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Abstract

Background: Pharmaceutical companies invest greatly in promotional gifts to influence prescription of medications by physicians, yet there is limited published information evaluating its impact on healthcare.

Aim: This study aimed to assess the beliefs and practices of physicians in Lebanon regarding promotional gifts and their interactions with representatives of pharmaceutical companies.

Methods: This cross-sectional study was conducted between December 2019 and January 2020 through an email-based questionnaire sent to 5936 physicians of different specialties registered in the Lebanese Order of Physicians. Assessment was done using a validated tool and data analysis was conducted using SPSS version 26.0.

Results: Of the 268 respondents, 188 (70.4%) reported that physicians in Lebanon accepted gifts from representatives of pharmaceutical companies. Most of the physicians (31.7%) interacted with company representatives more than once a week. Medication samples (251

respondents) and stationary items (222 respondents) were the most common gifts accepted by physicians who admitted accepting gifts. Overall, 225 (84.9%) respondents believed that prescriptions by physicians in Lebanon were influenced by the gifts. Only 74 (40.0%) of those who accepted gifts from pharmaceutical companies believed that it was unethical, and around half did not know if the Lebanese Code of Medical Ethics allowed them to accept gifts from pharmaceutical companies.

Conclusion: Although physicians in Lebanon were aware of the effect that gifts from pharmaceutical companies could have on their prescription behaviours, many of them still accepted the gifts. This study provides evidence to policymakers for decision-making regarding ethical guidance on interactions between physicians and pharmaceutical companies in Lebanon.

Keywords: clinical practice, physicians, pharmaceutical companies, promotional gifts, medical ethics, pharmaceutical representatives, Lebanon

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Background

Pharmaceutical companies spend a lot of money for promotional purposes; it has been estimated that the global worth of promotional activities is around US$ 300 billion a year (1). This is almost twice the amount of money spent by these companies on research and development, as often asserted by relevant professional societies (2).

A pharmaceutical company representative (PCR) is an employee of a pharmaceutical company who would visit practicing doctors regularly to advertise a certain product (3). Frequent and regular PCR visits are the most important and influential tool used by pharmaceutical companies (4,5). During these visits, the representative provides details about the product (6) and often presents gifts to influence the decision of the physician to use the product (3).

In several studies, most doctors reported accepting gifts from pharmaceutical companies (7); the blind spot concept in conflicts of interest has been associated with such behaviour (8). Substantial evidence reveals the likelihood of influence – including changes to physicians' prescribing behaviours – when there is an exchange of promotional gifts, even those of negligible value (9).

Lebanon's healthcare sector comprises both public and private healthcare providers. The National Social Security Fund (NSSF), established in 1963, caters to 80% of hospital expenses, including costly medical interventions, offering a notable benefit to a considerable proportion of the populace (approximately 42.7%).

While Lebanon's healthcare system was once renowned regionally, the aftermath of the 1975 civil war led to a decline and a shift of control towards the private sector and non-government organizations (NGOs)(10). Since then, nearly half (48%) of the total public health spending has been used for hospitalization within the private sector (11); and 80% of the hospitals in Lebanon are private (12). This sector has been shown to over-medicalize, focusing more on the younger, healthier population and their immediate demands, such as procedures and prescriptions, than on primary preventative measures and continuity of care for chronic diseases (13). Of the drug expenditures within private practice, 79% is out-of-pocket payment by the patient (12).

In Lebanon, the rate of prescription inaccuracies is up to 40%; of these inaccuracies, 9% is seen as unnecessary prescription as a consequence of promotional activities (5). Due to the change in prescribing behaviours, the ethical issue has been of concern to both promoting companies and physicians, as well as the regulatory authorities (5).

The impact of these interactions on the prescription practice of physicians is well established, although precise knowledge of the extent to which Lebanese physicians interact with and accept promotional gifts from pharmaceutical companies is lacking, as is an understanding of their beliefs in this regard. We hypothesize that the majority of Lebanese physicians have interactions with pharmaceutical companies in a way that is affecting their practice and

prescription patterns.

This study assessed the beliefs and practices of Lebanese physicians regarding promotional activities and interactions with pharmaceutical companies.

Methodology

Study design and setting

This cross-sectional study was conducted using an online-based questionnaire through Lime Survey, sent by email to physicians who are enrolled in the Lebanese Order of Physicians (LOP); to be able to practice, Lebanese physicians must be enrolled in LOP. Ethical approval for the study was obtained from the institutional Review Board of Beirut Arab University.

