concerns are about if drug promotion is inducing doctors to prescribe specific drugs, if it is driving pharmacists to dispense expensive drugs when less expensive drugs might be better in some cases, and if it leads to the inappropriate clinical use of some drugs (Lexchin, 1993).

Previous research indicated that doctors/pharmacists who receive gifts are more positive towards the company and more likely to prescribe/dispense the company's products (Ashker and Burkiewicz, 2007; Banks and Mainous, 1992; Brett et al., 2003). It has been suggested that physicians who rely on drug company information, through drug detailers (MRs) or promotional literature, prefer expensive brands, adopt newer medicines more quickly, show more inappropriate prescribing and write more prescriptions than their colleagues (Lexchin, 1993). Ethical concerns have been raised about the impact that the pharmaceutical companies may have on physicians and pharmacists and the outcome it could bring on their prescribing and dispensing practice if they got used

to receiving gifts (Adair and Holmgren, 2005; Brett et al., 2003) and growing positive attitudes and a feeling of commitment towards pharmaceutical companies (Rogers et al., 2004; Rosner, 2000; Wazana, 2000). A very recent Saudi study by Alosaimi et al. indicated that gift acceptance is familiar for physicians working in Saudi Arabia (Alosaimi et al., 2013). We expanded this by comparing the perception of physicians and pharmacists towards gifts from Pharma Industry.

The aim of the present study is to investigate the exposure, acceptance or skepticism of physicians/pharmacists to drug promotion as well as their perception of the appropriateness of gifts and to determine if physicians/pharmacists (especially the new graduates) have had any teaching/training during their study about dealing with medical representatives and Pharma promotion.

## 2. Methodology

### 2.2. Survey development and distribution

A self-administered questionnaire was developed both in paper as well as in electronic form (attached; Appendix A) ([https://docs.google.com/forms/d/1h3ww\\_Vu5W8fGbKazt8v0KV8oM9IeTjS-pGSPKuQv07Y/viewform](https://docs.google.com/forms/d/1h3ww_Vu5W8fGbKazt8v0KV8oM9IeTjS-pGSPKuQv07Y/viewform)). The survey was conducted from September to November 2013. Results were anonymous, all items are obligatory to fill. Completion of the survey was tracked with 3 reminders sent out at approximately 3-week interval. Physicians and pharmacists were queried on 5 drug promotion-related issues namely: (1) demographic information about the physician/pharmacist (age, gender, nationality and residence); (2) exposure to training about drug company promotion and interactions, and encounters with pharmaceutical representatives; (3) exposure to different drug company interactions and gifts and the number of times they participated in these interactions; (4) perceptions of appropriateness of various drug company gifts assessed on a 12 item, 3-point scale (appropriate, inappropriate, and neutral); and (5) attitudes about pharmaceutical promotion measured as agreement with 9 statements (5 revealing acceptance of drug promotion and 4 revealing skepticism) on a 3-point scale (agree, disagree, and neutral).

### 2.3. Study design

The design was a randomized, multiple site and cross-sectional survey. The study conformed to the ethical principles of the

National Committee of Medical & Bioethics, King Abdul-Aziz City for Science and Technology (KACST), Riyadh, KSA.

#### 2.4. Data collection

More than 400 questionnaires were distributed. Response rate was 63%.

#### 2.5. Setting

Visits were performed at hospitals, health centres and pharmacies. Physicians from all specialities and community pharmacists were included.

#### 2.6. Data analysis

The level of agreement with statements was determined by combining and comparing those who responded “Disagree” and “Neutral” to those who “Agree”. Similarly those who responded “Inappropriate” and “Neutral” were combined and compared to those who reported “Appropriate”.

#### 2.7. Statistical analysis

SPSS v. 16.0\* statistical software (SPSS Inc., Chicago, USA) was used. The Chi-square test was used for comparison of proportions while Student’s *t*-test was used in case of continuous data. The significance level was set as  $p < 0.05$  unless otherwise stated.

