Acceptance of pharmaceutical gifts

Variability by specialty and job rank in a Saudi healthcare setting

Fahad Alosaimi, *MD,* ***Abdulaziz AlKaabba,*** *MD,* ***Mahdi Qadi,*** *MD,* ***Abdullah Albahlal,*** *Medical Student,*
Yasir Alabdulkarim, *Medical Student,* ***Mohammad Alabduljabbar,*** *Medical Student,* ***Faisal Alqahtani,*** *Medical Student.*

ABSTRACT

الأهداف: استقصاء مدى التباين في حجم قبول الأطباء العاملين في السعودية لهدايا شركات الأدوية حسب نوعية تخصصاتهم أو رتبهم الوظيفية.

الطريقة: تم إجراء دراسة مقطعية بين شهري مارس ويوليو من عام 2012م في مناطق مختلفة من السعودية .وقد تم تصميم استبيان الدراسة ثم وزع على المشاركين إلكترونيًا وورقيًا.

النتائج: أقر (80.1%) من عينة البحث البالغة 281 طبيبًا بقبولهم لهدايا شركات الأدوية. ولم يرتبط معدل هذا القبول للهدايا بتخصص معين ولا برتبة وظيفية محددة. وأكثر هذه الهدايا شيوعًا كان عينات الدواء المجانية بنسبة (58.2%)، ثم المستلزمات المكتبية بنسبة (52.9%)، ثم الوجبات المجانية بنسبة (37.8%)، ثم الدعم المادي لحضور النشاطات التعليمية بنسبة (33.3%). وقد تباينت التخصصات الطبية فيما بينها بالنسبة لنوع الهدايا المقبولة وكذلك أسباب قبول هذه الهدايا.

الخاتمة: أظهرت هذه الدراسة ارتفاع معدل قبول الأطباء العاملين في السعودية لهدايا شركات الأدوية وإن لم يرتبط بتخصص طبي معين ولا برتبة وظيفية محددة، لكن تباينت التخصصات الطبية فيما بينها بالنسبة لنوع الهدايا المقبولة وكذلك أسباب قبول هذه الهدايا.

Objectives: To examine the variability in accepting different types of gifts by clinical specialty as well as job rank among physicians working in Saudi Arabia.

Methods: This cross-sectional study was carried out between March and July of 2012 in different regions of Saudi Arabia. A self-administrated questionnaire was developed and administered to all participants, both in paper and electronic formats.

Results: A total of 281 participants answered the question "do you accept pharmaceutical gifts and/or promotions?" Most of the participants (80.1%) admitted acceptance of pharmaceutical gifts of any type. The most common gifts accepted were free drug samples (58.2%), stationary items such as pens and notepads (52.9%), free meals (37.8%), financial support to attend educational activities (33.3%), prepaid promotion cards/codes (7.1%), and funding research (5.8%).While there were no significant differences in the overall gift acceptance by job rank or specialty, there were significant differences in type-specific gift acceptance by job rank and specialty. There were some differences in the reasons behind gift acceptance by specialty and job rank.

Conclusion: The results of this study indicate that gift acceptance among physicians working in Saudi Arabia is common; however, there was no significant differences in the overall gift acceptance by job rank or specialty. Nevertheless, there were significant differences in type-specific gift acceptance by job rank and specialty.

Saudi Med J 2013; Vol. 34 (8): 854-860

From the Department of Psychiatry (Alosaimi), the College of Medicine (Albahlal, Alabdulkarim, Alabduljabbar, Alqahtani), King Saud University, the Department of Family Medicine (AlKaabba), Imam Mohammed Bin Saud University, Riyadh, and the Family Medicine (Qadi), King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia.

Received 6th April 2013. Accepted 15th July 2013.