Sample size

Since we had no available data on the proportion of physicians accepting promotional gifts, we assumed an expected proportion of 50% of physicians. For a power of 80%, margin of error of 5% and a confidence interval of 0.95, the estimated sample size was set at 385 using $n=Z\alpha/2*p*(1-p)/MOE\text{-squared}$.

Recruitment of participants

An online questionnaire was sent to 5936 physicians in Lebanon whose names and email addresses were provided by LOP. Lime Survey was used to establish, send and retrieve the questionnaire. An initial invitation email was sent to study participants between December 2019 and January 2020. The consent form was attached, and participants consented electronically to participate in the study. Reminder emails were sent every 2 weeks, with a total of 3 emails. The physicians participating in the survey remained anonymous.

Questionnaire

The questionnaire was divided into 4 parts: demographics; physicians' practices with regard to interactions with pharmaceutical companies; validated tool to assess beliefs; and physicians' knowledge of relevant LOP laws. The questionnaire was pretested on 10 physicians and a few modifications were made to ensure validity.

Validated tool

A validated assessment tool was developed to measure the gift relationship between

pharmaceutical companies and physicians (14). The tool studied the extent of gift giving and receiving (14), which was validated based on the extent of giving (15). It consisted of 22 close-ended statements categorized into 7 belief constructs (7-likert scale) (14). Physicians were asked to specify their level of agreement or disagreement using a 0–6 scale, where 0=strongly disagree and 6=strongly agree (14).

Statistical analysis

Analysis was conducted using SPSS 26.0. Descriptive data was reported as mean ± standard deviation for continuous data, and as numbers and percentages for categorical data. P

Results

Participants' demographics

Most respondents were male (65.7%) and the mean age was 45 years. The majority of physicians were from Beirut (59.3%), followed by Mount Lebanon (33.2%) and North Lebanon (22.8%). Most were attending physicians (94.8%) with more than 10 years of experience (56.7%) (Table 1).

Years of experience was not significantly correlated with the acceptance of pharmaceutical gifts (P=0.219). Internal medicine and its subspecialties (32.5%), family medicine/general practice (14.9%) and general surgery (13.4%) were among the most common fields practiced.

Physicians most commonly practiced in private hospitals (64.2%), university hospitals (50.7%) and private clinics (45.5%). There was significant association between working in a private hospital and seeing a PCR more frequently (P

Interaction with pharmaceutical companies

Only 6.3% of the physicians had no interaction with PCRs (Table 2). Of those who interacted with PCRs, 28% reported once-weekly interactions and 31.7% reported interacting even more frequently, although not daily. The figure dropped to 14.2% for daily interactions.

Promotional gifts

Among responding physicians, 69.3% thought that most of their colleagues accepted gifts from PCRs, which was concordant with further results that showed most (70.4%) respondents admitted accepting gifts from PCRs. Interestingly, there seemed to be self-awareness of

prescribing habits, as 84.9% of the physicians believed that receiving gifts affected their prescription habits.

Of those who worked in a private clinic, 76.9% reported that they had ever received a promotional gift, as compared to 65.1% of those who did not work in a private clinic (P=0.043). Figure 1 shows the promotional gifts most commonly received by physicians: medication samples (94%); stationery items (83.1%); books and journal subscriptions (80.9%); research funding (79.4%); and sponsored travel to conferences (73.3%).

Results show that 89.5% of the physicians who interacted with PCRs daily accepted promotional gifts. This percentage dropped progressively and significantly to 23.5% for those who did not interact with PCRs. When we analysed the association between accepting pharmaceutical gifts and the frequency of interaction with PCRs, that relationship was directly proportional and statistically significant (P

Half of the physicians surveyed believed there should be a maximum value for a promotional gift to be considered acceptable; the majority suggested a maximum of US$ 100. There was a significant difference (P=0.032) between those who accepted promotional gifts and those who did not with regard to the maximum value. Those who accepted promotional gifts mostly believed in setting a maximum value (53.5%).

Clinical encounters

In terms of clinical visits, 105 respondents (39.2%) saw 0–10 patients per day. This value slightly increased and peaked with the increase of patients, where 107 (39.9%) saw 11–20 patients per day. As the number of patients per day increased, the number of physicians decreased: only 38 (14.2%) saw 21–30 patients per day, and 18 (6.7%) saw 31–40 patients per day.