### 3. Results

A total of 250 staff completed the questionnaires, of these, 137 physicians and 113 pharmacists participated in the study (Table 1). A significant ( $p < 0.05$ ) majority of the respondents were males (59.2%) and the rest (40.8%) were females. The greatest proportion of the participants was young age (20–29 years old) physicians and pharmacists (43.2%), Saudi nationals (44%), with 1–5 years of experience (48.4%) who live in urban areas (66%); significant at  $p < 0.05$ . This was attributed to the inclusion of newly graduated male students from College of Medicine and College of Pharmacy, Saudi Arabia.

#### 3.1. Exposure

Almost all of the physicians and pharmacists (99.5%) reported participation in at least one of the mentioned promotional activities offered by pharmaceutical drug companies. As shown in Table 2, higher percentages of physicians than pharmacists were exposed to gifts from Pharmaceutical companies. Glossy advertisement materials (62%) and free drug samples (42%) were the gifts most commonly received by physicians whereas pharmacists reported that the most frequent gifts they received from pharmaceutical companies were non-educational gifts (24.8%), meals (20%) and glossy adverts (18%).

#### 3.2. Education/training

Table 3 shows that significantly more ( $p < 0.05$ ) pharmacists (32%) than physicians (23%) reported being taught or edu-

**Table 1** Socio-demographic characteristics ( $n = 250$ ).

Characteristics	Number of participants (%)
<i>Occupation</i>	
Physician	137 (54.8)
Pharmacist	113 (45.2)
<i>Gender</i>	
Male	148 (59.2)
Female	102 (40.8)
<i>Age</i>	
20–29	108 (43.2)
30–39	76 (30.4)
40–49	44 (17.6)
> 50	22 (8.8)
<i>Nationality</i>	
Saudi	110 (44)
Egyptian	100 (40)
Sudanese	9 (3.6)
Jordanian	6 (2.4)
Syrian	6 (2.4)
Indian	9 (3.6)
Pakistanis	3 (1.2)
Others	2 (0.8)
<i>Years of experience</i>	
1–5	121 (48.4)
5–10	55 (22)
> 10	74 (29.6)
<i>Residence</i>	
Rural	86 (34.4)
Urban	164 (65.6)

cated about the ethics of drug promotion as well as having personal friendship with medical representative (MRs) 32% as compared to 28% of physicians ( $p < 0.01$ ). On the other hand, significantly higher percent of physicians (34%) mentioned of being contacted by MRs within pharmacy ward and within Health Sciences Center ( $p < 0.01$ ). Insignificant difference ( $p < 0.01$ ) was revealed between physicians and pharmacists in teaching about how to interpret drug promotional material or how to deal with MRs.

Among the different demographic properties, the experience level was significantly associated with the teaching or training that the physicians and pharmacists received. Fig. 1 reveals that a higher number of newly graduated physicians and pharmacists (with 1–5 years of experience only) have received teaching in their studies about the ethics and how to handle drug promotion even though they might have had a friendship with MRs. On the other hand, experienced physicians and pharmacy staff were the one most commonly approached by MRs (41% vs. 32%;  $p < 0.01$ ).

#### 3.3. Appropriateness of gifts

As shown in Fig. 2, the promotional gifts most appropriate in the opinion of the majority of physicians were conference registration fees and free drug samples (67% and 66%, respectively;  $p < 0.01$ ). Whereas for pharmacists, Fig. 3 shows that the drug sample was the most suitable donation (79%) followed by text book (67%) and notepad (63%) ( $p < 0.05$ ). Interestingly, expensive gifts (> 50 SAR or 20 to 150 SAR) were considered to be the least appropriate by the participants

**Table 2** Proportion of physicians and pharmacists receiving different promotional gifts from pharmaceutical companies.

