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ORIGINAL RESEARCH

A quantitative insight of the interactions of prescribers with pharmaceutical organization's representatives in clinical settings of Karachi

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Objectives: The study was conducted with the aim to evaluate the prescribers' approach of interaction with medical representatives for drug promotion.

Methods: An explanatory, cross-sectional design was used to evaluate prescribers' interactions with the medical sales representatives (MSRs) through an anonymous, self-filled questionnaire from June to December 2017. Data presented as means±SEM or as percentages and statistically analyzed by one way ANOVA, using significance level of 0.05.

Results: A response rate of 82.8% was achieved. More than 70% agreed that knowledge obtained from MSRs is reliable and useful. A large proportion of respondents acknowledged that MSRs are a key link between pharmaceutical companies and health care professionals, and their interactions are beneficial as MSRs perform an important teaching function. More than 45% agreed that gifts are influential; however, physicians cannot be compromised with very expensive gifts. The majority of the respondents (76%) considered that promotional items are ethically appropriate; however, 66.21% thought that promotional items influence the practice of prescribing. More than half (52.18%) deemed a promotional material more reliable than a printed advertisement. More than 80% of the respondents opined that medication samples are considered appropriate; however, they should only be given to those patients who cannot financially afford them. Around 69% thought that company-sponsored meetings promote their own drugs under the disguise of CME programs.

Conclusion: The present study emphasizes the importance of employing scientifically sound prescribing decision by prescribers in their day to day practice without being influenced by pharmaceutical company's promotional activities. There is a need for restricting unprincipled practices by the concerned regulatory authorities to evade preventable harm to the patient's well-being.

Keywords: Medical sales representatives, physicians, pharmaceutical industry, CME

Introduction

The World Health Organization (WHO) describes pharmaceutical promotion as "all information and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase and/or use of medicinal drugs".[1] Drug promotion is a significant factor that stimulates prescription and vending of pharmaceutical products.[2] The pharmaceutical trade invests a lot in the promotion of their products and applies multifaceted approaches and promotional strategies to stimulate retailing of pharmaceutical drugs. In this perspective, medical sales representatives (MSRs) are the key persons involved in promoting

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their products and are serving as an important communication channel between the physician and the pharmaceutical industry. Consequently, the interaction between MSR and physician is considered by pharmaceutical companies as a fundamental part of their advertising blueprint.[3] Pharmaceutical companies promote their product by means of drug samples, gifts and printed product literature that adds to the acceptability of their product.[4]

In the health care industry, a physician is key person who decides the brand of pharmaceutical product suitable for a particular condition of the patient; hence the major focus of the pharmaceutical business is to manipulate the decision-making practice of physicians. Research has shown that the communication between prescribers and the pharmaceutical representatives unfavorably impacts physician's comportment. MSRs visiting physicians are one of the factors that affect their prescribing patterns since by receiving notepads, pens and other drug promotional items, a targeted drug's name stays topmost in their subconscious mind.[5] The reported studies have proved that propagate actions by MSR can influence the prescribing habits of physicians.[6,7] Furthermore, this influence of physicians' activities and knowledge is dose-dependent: recurrent contacts and receiving of gifts levy a necessity to respond that affects the therapeutic verdict.[7,8] Another study reported that scientific promotional tools are stronger influential in altering prescribing behaviors as compared to other promotional tools.[9] It is interesting that physicians do not look to be cognizant of the consequence of marketing activities on their individual demeanor; however, they tend to identify their teammates' prescribing practice which is getting influenced by industry's advertising.[10,11] Galán reported that physicians might be awake of the consequence of promotion activities on their conduct; nevertheless, they contemplate such activities as ethical and considered them acceptable if the patients end up profiting from such remunerations.[12]

