

ETHICAL PRACTICES IN DRUG PRESCRIBING. A COMPARATIVE STUDY BETWEEN DOCTORS' AND PHARMACISTS' OPINION ABOUT DRUG PRESCRIBING IN ROMANIA

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Abstract: The prescription of drugs is influenced by a number of factors with a great impact upon the health of the main beneficiaries of health services. The purpose of the study is to identify the perception of doctors and pharmacists on drug prescription practices adopted by doctors. Material and Methods: a number of 349 subjects (149 pharmacists and 200 doctors) answered a survey about the perception of drug dispensing in Romania. Variables like age, work environment (urban, rural), length of employment were taken into account. Results: When prescribing a treatment, 93% of doctors follow the standard treatment protocol for the given diagnosis and 93,5% of them are declaring that personal resources are the main source for training while the percent appreciated by pharmacists is evaluated to 65,78%. A total of 50% of doctors are considering other criteria than the treatment when prescribing a drug (financial contribution for the patient or National Health Insurance House). A total of 59% of doctors are recommending over-the-counter products while pharmacists consider that is happening in more than 70% of the cases. Conclusions: There are differences of opinion between doctors and pharmacists regarding doctor's practices of prescribing drugs to their patients, like: kinds of sponsorship for the continuing education, the relationship with the pharmaceutical representative or the frequency of prescribing over-the-counter products or supplements when they are recommending a certain treatment.

Keywords: doctor, pharmacist, ethical practice, prescription, drug

INTRODUCTION

The promotion, prescription and dispensing of drugs are influenced by a number of factors that ultimately impact the health of the main beneficiaries of health service, the patients.

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The promotion (made by the medical representative), prescription (made by the doctor) and dispensing (the pharmacist's duty) it is supposed to lead to the best solution for treating the patient. The perfect harmonization of the three parties should assure to the beneficiary the most comfortable solution: the proper medical treatment, the most efficient way to procure it, the best price to pay for it.

But the roles of the three parties are sometimes changing between them because nowadays the patient frequently becomes an expert. It is obviously that patients have easy access to information through the internet, mass media, and educational activities in hospitals, communities and patient groups¹. Excepting his own financial resources that may determine the access to health care services, the patient's treatment is influenced by several variables, determined by doctor's, pharmacist's and healthcare policy makers².

Many of studies are focused on the doctors' ethical behavior about prescribing drugs³, pharmacists' practices of selling drugs⁴ or the promoting practices of pharmaceutical representatives⁵. Some of them are related to the conflict of interest or strictly to the professional activity regarding the patient; others are studying the ethical practices of prescribing or the doctor-pharmaceutical representative relationship, focusing on gifts, sponsorships or free samples or free-lunches. Some studies are pointing the various numbers of influencing methods adopted by the pharmaceutical representative⁶ and the need for an

¹ Cordier, J. F. (2014). The expert patient: towards a novel definition. *European Respiratory Journal*, 44(4), pp. 853-857.

² Pulvirenti, M., McMillan, J., & Lawn, S. (2014). Empowerment, patient centred care and self-management. *Health Expectations*, 17(3), pp. 303-310.

³ Sztankovszky, L-Z., Iorga, M., Gheonea & C. Russu, G. (2015). The ethics of off-label prescribing of drugs in children. The dilemma of sildenafil. *Romanian Journal of Pediatrics*, LXIV (2), pp. 126-130.

⁴ Iorga, M., Sztankovszky, L-Z., Soponaru, C. & Gardikiotis, I. (2015) Pharmacists' attitudes and practices regarding drug dispensing in Romania. *Revista Farmacia*, 63(4), pp. 601-606.

⁵ Sztankovszky, L-Z., Soponaru, C., Iorga, M. & Astarastoe, V. (2015) Pharmacists' and doctors' perception of pharmaceutical representative's ethical practices of drug promotion in Romania. A comparative study *Postmodern Openings*, 6(1), pp. 189-199.