Address correspondence and reprint request to: Dr. Fahad Alosaimi, Department of Psychiatry, King Saud University, PO Box 7805, Riyadh 11472, Kingdom of Saudi Arabia. Tel. +966 (11) 4671226. Fax. +966 (11) 4672571. E-mail: dr.fahad.alosaimi@gmail.com

The global pharmaceuticals market is worth US $300 billion a year. According to the World Health Organization (WHO) estimates, pharmaceutical companies spend approximately one-third of their sales revenue on marketing to maintain high sales of their products.[1] In the last few decades, there has been growing concerns over the influence of pharmaceutical gifts on physicians. These concerns have been raised in a number of studies that linked accepting gifts to the possibility of influenced decisions.[2,3] Moreover, the

conflict of interest between physicians' commitment to patient-centered care and the desire of pharmaceutical companies to promote their products pose challenges to the principles of medical professionalism.[4] Additionally, accepting gifts from the pharmaceutical industry was shown to undermine patients trust in their physician and may even affect patients' intent to adhere to medical recommendations.[5,6] Accepting pharmaceutical gifts is a frequent physician's experience in everyday medical practices worldwide. Several studies from the US, Japan and Australia estimated that approximately between 70% and 95% of physicians accept free drug samples or free meals from pharmaceutical companies.[7-10] Even though at a lower frequency, pharmaceutical companies also offer more expensive gifts such as sponsoring travel or lodging for educational symposia and payments for consulting, giving lectures, or enrolling patients in trials.[7-10] It was shown that promotional spending of pharmaceutical companies preferentially targets certain specialties.[11] Nevertheless, the interaction between the rate of acceptance of different types of gifts and physician's specialty received little attention.[7,12] Unfortunately, studies examining such interactions are completely lacking in Saudi Arabia. The objective of the current study was to examine the variability in accepting different types of gifts by clinical specialty as well as job rank among physicians working in Saudi Arabia.

Methods. The current study was conducted among physicians working in major hospitals in Saudi Arabia. All ranks of physicians of both medical and surgical specialties were included. Hospitals in Central, Eastern, Western, Northern, and Southern regions of Saudi Arabia were included. Both governmental and private hospitals that gave approval to conduct the study were included. Medical students and other healthcare workers were excluded. Physicians without patient-care responsibilities were excluded. This cross-sectional study was carried between March and July of 2012. The study obtained all required ethical approvals from the institutional review board at Faculty of Medicine, King Saud University, Riyadh, Saudi Arabia.

Questionnaire. Self-administrated questionnaire was developed after reviewing previous similar reports[2,7-9,13] and administered to all participants. It included socio-demographic, economic, and occupational characteristics of the study participants. These included age, gender, nationality, monthly income, income satisfaction, type of hospital, clinical specialty, job rank, number of working years, previous work history, and patients' socioeconomic status. The questionnaire assessed the type of medical education obtained, any related ethical education, and the knowledge of any local governing regulations for interactions. The questionnaire assessed the physician's acceptance of pharmaceutical gifts and (when present) the reasons for accepting these gifts; its types, whether the gifts have company's name or logo, and (if applicable) reasons for prescribing the accepted free drug sample. The content of the questionnaire was validated by a multi-disciplinary committee covering ethics, psychiatry, pharmacy, and epidemiology. The questionnaire was then piloted on a small number of participants (n=16) before widespread distribution. The wording and suggested answers were modified for some questions based on the feedback from the pilot sample.

Recruitment. The current study was a part of a bigger study to assess all aspects of physician-pharmaceutical interactions. A total of 1000 questionnaires were distributed by the authors of this study to available physicians at time of the study in a number of secondary and tertiary care hospitals in all 5 major regions of Saudi Arabia (Central, West, East, North and South regions). Informed consents were obtained from all participants after explanation of the study objectives. Both paper (75%) and electronic (25%) formats were used. The participation rate was 66.3% of all contacted physicians (663/1000). Out of 1000 questionnaires distributed; 663 physicians returned filled questionnaires. That is the response rate was 66.3%. Among the 663 questionnaires filled, 281 participants who answered the question "do you accept pharmaceutical gifts and/or promotions?" and other related questions such as type of gift and reasons for accepting gift were included in the current study.

Statistical analysis. Data were presented using frequencies and percentages for categorical data and mean and standard deviation (SD) for continuous data. The acceptance of gifts was presented as percentage of those who answered yes to the question "do you accept pharmaceutical gifts and/or promotions?". Acceptance of pharmaceutical gifts and its characteristics including types of gifts and reasons of acceptance were compared between clinical specialities and different job ranks. Significant differences between groups were tested using chi-square test or Fisher exact test (as appropriate). All P-values were 2-tailed. *P*-value <0.05 was considered

Disclosure. This study was supported by the College of Medicine Research Center, Deanship of Scientific Research, King Saud University, Riyadh, Kingdom of Saudi Arabia.

as significant. SPSS software (release 16.0, SPSS Inc., Chicago, U.S.) was used for all statistical analyses.