Regarding prescriptions, 135 physicians (50.4%) wrote 0–10 prescriptions per day. As the number of prescriptions written per day increased, the number of doctors writing them decreased to 16 (6%) for those who wrote 31–40 prescriptions per day (Table 3). Among the respondents, 226 (86.9%) gave medication samples to their patients, with the majority (94.3%) doing so to help those who could not afford a medication rather than to build rapport with patients (5.7%).

Overall, there was a significant increase in the number of prescriptions associated with the increase of PCR contact. None of the physicians that interacted with a PCR less than once a month wrote more than 21 prescriptions per day; this number increased significantly (P=0.007) to 31.6% for those who saw a PCR daily.

Beliefs about promotional activities

Most physicians moderately agreed ($\bar{x}$=4.65±0.45) that companies gave them gifts to influence their prescriptions (Table 4). However, physicians slightly disagreed ($\bar{x}$=2.43±0.20) that they were influenced by pharmaceutical companies upon receiving a gift. Physicians slightly agreed ($\bar{x}$=3.36±0.37) that the gifts they received were a form of professional recognition.

Most doctors moderately agreed ($\bar{x}$=4.04±0.60) that receiving gifts was inappropriate, and moderately agreed ($\bar{x}$=4.31±0.44) that making their relationship with pharmaceutical companies public was an obligation.

Regarding sponsored continuing medical education (CME) programmes, physicians moderately agreed ($\bar{x}$=4.65±0.56) that sponsored CME events were a promotional gimmick by pharmaceutical companies.

Of those who accepted pharmaceutical gifts, 40% believed that receiving gifts was unethical, versus 66.7% of those who did not accept such gifts. This difference was significant. Similarly, only around 42% of those who accepted pharmaceutical gifts believed that a physician's behaviour was liable to change because of the gift, and that gifts are given to doctors to influence, in contrast to 72.0% of those who did not accept gifts.

While 83 physicians (31.4%) believed that the Lebanese Code of Medical Ethics allowed them to accept pharmaceutical gifts, 49 (18.6%) did not, and 132 (50%) did not know the stance on this issue. Among physicians who were unaware of whether the Lebanese Code of Medical Ethics allowed accepting promotional gifts, around 70% reported that they had ever accepted a promotional gift.

Those who believed the code allowed acceptance of some or all promotional gifts were more

likely to accept promotional gifts. On the other hand, the percentage of physicians who believed that the Lebanese code did not allow acceptance of promotional gifts was significantly lower (around 50%) than those who reported ever accepting a promotional gift (P=0.006).

Discussion

The study targeted Lebanese physicians to assess their beliefs and practices regarding encounters with pharmaceutical companies and their promotional agenda. In many areas of the world, most doctors are visited by PCRs at least once weekly (3). This could be considered problematic, as repeated PCR visits seem to have an increased influence on prescribing patterns (16).

The rate of gift acceptance from PCRs was high among Lebanese physicians (70.4%), comparable to other countries, such as the United States (94%) (8) and Saudi Arabia (80.1%) (1). Several studies show that most of the offers presented to physicians by pharmaceutical companies are accepted (1).

For promotional purposes, pharmaceutical companies seem to be targeting physicians practicing in the private sector and at university hospitals. Our findings reveal that only those who worked in private hospitals had significantly more frequent visits from PCRs, and their tendency to accept promotional gifts was significantly higher than their colleagues in the public sector. This preference could be due to the high level of physician autonomy in private practice (17).

Changes in prescription behaviour, under the influence of pharmaceutical companies, often causes the physician to overlook cheaper alternatives as they feel obliged to submit to the promotional party’s benefits (5). Our study showed that physicians moderately agreed that they received gifts attempted to influence prescription-related decisions, and most respondents (84.9%) believed that Lebanese doctors were indeed influenced by receiving pharmaceutical gifts. This was also observed in multiple other studies (4).

Most doctors surveyed believed that accepting such gifts should be discouraged, as it may be unethical to accept gifts that could alter behaviours and lead to inappropriate prescriptions. In the literature, however, many either think of these influencing attempts as benign or consider that their behaviour is immune to change (18). This belief is more prevalent among those who tend to receive gifts more frequently (9); in our study, the majority of those who received gifts didn’t necessarily agree with the potential of influencing.

When asked about gift influencing as a personal issue, Lebanese physicians slightly disagreed; they did not think they were personally influenced, even if they believed their peers may be. The concept of conflict of interest is clearly overlooked by most physicians.