Activity/gift	Proportion exposed to/participated in drug promotion by pharmaceutical companies			
	Physician		Pharmacist	
	<i>N</i>	%	<i>N</i>	%
Participated in meals	29	21.2	23	20.4
Received non-educational gift	38	27.7	28	24.8
Received reprint/glossy advert	85	62.0	20	17.7
Received personal drug sample	57	41.6	15	13.3
Taken part in social outing	25	18.2	9	8.0
Received book	10	7.3	11	9.7
Participated in workshop	17	12.4	10	9.5
Conference registration fee paid	14	10.2	8	7.1
Participating in research project	5	3.6	7	6.2
Received stethoscope	14	10.2	–	–

**Table 3** Physicians and pharmacists trained or educated about drug promotion or contact with MRs.

	Number (%) of participants saying "yes"		Fisher's exact test ( <i>p</i> )
	Physician	Pharmacist	
Have you received any teaching in your studies about the ethics or effects of drug company promotion	57 (22.8%)	79 (31.6%)	0.02
Have you ever received any teaching in your studies about how to handle or interpret drug promotional material and/or MRs?	60 (24%)	64 (25.6%)	0.05
Do you have a personal friendship with MRs?	70 (28%)	82 (32%)	0.02
Have you ever been approached by MRs whilst being pharmacy placement/ward round	85 (34%)	46 (18.4%)	0.001
Have you ever been approached by MRs within the Health Sciences Center	85 (34%)	44 (17.6%)	0.001

of both groups (18% physicians and 21% pharmacy staff). Generally, there was a similar pattern in perception of both groups about the appropriateness of gifts but with different proportions in each group (insignificant difference at  $p < 0.05$ ).

### 3.4. Acceptance and skepticism attitudes towards drug promotion

The perception of physicians and pharmacists towards pharmaceutical promotion is shown in Figs. 4 and 5 respectively. At a glance, the data revealed almost the pattern in both groups with higher proportion accepting drug promotion than those skeptics about it.

By thoroughly analysing the data in the 2 groups, it was obvious that significantly more pharmacist participants perceived drug companies as a useful way to gain knowledge about drugs than physicians (75% vs. 65%;  $p < 0.01$ ). Likewise, this trend was observed in statements about pharmaceutical companies' talks being educational and helpful and the information given by MRs as being trustworthy. Nevertheless, statements about minimal effects gifts have on staff got higher agreement percent among physicians than pharmacists (20% vs. 14%;  $p < 0.05$ ).

Regarding the skeptic attitude of both pharmacists and physicians, by comparing Figs. 4 and 5 it was obvious that

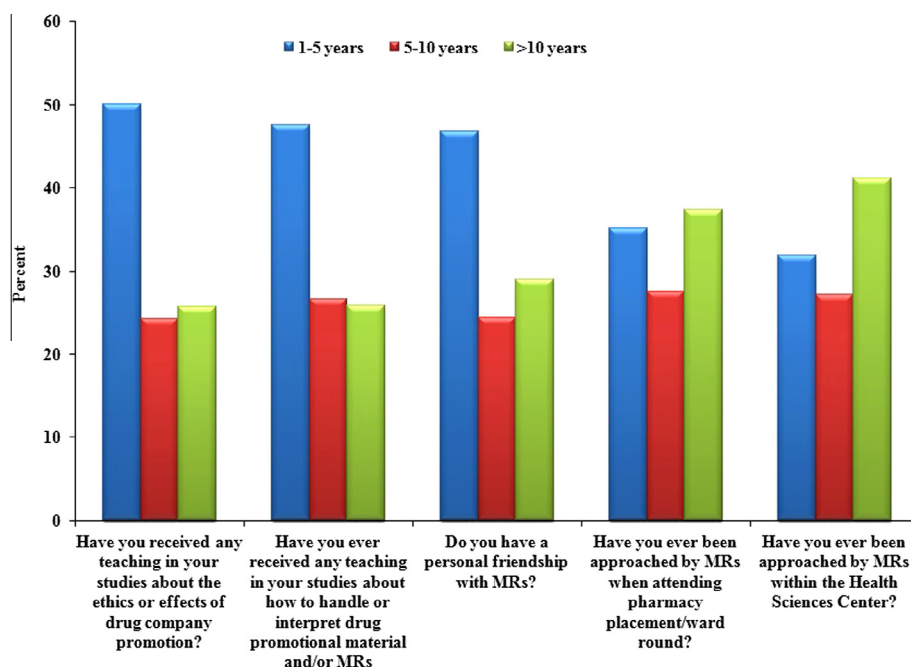
higher degree of skepticism was revealed by pharmacists than by physicians. More supporters from pharmacists than from physicians to statements about drug companies acting unethically (39% vs. 31%), increased prescribing/dispensing of certain drugs (49% vs. 34%) and higher prices of medication as a consequence of getting gift (36% vs. 37%) were found.