⁶ Wilkes, M. S, & Hoffman, J. R. (2001). An innovative approach to educating medical students about pharmaceutical promotion. *Academic Medicine*, 76(12), pp. 1271-1277.

objective and professional medical conduct⁷. Doctors' prescriptions are influenced by a number of aspects, one of the most important being his relationship with the pharmaceutical representative. For example, in United States, the number of pharmaceutical representative was about 90.000 full employees in 2001, one for every 4,7 office-based physicians and between 12-15 billion dollars were invested in marketing to physicians, meaning over 8.000 dollars for each practicing doctor⁸.

A lot of strategies are used in order to facilitate their access to doctors: free gifts, educational competitions, free weekends, free lunches.

Pharmaceutical industry plays an important role for the economy in most of the countries. In 2002, almost 15% of the United States' Gross Domestic Product (GDP) was assured by the pharmaceutical industry market.

Because most of the expenses are oriented to the selling process and not to development or researches, the pharmaceutical industry is oriented to the marketing of new products⁹. Taking this into consideration, doctors are the most important target of pharmaceutical representatives¹⁰. For example, 63% of the 25.000 spent in New Zealand by the pharmaceutical industry each year per general practitioner on promotion is allocated to pharmaceutical representative activity¹¹.

Doctors report that they use interaction with pharmaceutical companies as a source of information about new drugs. Promotion

⁷ Shabih H. Zaidi, (2014). *Ethics in Medicine*, Springer International Publishing Switzerland

⁸ Kawachi, I. & Lexchin, J. (1992). Doctors and the drug industry: therapeutic information or pharmaceutical promotion? In: Davis P (ed). *For health or profit? Medicine, the pharmaceutical industry, and the state*, in New Zealand. Auckland, New Zealand: Oxford University Press.

⁹ Marco, C. A., Moskop, J. C., Solomon, R. C., Geiderman, J. M., Larkin, G. L. (2006). Gifts to physicians from the pharmaceutical industry: an ethical analysis. *Annals of emergency medicine*, 48(5), pp. 513-521.

¹⁰ Manchanda, P., Honka, E. (2005). Effects and Role of Direct-to-Physician Marketing in the Pharmaceutical Industry: An Integrative Review, *The. Yale J. Health Pol'y L. & Ethics*, 5, p. 785.

¹¹ Gasson W. (1984). New Zealand's drug dilemma: the best or the cheapest? *Better Business*; 48, pp. 8 -13.

influences attitudes more than doctors realize. The methods most used to influence doctor's prescription are presented by Bardes¹² :

- Information for physicians. Sales representatives from pharmaceutical companies, like their counterparts in other fields, generally take the advantages of their products over those of other manufacturers. They often substantiate their assertions with scientific facts – though of variable relevance. The representatives are naturally one-sided.
- Information for patients. Sales representatives often leave pamphlets and brochures for distribution to patients. These are sometimes neutral but often contain a subtle “pitch” in favor of a drug.
- Teaching materials. Teachers at medical schools and hospitals sometimes accept slides or other teaching materials. Although some are quite impartial, such as depictions of physiology, these can be followed by subtle arguments in favor of specific pharmacologic approaches, which in turn can be favorable to the manufacturer.
- Gifts to physicians, and staff. These range from cheap pens to large consultation fees, major travel stipends, or honoraria. The latter may be appropriate if the compensation is commensurate with the educational service provided – but the risk is that an expensive junket may serve more to curry favor than to support learning.
- Free medications for patients, physicians, and staff. The “samples closet” found in many physicians’ offices is stocked with free drugs dropped off by drug representatives. They can provide a significant service to the indigent, and a pleasant convenience to the rest of us. To receive these drugs, the physician must sign a document brought by the representative, who generally slips in a few words supporting the company’s product line.

The present research aims to identify some of the doctor's practices regarding drug prescription, their relationship with the pharmacist and the pharmaceutical representative and other variables that are influencing drug prescription (age, environment, socio-economical status of the patient, health policy ruled by the *National Health Insurance House*).