One of the main ethics principles is beneficence, which dictates that physicians must strive for the net benefit of their patients. In the context of prescribing medications, it means that the choice of the medication should be based solely on the best interest of the patient. This may not be the case when a physician has an interest in or can benefit from prescribing a certain medication. Evidence shows that growing interactions between physicians and pharmaceutical companies could lead to conscious or subconscious conflicts of interest manifested as lower prescription quality, more frequent prescription overall, and higher prescription costs and burdens on the patient (19).

Humans tend to reciprocate received gifts, in our study this could translate into a change in behaviour (9). Most Lebanese physicians surveyed believed that prescriptions could be affected by gifts; our data showed that the number of prescriptions was higher among those who interacted with PCRs often versus those who did not. This phenomenon is also apparent across other populations of physicians (8).

Medication samples were the most common (94%) type of gift received from pharmaceutical companies. Many physicians consider samples to be a more ethical advertisement, as they are passed to the patient and would alleviate the costs of therapy (20). Not only does this action influence the prescribing doctor, who is more likely to recommend a non-familiar drug, but it also potentially affects the users of the promoted medication, as it is seen as an act of beneficence by the company (20).

The debate continues over whether free drug samples are economically beneficial for patients, as cheaper, non-promoted alternatives could be available that could have reduced the total cost of medications had no external influence occurred (19).

Other promotional gifts presented during a PCR’s visit included stationery items (83.1%), books and journal subscriptions (80.9%), research funding (79.4%) and sponsored travel to conferences (73.3%), all of which align with findings in the literature (8). The studies found that the main influencing gifts were stationery items and CME event attendance (8).

Pharmaceutical companies often sponsor CME activities, and physicians in our study found the information presented to them to be beneficial. Regardless, most physicians moderately agreed that CME events were a promotional gimmick that serves the publicity of the product in question. Educational activities run by pharmaceutical companies often lead to an increase in prescription rates of a certain company's drug compared to its competitors (21).

Information presented by PCRs, whether through drug detailing or conferences, could be misleading as it focuses on favourable points of interest while ignoring drawbacks like side effects (5). This is especially problematic in developing countries, where many physicians depend on PCRs to acquire information about drugs (4).

While pharmaceutical companies perceive promotional rewards as a boost to their sales, physicians and society have huge ethical concerns about the acceptance of such gifts due to possible conflicts of interest (1).

The main rationale behind rejecting a gift is the belief that accepting it may imply an obligation towards the promoting company (3). Our findings reveal that physicians did not feel pressured or guilty if they did not prescribe the promoted drug. However, questions remain about negative effects on patient care, financial profiles and public trust in healthcare workers (6). Participating physicians said they believed their exchanges with pharmaceutical companies should be public and transparent to improve their relationship with patients.

Although the public and healthcare professionals believe that doctors could be allowed to accept certain gifts, there is no agreed threshold value for such gifts below which there would be no influence over physicians (22). Physicians in our study, particularly those who usually accepted gifts, believed that such a defined value should exist; and it is known that the risk of behaviour change is proportionally related to the value of a gift (9).

Self-reporting of physician-PCR interactions, along with the reception of gifts and drug samples, is decreasing; whether this reflects a decrease in interactions or an avoidance of reporting is unclear. This decrease, when occurring in a high-income country, could be related to regulations limiting these exchanges with pharmaceutical companies (23), e.g. requiring the submission of reports detailing the promotional gifts (24). Regulating these activities protects patients and ensures a transparent social image of healthcare workers in the eyes of the public

(21).

In 2016, a code of ethics was established by the Lebanese Ministry of Public Health to regulate this field. It states:

“Promotional items with modest or symbolic value can be given to the doctors if they apply the following conditions: the gift should not be more than 10% of the monthly minimum wage, is useful to the professional’s practice, is related to the promoted drug, and will add greater value for the patient care” (25).

The majority of physicians, however, claimed not to have received a copy of this code (5) and our data showed that half of the respondents did not know what it implied regarding promotional gifts. Although our study showed a correlation between awareness of the code of ethics and not accepting promotional gifts, it is clear that the mere presence of ethical guidelines is not sufficient without proper dissemination and implementation. To address this gap and decrease the influence of pharmaceutical companies on doctors’ prescription habits, healthcare policymakers should develop and continuously update the comprehensive ethical guidelines.