The greatest response (>58%) of both physicians and pharmacists agreed that most drug company talks are biased (63% vs. 58%, respectively; mean agreement score 1.8 vs. 2;  $p < 0.05$ ), there was other indication that they were otherwise skeptical of pharmaceutical promotion.

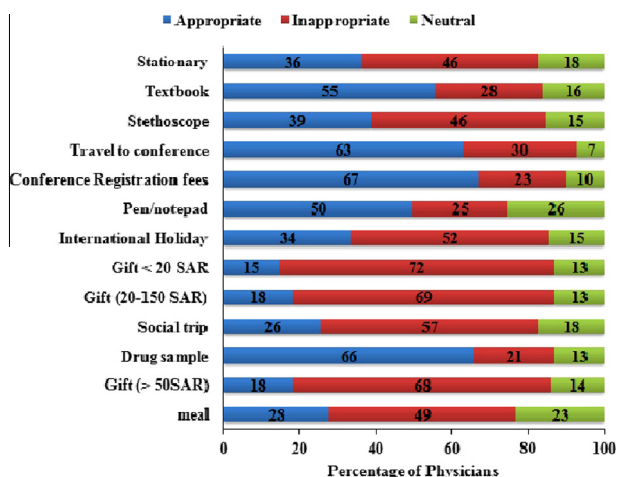
## 4. Discussion

The impact of pharmaceutical promotion on prescribing and dispensing medicaments cannot be disregarded or overlooked. In the USA, pharmaceutical industries use gifts to physicians as marketing strategy (McFadden et al., 2007). It is of paramount interest to prepare healthcare professionals who deal with drugs (physicians and pharmacists) by training and educating them with the ethical guidelines for drug promotion (WHO, 1998; IFPMA, 2000) and then to monitor their interaction.

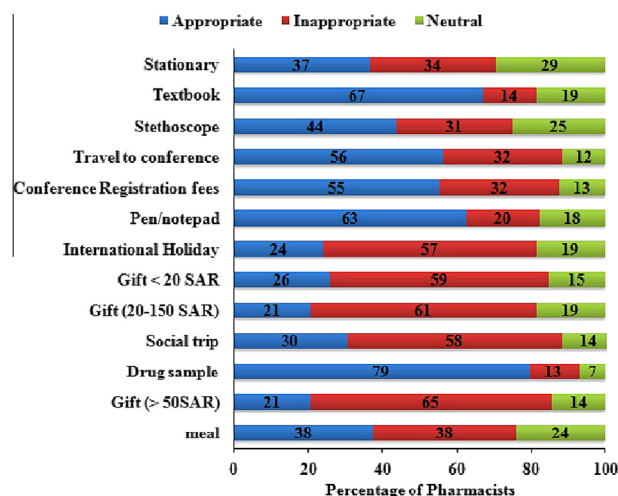
A number of studies have investigated perceptions towards the potential influence of MRs on resident and practicing physicians (Lewin-Fetter, 1997; Lexchin, 1993; Lichstein et al., 1992; McKinney et al., 1990) while others examined the views



**Figure 1** Relation between experience of physicians and pharmacists and the teaching they received about drug promotion and exposure to drug promotion. After Chi-square test was applied, only statements where experience years were significantly associated with agreement are shown. Experience 1–5 years, 5–10 years and more than 10 years.