Globally a numeral of guiding principles and regulations were conceded on this matter. In Asia, specifically in South Korea modifications were made in the anti-rebate rule precisely to treat the subject of immoral pharmaceutical advertising and sales campaign activities to level criminal penalties against MSRs and prescribers indulged in such practices.[13] Conversely, the situation prevailing in Pakistan is not the same. The population of Pakistan is around 200,813,818 making it the world's 6th most heavily populated nation.[14] There is an enormous growth in the pharmaceutical marketplace and the development of the pharmaceutical industry in the past decade was considering making it on the number 10th in Asia with a worth of US $2.34 billion in 2012.[15] Studies conducted in Pakistan have shown that the prescribers have the tendency to indulge in irrational prescribing practices.[16] The principles concerning health practices encompass loopholes as several prescription-only-medicines (POMs) are easily accessible over the counter OTC from the pharmacies all over the country. The standard of pharmacies is under par and occasionally non-existence of qualified pharmacist upsurge the threat of patient maltreatment. Although the drill of rational pharmacy practice is evolving promptly in the country and the pharmacists have revealed self-confidence in attempting these issues; however, it is still early for them to entirely get implicated in patient care and perform their desired character.[17] This consequence puts physicians in an authoritative place in the health care structure and thus they are observed as marketing projections for pharmaceuticals that have the probability to escalate the drug trades. The MSRs are first-line strength of a pharmaceutical business who imparts an imperative part in fostering this association. This relationship is synergistic and in the advanced countries, the pharmaceutical organization endorses ethical marketing tactics to encourage sensible prescribing and sales of their medicines. The prescribers likewise get advantage from this as their knowledge is augmented that allows them to advise the medicines reasonably.[18] Conversely, in a developing nation like Pakistan, where implementation of health guidelines and part of the pharmacist are in budding stages, prescribers and pharmaceuticals are usually unrestricted to perform as they deem appropriate with the goal of growing sales predictions. However, there is a code of ethics by the Pakistan Medical and Dental Council (40, 51 to 54) which precisely deals with this issue.[15] In spite of this, the immoral drug advertising and prescribing are carried out in the country.[19] The pharmaceutical firms generally offer prescribers privileges in return for escalating integer of prescription having their products. Khan in 2004 reported the different forms of incentives, pharmaceuticals providing to the prescribers including continuing medical education CME, conferences, symposiums and medical books. Unethical incentives, for instance, rewarded holiday tours, medication samples, lunch and luxurious gifts. The current drift witnessed in contributing drug advertising inducements by the pharmaceuticals is to offer down payment to the prescriber for a new car in return for recommending a definite volume of prescriptions per month having the particular pharmaceutical organization's product.[20] Owed to this interaction among prescribers and

MSRs, the debate is coming under increasing exploration and the current research was conducted with a similar approach to observe this contact in clinical settings of Karachi.

Materials and methods

Duration of the study

An explanatory, cross-sectional study was executed from June to December 2017.

Study population

The physicians working in private and government health care facilities of Karachi were included in the study to observe their opinion about MSRs, drug promotion and prescribing practice. The selection of the participants was based on convinient sampling. The questionnaire-based interviews were conducted in person; out of the total 250 physicians contacted, 207 agreed to participate in the research.

Study instrument

The study instrument consisted of a survey questionnaire which was obtained from previous studies[20,21] and slightly modified to assess the opinion of the physicians toward the interaction with MSRs and the effect of MSRs on their prescribing practice. The first part of the questionnaire contained questions about the socio-demographic characteristics of the physicians (age, gender, year of experiences, department, organization and qualification). The second part contained 32-items to observe the physician's opinion about MSRs, drug promotion and prescribing practice by using a 5-point Likert scale ranging from 1="strongly disagree" to 5="strongly agree."

Informed consent

Verbal informed consent was acquired from the participants prior to recording their responses. The research presents no more than minimal risk of harm to subjects and involves no intervene or procedures for which written consent is normally required outside of the research context.

Ethical approval

Prior permission was taken from the various heads of departments in the hospitals and clinics before initiating the study. The questionnaires were distributed to the physicians after explaining them the purpose of the study.

Data analysis

The retrieved questionnaires were entered into Microsoft Excel (c) and then downloaded into the Statistical Package for Social Sciences (SPSS 20.0, Chicago, IL) for analysis. Means and standard deviations for each of the survey items were determined. The influence of age, gender and experience of the respondents on their opinion about MSRs role in prescribing of medicines was determined by using one-way ANOVA. A significance level of 0.05 was used.

Results

This research study was conducted for 7 months in different hospitals and clinics of Karachi, Pakistan, in order to acquire a broad view of the numerous aspects of drug promoting and advertising practices. A response rate of 82.8% was achieved. More than 50% (53.1%) of the respondents were males and 46.9% of them were female with a mean age of 40 years. Majority (65.2%) practiced in private health care facilities. Frequencies of interactions of respondents with MSRs reported to be either once a week, (32.7%), or twice a month (28.5%).