Results. A total of 281 participants answered the question "do you accept pharmaceutical gifts and/or promotions?" and other related questions. Socio-demographic characteristics of the participants were shown in **Table 1**. More than three-fourth (77.1%) of the participants were males and the average age 39.8±9.4 years. Approximately half (49.6%) of the participants were Saudi. The most commonly (43.9%) reported monthly income was between 10,000 and 19,000 Saudi Riyals (SR). Almost a quarter (22.9%) of the participants had other financial resources in addition to their main salary as a physician. The majority (61.2%) were satisfied with their income. Approximately 52.3%) of participants were from the Central region. Most participants (69.3%) were working in public hospitals. Most participants (64.1%) described the socioeconomic status of their patients as moderate. Most common specialties were psychiatry, pediatrics, family medicine, internal medicine, orthopedic, and surgery. Approximately 32.7% of the participants was consultants, 37.4% were specialist or registrar, and 29.9% were resident or intern. Participants worked on average for 13.5±9.2 years. Approximately 22.1% of participants had a history of working in Western countries while approximately 34.9% had Western medical education. More than half (57.2%) of the participants received some sort of education on the ethics in physician-industry relationships; mainly (64.6%) in the form of lectures. Only 36.6% of the participants thought that there are rules & polices in Saudi Arabia regulating the physician-pharmaceutical industry relationships.

The acceptance and characteristics of pharmaceutical gifts were shown in **Table 2**. Out of the 281 participants examined, 225 (80.1%) admitted acceptance of pharmaceutical gifts. The frequency of accepting gifts was described as rarely, sometimes, often, and almost always. The most common reasons for accepting gifts were described as a human nature to accept free gifts, hating to say no, helping me to remember their products, minor gifts are always welcomed, gifts are present in every profession, and salaries of doctors are inadequate. The most common gifts accepted were free drug samples, stationary items such as pens and notepads, free meals, financial support to attend educational activities; either non-industry-sponsored or industry-sponsored, prepaid promotion cards/codes, and funding research. Approximately three-fourth of the gifts had company's name or logo. The most

Table 1 - Socio-demographic and occupational characteristics of study participants (N=281).

Characteristics	Number (%)
Gender	
Male	216 (77.1)
Female	64 (22.9)
Age (years)	
Mean±SD	39.8±9.4
20-29	34 (12.5)
30-39	115 (42.1)
40-49	76 (27.8)
≥50	48 (17.6)
Nationality	
Saudi	137 (49.6)
Non-Saudi	139 (50.4)
Arabs	77 (55.4)
Asian or Western	10 (7.2)
Unidentified	52 (37.4)
Monthly income (SR)	
<10,000	23 (8.3)
10,000-19,000	122 (43.9)
20,000-29,000	55 (19.8)
≥30,000	78 (28.1)
Other income	
No	215 (77.1)
Yes	64 (22.9)
Income satisfaction	
Satisfied	172 (61.2)
Not-sure	51 (18.1)
Dissatisfied	58 (20.6)
Saudi region	
Central	138 (52.3)
Eastern	39 (14.8)
Western	43 (16.3)
Northern	14 (5.3)
Southern	30 (11.4)
Type of hospital	
Public	190 (69.3)
Private	56 (20.4)
Both	28 (10.2)
Patients' socioeconomic status	
Low	58 (20.6)
Middle	180 (64.1)
High	6 (2.1)
Mixed or not sure*	37 (13.2)
Specialty	
Psychiatry	75 (26.7)
Pediatrics	33 (11.7)
Family medicine	29 (10.3)
Internal medicine	27 (9.6)
Orthopedic	26 (9.3)
Surgery	24 (8.5)
Others†	67 (23.8)
Job rank	
Consultant	92 (32.7)
Specialist / registrar	105 (37.4)
Resident / interns	84 (29.9)
Working duration (years)	
Mean±SD	13.5±9.2
0-9	106 (38.7)
10-19	97 (35.4)
20-29	47 (17.2)
≥30	24 (8.8)
Previous work	
Western	56 (22.1)
Non-western	197 (77.9)
Ethical education	
No	115 (42.8)
Yes	154 (57.2)
Types of ethical education	
Lectures	95 (64.6)
Workshops	11 (7.5)
Courses	9 (6.1)
Others‡	11 (7.5)
Multiple	21 (14.3)
Knowledge of rules & polices	
No	168 (63.4)
Yes	97 (36.6)

*Patients do not belong to the above categories †Others included additional 18 different specialties, ‡Others included general physicians and clinical fellow

Table 2 - Acceptance and characteristics of pharmaceutical gifts (N=281).