**Figure 2** Perceived appropriateness of promotional gifts as indicated by physicians ( $n = 137$ ).



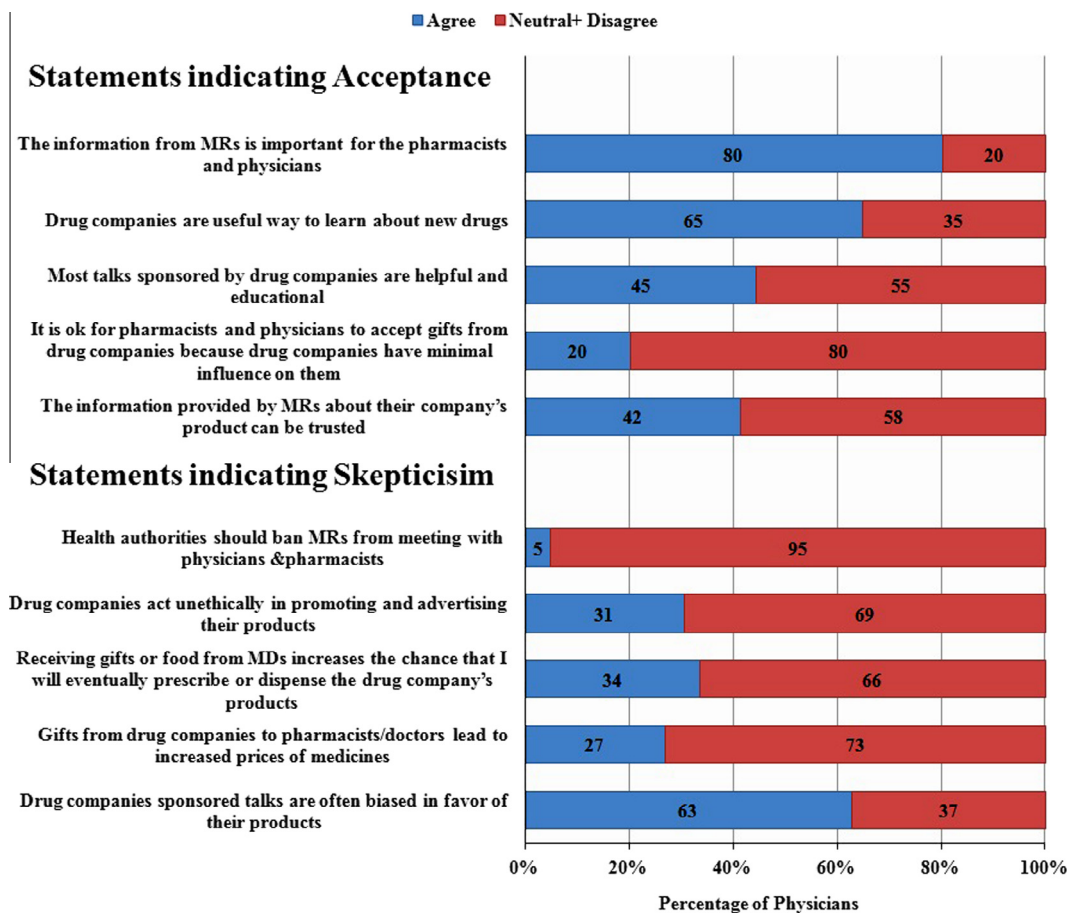
**Figure 3** Perceived appropriateness of promotional gifts as indicated by Pharmacists ( $n = 113$ ).

of medical students (Monaghan et al., 2003; Sarikaya et al., 2009; Sierles et al., 2005; Soyk et al., 2010; Wofford and Ohl, 2005). In Saudi Arabia, only one study examined the variability in accepting different types of gifts by clinical specialty and job rank among physicians (Alosaimi et al., 2013) but none has investigated perception of physicians and pharmacists towards Pharma gifts and the teaching they received so studies addressing the perception of drug promotion are lacking; which makes our study unique. The Saudi FDA (SFDA) has newly published Drug Advertising And Promotion Guidance: Guidance & Requirements Directory of Licensing Pharmaceutical and Herbal Product Advertising (Accessed 18

November, 2013a) and will soon publish Saudi code of pharmaceutical promotional practices in the KSA (Accessed 18 November, 2013b). We have chosen to conduct this study on physicians and pharmacists and to include a large number of newly graduated students from College of medicine and College of Pharmacy (43% of participants in the study).