Respondents' opinion regarding their interactions with MSRs

Table 1 shows the respondents' opinion regarding their interactions with MSRs. Nearly half of the population (45.41%) agreed and (41.55% strongly agreed) that MSRs are a key link between pharmaceutical companies and health care professionals. More than 85% concurred that MSRs should be allowed to interact with doctors. More than 65% considered that the interactions of physicians and MSRs are important/beneficial and knew that MSRs perform an important teaching function. More than 70% agreed that knowledge obtained from MSRs is reliable and useful. However, 61.84% of the respondents believed that the only goal of MSRs is the promotion of their products. Around 30% claimed that MSRs provide misleading information for promoting their products. More than half (58%) opined that communication with MSRs should only be permitted in an educational setting.

Respondents' opinion regarding gifts/promotional items received from MSRs

Respondents' opinion regarding gifts/promotional items received from MSRs is illustrated in Table 2. Around half of the respondents believed that physicians cannot

Table 1 Respondents' opinion regarding their interactions with MSRs

Statement	(%)							*P*-value			
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Standard deviation	Gender	Age	Position	Experience
MSRs are a key link between pharmaceutical companies and health care professionals.	0.48	5.31	7.25	45.41	41.55	4.25	0.81	0.001*	0.047*	0.007*	0.121
MSRs should be allowed to interact with doctors.	0.48	6.76	6.76	54.59	31.40	4.10	0.83	0.025*	0.437	0.383	0.214
Interactions of doctors and MSRs are important/ beneficial	4.37	12.14	17.96	41.75	23.30	3.66	1.12	0.005*	0.105	0.551	0.077
MSRs perform an important teaching function.	2.90	12.08	16.43	41.06	27.05	3.97	2.99	0.552	0.884	0.961	0.908
Knowledge obtained from MSRs is reliable and useful.	2.42	8.21	18.36	52.17	18.36	3.74	0.96	0.040*	0.172	0.067	0.115
The only goal of MSRs is promotion of their products	3.86	11.59	22.22	45.41	16.43	3.57	1.05	0.090	0.113	0.754	0.341
MSRs provide misleading information for promoting their products	7.28	38.65	24.15	19.81	9.66	2.89	1.16	0.045*	0.970	0.973	0.959
Interactions with MSRs influence the practice of prescribing medicine	5.80	31.88	18.84	30.43	13.04	3.13	1.17	0.363	0.133	0.210	0.676
Communication with MSRs should only be permitted in an educational setting	3.38	21.26	15.94	43.48	15.46	3.45	1.11	0.942	0.243	0.270	0.068
It is unethical to interact with medical representatives during working hours/clinic	7.73	24.64	10.14	28.50	28.50	3.44	1.36	0.583	0.325	0.794	0.928
Presentations conducted by MSRs should be banned	18.36	39.61	16.91	14.49	10.63	2.59	1.24	0.458	0.726	0.001*	0.502

Note: *Statistically significant value ($p<0.05$).
Abbreviation: MSRs, Medical sales representatives.

be compromised with very expensive gifts and they will maintain the same contact with MSRs without gifts. About 61% of the respondents opined that gifts are a suitable way to learn about new products. Regarding promotional items, majority of population (75.84%) considered that promotional items are ethically appropriate; however, 66.21% thought that promotional items influence the practice of prescribing. More than half (52.18%) deemed promotional material as more reliable than a printed advertisement.

Respondents' opinion regarding medication samples received from MSRs

Respondents' opinion regarding medication samples received from MSRs is presented in Table 3. More than 80% of the respondents opined that medication samples are ethically appropriate and are influential. More than 65% of the respondents thought that medication samples help doctors learn about medications; however, they should be only be given to the financially needy. More than 60% considered sponsored lunches appropriate and deemed that they should be continued. About 50% believed that sponsored continuing medical education (CME) trips are ethically appropriate. Around 70% of the respondents considered that accepting money from pharmaceutical companies to give lectures is ethical. Around 69% thought that company-sponsored meetings promote their own drugs under the disguise of CME programs.

Discussion

In the current study, a response rate of greater than 80% was achieved which is a well-sought response rate in healthcare research.