¹² Bardes C.L. (2005). Ethics and Prescribing. In De Michael A. Santoro, Thomas M. Gorrie, *Ethics and the Pharmaceutical Industry*, Cambridge University Press.

The study was approved by “Gr.T.Popa” University of Iasi. Two types of questionnaires were distributed to doctors and pharmacists, in order to compare the results obtained from doctors’ statistical data analysis of the responses to pharmacists’ opinion about doctors’ practices.

MATERIAL AND METHODS

From January to July 2015, a number of 349 subjects (149 pharmacists and 200 doctors) answered a survey about the perception of drug dispensing by doctors. The subjects are working in 16 different departments of Romania: Bihor, Cluj, Braşov, Alba, Bistrita-Năsăud, Sibiu, Harghita, Mureş, Bucureşti, Vrancea, Constanţa, Bacău, Neamţ, Iaşi, Suceava and Vaslui.

Variables like age, work environment (urban, rural), length of employment were taken into account. A number of 7 dimensions were defined by several items, in order to identify doctors’ perception of drug dispensing practices, studying the following behaviors of doctors:

1. criteria the doctor takes into account when prescribing a treatment (personal experience with a certain molecule; meta-analyses connected to the given treatment published in specialized journals; the innovative character of the given drug; the standard treatment protocol for the given diagnosis).
2. means by which the doctor covers the costs of his continuing education and training (sponsorships from the pharmaceutical industry; sponsorships from the employing institution; national and international projects/grants; personal resources).
3. criteria used by the doctor to prescribe a treatment (the patient’s financial capacity; budgetary limitations from the National Health Insurance House (the possibility of subsidized drugs); drug availability in local pharmacies).
4. the importance of the doctor's relationship with the pharmaceutical representative in the doctor's prescription of a certain drug.
5. doctors' recommendation of OTC products and supplements in addition to the treatment of the given pathology by Rx medication.
6. prescribing drugs with international nonproprietary names (INNs).
7. prescribing INNs and, at the same time, recommending the brand name product.

The answers were scaled from 1 to 4 (1 = never, 2 = rarely, 3 = often, 4 = always). Collected data were analysed by using SPSS

statistical program, we used *Mann-Whitney U* test in order to identify the significant differences between doctors and pharmacists' opinions regarding the practices of prescribing drugs by doctors.

RESULTS AND DISCUSSIONS

Between January and June 2015, a number of 349 subjects (200 doctors and 149 pharmacists answered to a questionnaire regarding ethical practices of prescribing drugs.

The sample of doctors is aged from 25 to 73 ($M = 42,85 \pm 11,10$), with 1-50 years of work experience in the medical field ($M = 15,96 \pm 10,70$). A total of 36,5% of all surveyed doctors are men and 63,5% are women. A total of 97% work in an urban environment.

Pharmacists' ages range from 24 to 70 ($M = 38,54 \pm 10,29$), with 1-48 years of work experience in the pharmaceutical field ($M = 14,47 \pm 10,00$). A percentage of 91.95% of surveyed pharmacists are women and 87,92% work in pharmacies in the urban environment.

A quantitative data analysis was done reflected from the doctors' opinion and pharmacists' opinion regarding drug prescription.

Doctor's perspective:

The quantitative data analysis from the doctors' perspective showed the following answers to the following categories with their corresponding items:

1. Criteria taken into account by the doctor when prescribing a treatment, the distribution of the answers is:

- a. personal experience with a certain molecule ($M = 2,96 \pm 0,83$), for which never = 8%, rarely = 12,5%; often = 54,5%; always = 25%,
- b. the clinical observations and practical results of the drug, ($M = 3,25 \pm 0,72$): 3,5% never, 6% rarely, 52,% often, 38,5% always,
- c. meta-analyses connected to the given treatment published in specialized journals ($M = 2,60 \pm 0,89$), for which never = 11%; rarely = 34,5%; often = 37,5%; always = 17%,
- d. the innovative character of the given drug ($M = 2,86 \pm 0,81$) for which never = 5%; rarely = 26%; often = 47%; always = 22%,
- e. the standard treatment protocol for the given diagnosis ($M = 3,46 \pm 0,69$), for which never = 2%; rarely = 5,5%; often = 37%; always = 55,5%.