Our study shows that pharmacists reported greater training on drug promotion ethics and interpretation than physicians. This could be due to that drug marketing and promotion is one career for pharmacists whereas physicians are the prime targets of marketing. This is in agreement with Mintzes who reported that pharmacy schools tend to devote more time to





**Figure 4** Physicians' acceptance and skepticism towards drug promotion by pharmaceutical companies and/or MRs ( $n = 137$ ).

teaching on drug promotion than physicians schools (Mintzes, 2005). However, it contradicts a study done on students in Kuwait which shows that physicians students have more education in this regard (Ball and AL-Manea, 2007).

Almost all the participants in this study reported receiving gifts from pharmaceutical companies. Nevertheless physicians remarkably reported greater exposure than pharmacists. This is due to that industrial companies realize that physicians can be the powerful advocates for their products but raises concerns regarding conflict-of-interest at medical centres. Regarding the appropriateness of gifts, gifts were considered appropriate by the staff with least percent given to expensive gifts (> 50 SAR) whereas stationary, educational gifts and drug samples have the greatest percentage of supporters. The participants in our study hence perceive such less costly promotional gifts from industry, to be beneficial to patients. Previous studies similarly revealed that accepting low-cost gifts such as free drug samples, stationary, and free meals was more frequent than accepting higher-price gifts. (Halperin et al., 2004; Lieb and Brandtonies, 2010; McNeill et al., 2006; Misra et al., 2010; Saito et al., 2010).

The finding that the experience level was significantly associated with the teaching or training received by physicians and pharmacists might be attributable to that new generations have been exposed to updated curricula in Medicine and PharmD programmes implemented in University that complies with international guidelines. On the other hand older generations might have not received such teaching in their undergrad-

uate studies especially in the absence of formal ethical codes governing pharmaceutical promotion in SA and the relationships between health professionals and pharmaceutical industry (soon to be published by SFDA) or that the skills for interacting with MRs may not have been integrated as part of the traditional medical /pharmacy college curriculum. Appropriate curriculum of future health professionals is crucial to get them ready to play their role as physicians and pharmacists, in making or influencing drug-related decisions in the face of medication promotion as well as to prepare them for ethical interaction with drug companies or MRs as per the guidelines (Accessed 16 November, 2013a,b; WHO, 1998). Innovative teaching strategies involving medical representatives (MRs) or promotional material have been demonstrated to bring constructive perception and skills in interpreting promotional information (Wilkes and Hoffman, 2001). It is noteworthy that Alosaimi et al. reported no significant differences in the overall gift acceptance by job rank (Consultant, Specialist, resident) but significant differences in type-specific gift acceptance by job rank and specialty (Alosaimi et al., 2013).

High percentage of staff perceived information from pharmaceutical companies /MRs to have educational value. Although both pharmacists and physicians mostly felt that drug company sponsored talks were biased in favour of the company's product(s), they did not appear to restrict contact with MRs nor to feel that they would be improperly affected in their professional practice. The finding that the experience