Characteristics of pharmaceutical gifts	Total n	(%)
Overall gift acceptance		
Never	56	(19.9)
Rarely	26	(9.3)
Sometimes	89	(31.7)
Often	73	(26.0)
Almost always	37	(13.2)
Reasons for accepting gift offers*		
Human nature to accept free gifts	101	(44.9)
Do not want to say no	73	(32.4)
Helps me to remember their products	65	(28.9)
Minor gifts are always welcomed	59	(26.2)
Gifts are present in every profession	35	(15.6)
Salaries of doctors are inadequate	9	(4.0)
Other reasons	23	(10.2)
Type of gifts accepted*		
Free drug samples	131	(58.2)
Stationary, such as pens or notepads	119	(52.9)
Free meals	85	(37.8)
Attending CME events	75	(33.3)
Non-industry-sponsored events	48	(21.3)
Industry-sponsored events	46	(20.4)
Prepaid promotion cards/codes	16	(7.1)
Funded research	13	(5.8)
Gifts with company's name or logo		
No	33	(14.7)
Yes	168	(74.7)
Do not know	24	(10.7)
Reasons for prescribing a drug sample*		
To benefit poor patients	132	(58.7)
According to patient's convenience	58	(25.8)
Due to availability of samples	43	(19.1)
To build a good relationship with patients	36	(16.0)
Samples are more effective	13	(5.8)
Others	15	(6.7)

*Not mutually exclusive, CME - Continuing Medical Education

common reasons for prescribing a free drug sample gift were described in **Table 2**.

The acceptance and characteristics of pharmaceutical gifts by clinical specialty were shown in **Table 3**. While there were no significant differences in the overall gift acceptance by specialty, there were significant differences in type-specific gift acceptance between different specialties. For example, stationary items were more frequently accepted by pediatricians than all other specialties (p=0.003) and attending educational activities were more frequently accepted by psychiatrists than all other specialties (p=0.012). There were considerable variations in the reasons for accepting gifts. For example, "helping me to remember their products" was less commonly reported by psychiatrists than all other specialties (p<0.001). With the exception of availability of samples, there were generally no significant differences in the reasons for prescribing a drug sample by specialty.

The acceptance and characteristics of pharmaceutical gifts by job rank were shown in **Table 4**. Although it did not reach statistical significance, consultants reported accepting gifts less frequently than other job ranks. There were significant differences in some reasons for accepting gift by job rank. For example, residents/interns frequently reported that accepting free gifts is "a human nature" more than other ranks (p=0.003). Free meals were more frequently accepted while free drug samples were less frequently accepted by residents/interns compared with other job ranks (p=0.007 and p=0.001). Stationary gifts were frequently accepted by all job ranks. Attending educational activities; either industry-sponsored or not, were highest among consultants and lowest among residents/interns (p<0.001 for all). There were no significant differences in the common reasons for prescribing a drug sample by job rank.

Discussion. We are reporting the acceptance of different types of gifts among a group of physicians of different clinical specialties and job ranks working in Saudi Arabia. Overall, the study showed that approximately 80% of the examined physicians accept pharmaceutical gifts of some types. This high acceptance rate was comparable to similar rates reported from many parts of the world. In these studies, the acceptance of one or more types of pharmaceutical gifts, usually stationary, free drug samples or free meals, was considerably variable but generally high.[7-10] A national survey of more than 3000 US physicians in six specialties showed that 83% of them received food in the workplace and 78% of them received free drug samples from pharmaceutical companies.[7] A similar survey among more than 2600 Japanese physicians in 7 specialties showed that 96% of them accept stationary items and 85% of them accept drug samples from pharmaceutical companies.[9] As seen in several studies, the frequency of accepting low-value gifts such as free drug samples, stationary, and free meals were much more than accepting higher-value gifts as payments for attending educational activities.[7-10,13,14]

In current and previous studies, the high overall gift acceptance may be explained by the widespread belief of being "natural" and "appropriate" to accept them. For example, it was shown in several studies that physicians of different specialties continue to hold positive attitudes toward pharmaceutical gifts and tend to underestimate any associated influence.[15-17] The reasons of accepting gifts in the current study showed a very permissive attitude. For example, approximately 45% of the studied physicians found accepting gifts as "a human nature" and 26% found minor gifts as "always welcomed". It was reported that the majority of medicine house staff consider seven of the nine types of gifts offered as appropriate.[17] This consideration was mainly based on the cost; with higher-value gifts

Table 3 - Acceptance and characteristics of pharmaceutical gifts by clinical specialty (N=281).