Physicians should be granted access to independent drug information resources and should be educated about the potential biases. Financial disclosures, restrictions on gifts and their monetary value, and prescription monitoring systems that promote generic prescriptions are vital steps towards unbiased, evidence-based medical practices that prioritize patient welfare.

Limitations

While this study yields results congruent with the literature, we acknowledge certain limitations. The sampling frame obtained from LOP was 5936 email addresses, which may not account for the entire medical cohort in Lebanon.

The survey employed as the primary data collection tool was in an online format, thereby potentially underrepresenting those who do not use email for professional purposes.

A reporting bias may exist among participants due to inherent sensitivities about self-disclosure

within their practice. Certain physicians may have been reserved in their responses, thereby potentially influencing the veracity of the data. Moreover, the study did not dig deeply into the prescription patterns and the medications most targeted by the pharmaceutical companies. The broad nature of this topic made it difficult to address within the scope of this study.

While the findings of this study contribute valuable insight that resonates with existing literature, judicious interpretation should be exercised. Future studies could address these constraints for a more holistic understanding of the issue.

Conclusion

Although Lebanese physicians were aware of the effect promotional activities could have on their prescription behaviours, many perceived interactions with pharmaceutical companies as an indispensable part of normal practice. While many promotional gifts are relevant to patients and would enhance their care, a large proportion directly and solely benefit the physicians.

Physicians need to be familiar with and abide by the Code of Medical Ethics, which dictates the type of promotional activities allowed within practice in Lebanon. It would be sensible for medical institutions and medical schools to brief healthcare professionals on common promotional activities and the possible influence they may have on prescription practices.

Governing bodies like the Lebanese Ministry of Public Health and the Lebanese Order of Physicians are responsible for promoting and enforcing clear guidance on the ethics of prescriptions. Medical practice revolves around patients' well-being, which is a priority when commercialism and consumerism are infiltrating most professions.

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Croyances et pratiques des médecins au Liban concernant les cadeaux promotionnels et leurs interactions avec les laboratoires pharmaceutiques

Résumé

**WHO EMRO | Beliefs and practices of physicians in Lebanon regarding promotional gifts and interaction

Contexte : Les laboratoires pharmaceutiques investissent des sommes importantes dans l'offre de cadeaux promotionnels afin d'influencer les prescriptions de médicaments par les médecins, mais les informations publiées déterminant l'impact de ces pratiques sur les soins de santé sont limitées.

Objectif : La présente étude a pour objectif d'évaluer les croyances et les pratiques des médecins au Liban concernant les cadeaux promotionnels et leurs interactions avec les représentants de laboratoires pharmaceutiques.

Méthodes : La présente étude transversale a été menée entre décembre 2019 et janvier 2020 au moyen d'un questionnaire envoyé par courriel à 5936 médecins de différentes spécialités inscrits à l'Ordre des médecins libanais. L'évaluation a été effectuée à l'aide d'un outil validé et l'analyse des données a été réalisée au moyen du logiciel SPSS version 26.0.

Résultats : Sur les 268 répondants, 188 (70,4 %) ont indiqué que les médecins au Liban acceptaient des cadeaux de la part de représentants de laboratoires pharmaceutiques. La plupart d'entre eux (31,7 %) communiquaient avec des représentants de laboratoires plus d'une fois par semaine. Les échantillons de médicaments (251) et les fournitures de bureau (222) étaient les cadeaux les plus fréquemment acceptés par les médecins qui ont admis en avoir reçu. Dans l'ensemble, 225 répondants (84,9 %) estimaient que les ordonnances prescrites par les médecins au Liban étaient influencées par les cadeaux reçus. Seuls 74 médecins (40,0 %) parmi ceux qui ont accepté des cadeaux de la part de laboratoires pharmaceutiques considéraient que cette pratique était contraire à l'éthique, et près de la moitié ignoraient si le Code libanais de déontologie médicale leur permettait de les accepter.

Conclusion : Bien que les médecins au Liban soient conscients des conséquences que les cadeaux offerts par les laboratoires pharmaceutiques pourraient avoir sur leurs habitudes de prescription, beaucoup d'entre eux continuent de les accepter. La présente étude fournit des données probantes aux responsables de l'élaboration des politiques pour la prise de décision concernant les directives éthiques régissant les interactions entre les médecins et les laboratoires pharmaceutiques dans le pays.

معتقدات الأطباء وممارساتهم في لبنان فيما يتعلق بالهدايا الترويجية وتفاعلاتهم مع شركات الأدوية

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