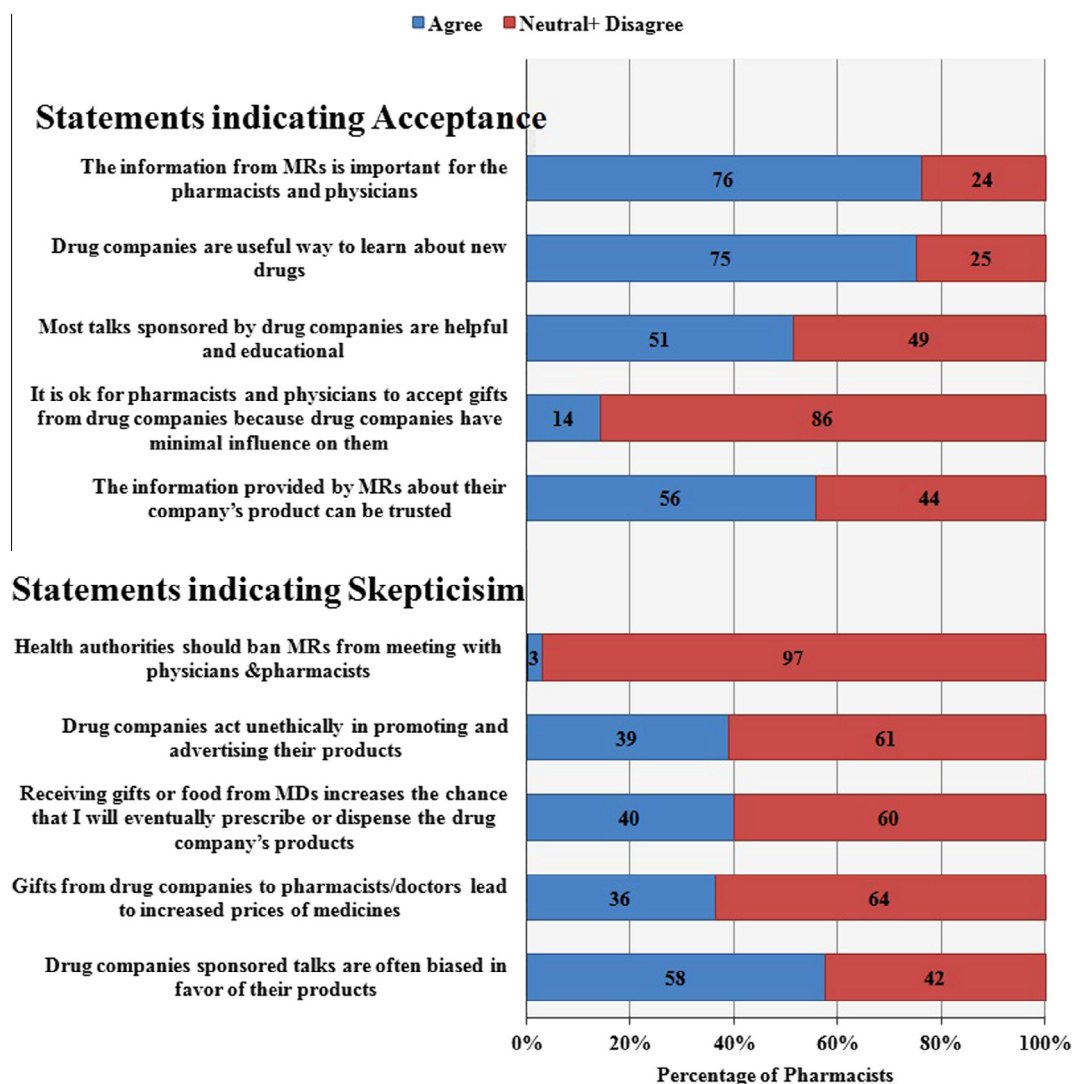


Figure 5 Pharmacists' acceptance and skepticism towards drug promotion by pharmaceutical companies and/or MRs ( $n = 113$ ).

level was significantly associated with the physicians' and pharmacists' perception about drug promotion by MRs or pharmaceutical companies with wider acceptance among young professionals with 1–5 years of experience might be attributed to awareness and preparedness they gained from their college studies. Similar findings were recently reported in the literature (Ball and AL-Manea, 2007; Sierles et al., 2005, 2009; Soyk et al., 2010). The low degree of skepticism, while recognizing that there is a bias in drug company information, suggests that the staff may not realize the influence that exposure to drug promotion can have on their professional behaviour.