Characteristics	Psychiatry n=75	Pediatrics n=33	Family Medicine n=29	Internal Medicine n=27	Orthopedic n=26	Surgery n=24	Others n=67	*P*-value
Overall gift acceptance								
Never	12 (16.0)	10 (30.3)	8 (27.6)	3 (11.1)	5 (19.2)	6 (25.0)	12 (17.9)	0.750
Rarely	7 (9.3)	1 (3.0)	4 (13.8)	2 (7.4)	3 (11.5)	3 (12.5)	6 (9.0)	
Sometimes	24 (32.0)	7 (21.2)	5 (17.2)	11 (40.7)	8 (30.8)	8 (33.3)	26 (38.8)	
Often	23 (30.7)	9 (27.3)	5 (17.2)	7 (25.9)	8 (30.8)	5 (20.8)	16 (23.9)	
Almost always	9 (12.0)	6 (18.2)	7 (24.1)	4 (14.8)	2 (7.7)	2 (8.3)	7 (10.4)	
Reasons for accepting gift offers *								
Human nature to accept free gifts	33 (52.4)	13 (56.5)	10 (47.6)	10 (41.7)	8 (38.1)	3 (16.7)	24 (43.6)	0.169
Do not want to say no	14 (22.2)	12 (52.2)	11 (52.4)	6 (25.0)	8 (38.1)	6 (33.3)	16 (29.1)	0.060
Helps me to remember their products	7 (11.1)	6 (26.1)	9 (42.9)	7 (29.2)	6 (28.6)	5 (27.8)	25 (45.5)	0.004
Minor gifts are always welcomed	26 (41.3)	3 (13.0)	7 (33.3)	5 (20.8)	2 (9.5)	2 (11.1)	14 (25.5)	0.020†
Gifts are present in every profession	11 (17.5)	2 (8.7)	6 (28.6)	1 (4.2)	5 (23.8)	2 (11.1)	8 (14.5)	0.294†
Salaries of doctors are inadequate	2 (3.2)	0 (0.0)	1 (4.8)	4 (16.7)	1 (4.8)	0 (0.0)	1 (1.8)	0.104†
Other reasons	9 (14.3)	2 (8.7)	1 4.8)	0 (0.0)	2 (9.5)	3 (16.7)	6 (10.9)	0.436†
Type of gifts accepted *								
Free drug samples	29 (46.0)	14 (60.9)	12 (57.1)	17 (70.8)	14 (66.7)	9 (50.0)	36 (65.5)	0.254
Stationary, such as pens or notepads	40 (63.5)	19 (82.6)	14 (66.7)	8 (33.3)	9 (42.9)	6 (33.3)	23 (41.8)	0.001
Free meals	27 (42.9)	4 (17.4)	11 (52.4)	5 (20.8)	10 (47.6)	3 (16.7)	25 (45.5)	0.018
Attending CME events	29 (46.0)	4 (17.4)	6 (28.6)	5 (20.8)	8 (38.1)	8 (44.4)	15 (27.3)	0.082
Non-industry-sponsored events	22 (34.9)	4 (17.4)	4 (19.0)	4 (16.7)	3 (14.3)	6 (33.3)	5 (9.1)	0.023†
Industry-sponsored events	16 (25.4)	3 (13.0)	3 (14.3)	3 (12.5)	7 (33.3)	4 (22.2)	10 (18.2)	0.530†
Prepaid promotion cards/codes	0 (0.0)	1 (4.3)	2 (9.5)	3 (12.5)	3 (14.3)	0 (0.0)	7 (12.7)	0.014†
Funded research	1 (1.6)	1 (4.3)	2 (9.5)	3 (12.5)	2 (9.5)	0 (0.0)	4 (7.3)	0.236†
Gifts with company's name or logo								
No	5 (7.9)	2 (8.7)	4 (19.0)	6 (25.0)	4 (19.0)	6 (33.3)	6 (10.9)	0.150
Yes	49 (77.8)	21 (91.3)	15 (71.4)	16 (66.7)	14 (66.7)	9 (50.0)	44 (80.0)	
Do not know	9 (14.3)	0 (0.0)	2 (9.5)	2 (8.3)	3 (14.3)	3 (16.7)	5 (9.1)	
Reasons for prescribing a drug sample*								
To benefit poor patients	36 (57.1)	18 (78.3)	14 (66.7)	10 (41.7)	11 (52.4)	7 (38.9)	36 (65.5)	0.077
According to patient's convenience	17 (27.0)	4 (17.4)	6 (28.6)	7 (29.2)	8 (38.1)	5 (27.8)	11 (20.0)	0.695†
Due to availability of samples	11 (17.5)	0 (0.0)	9 (42.9)	4 (16.7)	4 (19.0)	2 (11.1)	13 (23.6)	0.017†
To build a good relationship with patients	10 (15.9)	4 (17.4)	3 (14.3)	4 (16.7)	3 (14.3)	3 (16.7)	9 (16.4)	0.1000†
Samples are more effective	2 (3.2)	0 (0.0)	0 (0.0)	5 (20.8)	1 (4.8)	1 (5.6)	4 (7.3)	0.067†
Others	8 (12.7)	0 (0.0)	2 (9.5)	1 (4.2)	0 (0.0)	3 (16.7)	1 (1.8)	0.045†