The present study results are in line with a developing country findings in which physicians acknowledged the fact that MSR played a prominent role in imparting knowledge and relevant information to physician and emphasized that MSR visits facilitate physicians learning about new drug utilization.[6] A prior study from Pakistan reported that the majority of practitioners expected good communication skills and knowledge from MSRs.[20] The interaction of physician with MSR is significantly important as pharmaceutical companies rely heavily on various sales promotion strategies.[3] Another study from Peru reported that physicians emphasized the importance of information provided by pharmaceutical representatives as it helps them to "learn about new products" and "stay up to date".[21] In the current study, majority believed that the only goal of MSRs is the promotion of their products and many even claimed that MSRs provide misleading information for promoting their products. Similar findings were reported by Ferrari where majority considered that the information brought up by pharmaceutical representatives is "not trustworthy" and 80.3% stated that the representatives "prioritize the promotion of their products over patients' benefit".[21] The present findings are also in line with the study conducted by Roy et al in 2007; in which doctors have found to complain that MSRs provide limited information about the drug for the sake of their product promotion. Their presentation focuses on highlighting a drug product's benefit and modulating medicine contraindication and associated risk, thereby depriving the patient of quality time with doctors.[4]

Studies have demonstrated physicians tend to prescribe new drug less rationally and heavily when receiving commercial information.[22,23] Few studies have also reported that MSRs promotional activities have found to affect the physician prescribing patterns by influencing their clinical decision making.[6,7,9] Similar findings were observed in the current research. It is more likely that more the doctor exposed to the endorsed pharmaceutical product there is more likelihood of influenced the clinical decision that may impact their prescribing choices.[6,24,25] This requires the establishment and implementation of ethical marketing practices, rules and regulations for drug promotion that must be compiled by pharmaceutical companies and their medical representatives.[26]

The present study is similar in line with the study that highlighted the fact that the majority of the physicians (80.2%) emphasized the need for regulating ethical norms to maintain physician–pharmaceutical companies' interactions.[6,27] There is a common practice that physicians and pharmaceutical companies strengthen their relations by gifting various promotional items to physicians. Furthermore, these promotional gifts tend to revive their brands in the physician memory lane, consequently, may influence physician prescribing practices.[28,29] These promotional gifts may range from prescription pads to relatively less cost medical equipment's that tends to become more expensive with each passing year.[30]

It is commonly observed that MSRs maintain personal rapport with physicians by remembering their special occasions such as birthdays and anniversaries.[4,31] Even in the developed countries, pharmaceutical companies are involved in numerous types of influence practices comprising speciously healthy activities of CMEs, where nearly ~70% of pharmaceutical enterprise finance support

Table 2 Respondents' opinion regarding gifts/promotional items received from MSRs

Statement	(%)							*P*-value			
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Standard deviation	Gender	Age	Position	Experience
Receiving gifts/promotional items from representatives is ethical/appropriate	19.32	24.15	21.74	25.12	9.66	2.82	1.28	0.047*	0.749	0.244	0.531
Gifts are influential because the gifts that are of substantial value act as an inducement to prescribe any medicine	11.17	20.39	22.82	30.10	15.53	3.18	1.24	0.814	0.806	0.576	0.545
Physicians cannot be compromised with very expensive gifts and they will maintain the same contact without gifts	13.53	17.39	19.32	27.05	22.22	3.36	1.87	0.991	0.343	0.971	0.057
Gifts are suitable way to learn about new products	3.38	14.98	20.77	41.55	19.32	3.58	1.07	0.257	0.353	0.299	0.004*
Gifts are justified/part of business if occasionally offered	13.53	24.64	16.43	31.88	13.04	3.08	1.29	0.006*	0.060	0.437	0.442
Gifts that primarily benefit patients only should be accepted from the health care industry	13.04	22.71	14.49	34.30	14.98	3.14	1.31	0.000*	0.032*	0.649	0.546
Promotional items are ethical/appropriate	5.80	9.18	9.18	47.34	28.50	3.84	1.12	0.379	0.688	0.210	0.134
Promotional items influence the practice of prescribing	3.86	12.08	16.91	45.89	20.32	4.32	4.93	0.979	0.344	0.000*	0.594
Promotional material is more reliable than printed advertisement	6.28	22.22	18.84	35.27	16.91	3.59	3.78	0.477	0.697	0.977	0.766
Drug advertisement need to provide educational material	4.35	16.91	19.81	36.71	22.22	3.56	1.14	0.001*	0.145	0.166	0.652

Note:*Statistically significant value ($p<0.05$).
Abbreviation: MSRs, Medical sales representatives.