Based on the findings here, it is recommended to implement courses/discussion groups on the ethical interaction between health professionals and pharmaceutical companies in the formal curriculum of both pharmacy and medicine. In addition, the physicians and pharmacists after graduation should be updated, as part of continued medical/pharmacy education, to improve the health professionals' capability to act in the best interests of patients.

## 5. Conclusion

The majority of physicians or pharmacists participating in this study have received gifts from pharmaceutical companies. The drug samples and printed educational materials are the most widely accepted gifts. Recent graduates and those with few years of experience had higher teaching/training than experienced physicians and pharmacists in pharmaceutical promotion ethics and tactics to deal with MRs. On the other hand, experienced healthcare team were more approached and targeted by pharmaceutical companies and MRs. Further research should study the implementation of education about ethical promotion and appropriate interaction with MRs in the formal curriculum of both pharmacy and medicine programs as well as in continued medical/pharmacy education, to improve their ability to act in the best interests of patients, promote the rationale use of drugs and avoid conflict-of-interest.

**Appendix A.**

*A.1. Exposure and attitude to drug promotion, Saudi Study*

Consent statement: This survey is conducted to study exposure and attitudes to, and acceptance of, drug promotion among pharmacy and medical staff. The collected information will *anonymously* recorded (no need to write your name) and only used for research purposes. As we go through the questionnaire, please feel free not to answer if you do not wish to give additional information. Your cooperation is highly appreciated.

*A.2. (Please fill in the required information and ONLY TICK THE MOST YOU THINK IS THE RIGHT ANSWER)*

- 1- Serial no.: .....
- 2- Gender: Male ( ) - Female ( )
- 3- Age: .....
- 4- Nationality: .....
- 5- Residence: Rural ( ) - Urban ( )
- 6- Occupation: medical ( ) Pharmacy ( )
- 7- Years of professional experience: 1-5 ( ) , 5-10 ( ) , more than 10 ( )
- 8- Have you received any teaching in your studies about the ethics or effects of drug company promotion? Yes ( ) No ( )
- 9- Have you ever received any teaching in your studies about how to handle or interpret drug promotional material and/or drug representatives (pharmaceutical company agents)? yes ( ) No ( )
- 10- Do you have a personal friendship with a medical representative? Yes ( ) No ( )
- 11- Have you ever been approached by Pharmaceutical company representatives when attending pharmacy placement/ward round? Yes ( ) No ( )
- 12- Have you ever been approached by pharmaceutical company representatives within the Health Sciences Center? Yes ( ) No ( )

*A.3. Please fill the most accurate selection (tick only one)*

		Agree	Disagree	Neutral
1	The information provided by drug representatives about their company's product can be trusted			
2	The information from drug representatives is important for the pharmacy and medical staff			
3	It is ok for pharmacy and medical staff to accept gifts from drug companies because drug companies have minimal influence on staff			
4	Most talks sponsored by drug companies are helpful and educational			
5	Drug companies are useful way to learn about new drugs			
6	Drug companies sponsored talks are often biased in favor of their products			
7	Gifts from drug companies to pharmacists/doctors lead to increased prices of medicines			
8	Receiving gifts or food from pharmaceutical representatives increases the chance that I will eventually sell or recommend/prescribe the drug company's products			
9	Drug companies act unethically in promoting and advertising their products			

*A.4. Indicate the appropriateness of the promotional gift by ticking one choice*

		Appropriate	Inappropriate	Neutral
1	Meal			
2	Gift (> 50SAR)			
3	Drug sample			
4	Social trip			
5	Gift (20-150 SAR)			
6	Gift < 20 SAR			
7	International Holiday			
8	Pen/notepad			
9	Conference Registration fees			
10	Travel to conference			
11	Stethoscope			
12	Textbook			
13	Stationary			
14	Others .....			

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