Data are expressed as number and percentage (%).
*not mutually exclusive, †Fisher exact test, otherwise Chi-aquare test was used. CME - Continuing Medical Education

as payment for educational activities considered as inappropriate.[17] Despite the evidence that small gifts may be influential,[18] the high overall gift acceptance in the current study may reflect the widespread physician's assumption that gifts of relatively low values do not significantly influence physicians.[4] Moreover, the latest Pharmaceutical Research and Manufacturers of America (PhRMA)'s guidelines, effective January 2009, continue to permit company-sponsored meals, drug samples, and other "educational" gifts valued less than $100.[19]

While we could not find any difference in the overall gift acceptance by specialty, we observed some differences in the frequency of accepting certain types of gifts. This may be inconsistent with the report by Campbell et al[12] that suggested differences in gift acceptance among physicians from 7 specialties. However, the difference in the definition and grouping of pharmaceutical gifts make it difficult to compare the results between the current study and Campbell et al[12] study. Interestingly, psychiatrists in the current study were attending educational activities more than other specialties. Since paying for educational activities costs much more than offering stationary or free meals, this may reflect the high preference of pharmaceutical companies in this specialty which may have heavy prescription profile and probably life-long treated patients. Supporting this finding, psychiatry was shown to be among the top specialties to receive pharmaceutical gifts and payments[11] and its medications were among the top advertised ones.[20] Looking at the breakdown of specialty by job rank, psychiatry physicians in the current study were more likely to be residents and less likely to be consultants than other specialties. Since consultants not residents were linked to educational activities, the finding may further intensify our assumption of high preference of pharmaceutical companies to psychiatry. Consultants in

Table 4 - Acceptance and characteristics of pharmaceutical gifts by clinical job rank (N=281).