Table 3 Respondents' opinion regarding medication samples received from MSRs

Statement	(%)							*P*-value			
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Standard deviation	Gender	Age	Position	Experience
Medication samples are ethical/appropriate	5.80	3.38	7.73	52.66	30.43	3.99	1.02	0.643	0.479	0.112	0.847
Medication samples are influential	4.83	3.86	11.11	50.24	29.47	4.16	3.02	0.160	0.579	0.828	0.805
Medication samples should only be given to the financial needy	8.70	10.63	14.98	42.03	23.22	3.97	4.15	0.137	0.514	0.329	0.794
Medication samples help doctors to learn about medication	4.35	14.98	11.59	33.33	35.27	4.00	3.10	0.842	0.845	0.699	0.646
Sponsored lunches are appropriate or should continue	7.73	15.94	12.56	42.51	21.26	3.54	1.21	0.492	0.691	0.000*	0.531
Sponsored meals are influential	5.31	26.09	21.74	35.75	11.11	3.21	1.11	0.037*	0.137	0.862	0.588
Sponsored continuing medical education (CME) trips are ethical/appropriate	8.70	17.87	24.15	35.75	13.56	3.65	4.11	0.226	0.207	0.002*	0.830
Sponsored CME trips are influential as they results in undue favor of sponsor's drug	6.28	23.67	19.32	33.82	16.43	3.29	1.20	0.481	0.267	0.399	0.860
Accepting money from pharmaceutical companies to give lectures is ethical/appropriate	6.76	9.18	14.49	42.03	27.05	3.93	2.96	0.281	0.893	0.919	0.888
Company sponsored meetings promotes their own drugs under the disguise of CME programs	5.80	9.66	15.94	44.93	23.67	3.71	1.11	0.696	0.022*	0.486	0.002*
Sponsored satellite symposia organized at breakfast, lunch or dinner time during conferences should be discouraged as they bias doctor's behavior	7.25	17.87	19.81	38.65	15.94	3.72	5.04	0.353	0.051	0.000*	0.106

Note: *Statistically significant value ($p<0.05$).

Abbreviations: MSRs, Medical sales representatives; CME, Continuing medical education.

is going in and which also comprises tours to resorts and holiday trips to extravagant places in the name of CME lectures and conferences.[32] However, such practices are now being observed carefully by governing bodies in industrialized countries and even emerging countries are taking initiatives to control them as they are more probable to endorse specific brands of drugs deprived of adequate scientific proof of it is superior to others and often hiding the possible side effects.[33,34] The present study emphasizes physicians employ scientifically sound prescribing decision in their day to day practices without being influenced by pharmaceutical companies, promotional activities for the health and benefit of their patients. A government should take appropriate measures to provide readily accessible scientific information about the drug to the physicians by establishing Drug Information Centers and propagating the significance of clinical and community pharmacist among the population.

This study elucidates the existing pharmaceutical drug marketing campaign and its influence on prescribing practices in Pakistan. The majority of prescribers, national pharmacy organizations and to a certain level the multinational pharmaceutical companies indulge in unethical practices in drug marketing and prescribing. Guiding principles governing the prescribing and drug marketing are requisite to be executed by the relevant regulatory authorities to evade potential unnecessary burden on patient's health and pocket both.

The physicians must not receive any endorsements, favors of fiscal significance from any pharmaceutical corporations in response to an escalation in prescribing designated brand. Furthermore, pharmaceutical firms must strive hard in the marketplace on the base of the quality of the drug and do not suggest any valued gift and inducements to the prescribers. The communication among physicians and pharmaceutical companies should be constrained by acceptable limitations and the establishments must be ready to play a dynamic role. Firming the regulatory mechanism and framing strategies in this respect is needed. It is vital that pharmacist should play a significant role in this progression ever since they are more aware of the consequences like polypharmacy and adverse drug reactions owed to immoral drug prescribing practices.

Conclusion

The present study concluded that physicians and MSR liaisons are necessary to ensure relevant pharmaceutical drug product information. Their collaboration is also important for solving potential ethical dilemmas associated with the mushrooming of pharmaceutical companies that tend to surpass another company with respect to quality, and cost of the drug product. This requires national regulatory authorities to exercise ethical marketing practices.

Disclosure

The authors report no conflicts of interest in this work.

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