Characteristics of pharmaceutical gifts	Consultant n=92	Specialist / registrar n=105	Resident / interns n=84	*P*-value
Overall gift acceptance				
Never	23 (25.0)	20 (19.0)	13 (15.5)	0.591
Rarely	10 (10.9)	10 (9.5)	6 (7.1)	
Sometimes	30 (32.6)	31 (29.5)	28 (33.3)	
Often	22 (23.9)	28 (26.7)	23 (27.4)	
Almost always	7 (7.6)	16 (15.2)	14 (16.7)	
Reasons for accepting gift offers*				
Human nature to accept free gifts	27 (39.1)	32 (37.6)	42 (59.2)	0.014
Do not want to say no	21 (30.4)	34 (40.0)	18 (25.4)	0.137
Helps me to remember their products	22 (31.9)	29 (34.1)	14 (19.7)	0.114
Minor gifts are always welcomed	19 (27.5)	27 (31.8)	13 (18.3)	0.157
Gifts are present in every profession	17 (24.6)	11 (12.9)	7 (9.9)	0.038
Salaries of doctors are inadequate	1 (1.4)	2 (2.4)	6 (8.5)	0.123†
Other reasons	9 (13.0)	9 (10.6)	5 (7.0)	0.498
Type of gifts accepted*				
Free drug samples	49 (71.0)	52 (61.2)	30 (42.3)	0.002
Stationary, such as pens or notepads	42 (60.9)	44 (51.8)	33 (46.5)	0.226
Free meals	18 (26.1)	31 (36.5)	36 (50.7)	0.010
Attending CME events	36 (52.2)	29 (34.1)	10 (14.1)	<0.001
Non-industry-sponsored events	25 (36.2)	17 (20.0)	6 (8.5)	<0.001
Industry-sponsored events	24 (34.8)	18 (21.2)	4 (5.6)	<0.001
Prepaid promotion cards/codes	4 (5.8)	6 (7.1)	6 (8.5)	0.900†
Funded research	4 (5.8)	5 (5.9)	4 (5.6)	1.000†
Gifts with company's name or logo				
No	10 (14.5)	12 (14.1)	11 (15.5)	0.810
Yes	52 (75.4)	66 (77.6)	50 (70.4)	
Do not know	7 (10.1)	7 (8.2)	10 (14.1)	
Reasons for prescribing a drug sample*				
To benefit poor patients	45 (65.2)	48 (56.5)	39 (54.9)	0.407
According to patient's convenience	14 (20.3)	29 (34.1)	15 (21.1)	0.083
Due to availability of samples	13 (18.8)	14 (16.5)	16 (22.5)	0.630
To build a good relationship with patients	12 (17.4)	16 (18.8)	8 (11.3)	0.409
Samples are more effective	2 (2.9)	2 (2.4)	9 (12.7)	0.022†
Others	5 (7.2)	7 (8.2)	3 (4.2)	0.600†

Data are expressed as number and percentage (%).*Not mutually exclusive, †Fisher exact test, otherwise Chi-square test was used. CME - Continuing Medical Education

the current study accepted gifts less frequently but their gifts were of higher-value (such as attending national and international conferences). On the other hand, residents/interns accepted gifts more frequently but their gifts were of lower-value (such as post-detailing free pizza). In efforts to maintain high sales of their products, pharmaceutical companies focus marketing efforts and spending on promotional activities on physicians who can influence the prescribing behaviors of other physicians.[7] This is typically happening with consultants who usually influence the prescribing behaviors of other physicians (such as specialists/ registrars and residents interns). Accepting money from pharmaceutical companies to attend or speak at educational symposia was associated with requests of adding drugs of concern to the hospital formulary.[21] As suggested in previous studies,[22,23] better enforced regulations and more transparent disclosures regarding gift acceptance imposed on both pharmaceutical companies and physicians may help reducing the negative impact of gift acceptance.

The current study had many advantages; bridging local knowledge gab on pharmaceutical gifts, surveying a relatively big number of physicians across wide geographic areas, and assessing the frequency of gift acceptance among physicians of different specialties and job ranks. Nevertheless, we acknowledged a number of limitations, being a convenience sample, the results should be generalized with caution and should not be regarded as representative to physicians working in Saudi hospitals. Because there were no patients included in the study, we used self-reported estimation of the socioeconomic status of the patients by their physicians. Being self-reported study, the possibility of under-estimation cannot be excluded specially accepting gifts may involve conflicts of interest. Moreover, the number

of missing was considerable in some questions which resulted in a variable number of responses to important questions such as type of gifts.

In conclusion, we are reporting the acceptance of different types of gifts among a group of physicians of different clinical specialties and job ranks working in Saudi Arabia. While there were no significant differences in the overall gift acceptance by neither job rank nor specialty, there were significant differences in type-specific gift acceptance by job rank and specialty. Further research is needed to study the impact of gift acceptance on patient care and to delineate best strategies to reduce any negative impact.

References

1. The World Health Organization. Pharmaceutical Industry. Trade, foreign policy, diplomacy and health. (Accessed 2013 August 1). Available from URL: http://www.who.int/trade/glossary/story073/en/index.html
2. Wazana A. Physicians and the pharmaceutical industry: is a gift ever just a gift? ***JAMA***; 283: 373-380.
3. Cain DM, Detsky AS. Everyone's a little bit biased (even physicians). ***JAMA*** 2008; 299: 2893-2895.
4. Brennan TA, Rothman DJ, Blank L, Blumenthal D, Chimonas SC, Cohen JJ, et al. Health industry practices that create conflicts of interest: a policy proposal for academic medical centers. ***JAMA*** 2006; 295: 429-433.
5. Grande D, Shea JA, Armstrong K. Pharmaceutical industry gifts to physicians: patient beliefs and trust in physicians and the health care system. ***J Gen Intern Med*** 2012; 27: 274-279.
6. Green MJ, Masters R, James B, Simmons B, Lehman E. Do gifts from the pharmaceutical industry affect trust in physicians? ***Fam Med*** 2012; 44: 325-331.
7. Campbell EG, Gruen RL, Mountford J, Miller LG, Cleary PD, Blumenthal D. A national survey of physician-industry relationships. ***N Engl J Med*** 2007; 356: 1742-1750.
8. Halperin EC, Hutchison P, Barrier RC Jr. A population-based study of the prevalence and influence of gifts to radiation oncologists from pharmaceutical companies and medical equipment manufacturers. ***Int J Radiat Oncol Biol Phys*** 2004; 59: 1477-1483.
9. Saito S, Mukohara K, Bito S. Japanese practicing physicians' relationships with pharmaceutical representatives: a national survey. ***PLoS One*** 2010; 5: e12193.
10. McNeill PM, Kerridge IH, Henry DA, Stokes B, Hill SR, Newby D, et al. Giving and receiving of gifts between pharmaceutical companies and medical specialists in Australia. ***Intern Med J*** 2006; 36: 571-578.
11. Chimonas S, Rozario NM, Rothman DJ. Show us the money: lessons in transparency from state pharmaceutical marketing disclosure laws. ***Health Serv Res*** 2010; 45: 98-114.
12. Campbell EG, Rao SR, DesRoches CM, Iezzoni LI, Vogeli C, Bolcic-Jankovic D, et al. Physician professionalism and changes in physician-industry relationships from 2004 to 2009. ***Arch Intern Med*** 2010; 170: 1820-1826.
13. Lieb K, Brandtönies S. A survey of german physicians in private practice about contacts with pharmaceutical sales representatives. ***Dtsch Arztebl Int*** 2010; 107: 392-398.
14. Misra S, Ganzini L, Keepers G. Psychiatric resident and faculty views on and interactions with the pharmaceutical industry. ***Acad Psychiatry*** 2010; 34: 102-108.
15. Castresana L, Mejia R, Aznar M. [The attitude of physicians regarding the promotion strategies of the pharmaceutical industry]. ***Medicina*** (B Aires). 2005; 65: 247-251.
16. Korenstein D, Keyhani S, Ross JS. Physician attitudes toward industry: a view across the specialties. ***Arch Surg*** 2010; 145: 570-577.
17. Steinman MA, Shlipak MG, McPhee SJ. Of principles and pens: attitudes and practices of medicine housestaff toward pharmaceutical industry promotions. ***Am J Med*** 2001; 110: 551-557.
18. Dana J, Loewenstein G. A social science perspective on gifts to physicians from industry. ***JAMA*** 2003; 290: 252-5.
19. Pharmaceutical Research and Manufacturers of America. PhRMA code on interactions with healthcare professionals. (Updated: 2008 Accessed 2013 August 1). Available from URL: http://www.natap.org/2008/HIV/PhRMAMarketingCode2008.pdf
20. Hollon MF. Direct-to-consumer marketing of prescription drugs: a current perspective for neurologists and psychiatrists. ***CNS Drugs*** 2004; 18: 69-77.
21. Chren MM, Landefeld CS. Physicians' behavior and their interactions with drug companies. A controlled study of physicians who requested additions to a hospital drug formulary. ***JAMA*** 1994; 271: 684-689.
22. Grande D. Limiting the influence of pharmaceutical industry gifts on physicians: self-regulation or government intervention? ***J Gen Intern Med*** 2010; 25: 79-83.
23. Gough IR, Dickinson I, Maddern G, Grigg M, Hillis DJ. Winds of change: growing demands for transparency in the relationship between doctors and the pharmaceutical industry. ***Med J Aust*** 2010; 192: 293-294.

Ethical Consent

All manuscripts reporting the results of experimental investigations involving human subjects should include a statement confirming that informed consent was obtained from each subject or subject's guardian, after receiving approval of the experimental protocol by a local human ethics committee, or institutional review board. When reporting experiments on animals, authors should indicate whether the institutional and national guide for the care and use of laboratory animals was followed.