2. Regarding the items that asks about the methods which the doctor covers the costs of his continuing education and training:

- a. sponsorships from the pharmaceutical industry ($M = 1,84 \pm 0,85$), for which never = 41,5% %; rarely = 37% %; often = 17,5%; always = 4%,
 - b. sponsorships from the employing institution ($M = 1,45 \pm 0,74$), for which never = 66%; rarely = 27%; often = 3%; always = 4%,
 - c. national and international projects/grants ($M = 1,53 \pm 0,78$), for which never = 62%; rarely = 26,5%; often = 8%; always = 3,5%,
 - d. personal resources ($M = 3,42 \pm 0,66$), for which never = 1,5%; rarely = 5%; often = 43,5%; always = 50%.
3. The criteria used by the doctor to prescribe a treatment:
- a. the patient's financial capacity - for which never = 19,5%; rarely = 20,5%; often = 41%; always = 19%,
 - b. budgetary limitations from the National Health Insurance House (the possibility of subsidized drugs) for which never = 17,5%; rarely = 24%; often = 41%; always = 17,5%,
 - c. the drug's availability in local pharmacies - for which never = 19%; rarely = 29,5%; often = 37%; always = 14,5%.
4. The importance of the doctor's relationship with the pharmaceutical representative in the doctor's prescription of a certain drug ($M = 2,6 \pm 0,75$), for which never = 7.8%; rarely = 21.9%; often = 42.2%; always = 28.1%.
5. The recommendation of OTC products and supplements in addition to the treatment of the given pathology by Rx medication ($M = 2.19$), for which never = 7,5%; rarely = 33,5%; often = 50,5%; always = 8%.
6. Prescribing drugs with international nonproprietary names (INNs) ($M = 3,05 \pm 0,78$), for which never = 4,5%; rarely = 14,5%; often = 52,5%; always = 28,5%.
7. Prescribing INNs and, at the same time, recommending the brand name product ($M = 2,77 \pm 0,77$), for which never = 8 %; rarely = 32%; often = 47%; always = 17%.

The analysis of the results are identified that 93% of physicians primarily take into account standard treatment protocol for a particular diagnosis. In order of importance are also identified: clinical observations, experience with a certain molecule, information from recent studies and meta-analyzes mentioned last published in journals with impact.

A total of 93.5% of doctors say that they support their professional training by their personal financial efforts. Some doctors view that financial support for pharmaceutical companies is a way to be able to

ensure participation in courses and trainings. Another financial source is the proceeds of national and international projects and grants and also, in a very small extent, training is supported by employing institution

In prescribing treatment for patients, more than 50% of doctors take into account the following aspects: financial contribution to patient, limitations from the *National Health Insurance House* and drug availability in pharmacies in the area.

Only 28.5% of physicians sustain that relationship with the medical representative is never important when prescribing a drug. A percentage of 59% of doctors recommend *over-the-counter* products and supplements to complement the treatment administered to a patient and over 80% of them are writing prescriptions using the common name of the drug.

Pharmacist's perspective:

A quantitative data analysis was done from the pharmacists' perspective regarding ethical practices of prescribing drugs by doctors and revealed the following distribution of the answers to the categories and items:

1. criteria taken into account by the doctor when prescribing a treatment:
 - a. personal experience with a certain molecule ($M = 2,96 \pm 0,83$), for which never = 1,3%, rarely = 12,8%; often = 55,7%; always = 30,2%,
 - b. the clinical observations and practical results of the drug, ($M = 3,25 \pm 0,72$): 39,6% rarely, 42,3% often, 18,2% always,
 - c. meta-analyses connected to the given treatment published in specialized journals ($M = 2,60 \pm 0,89$), for which never = 12,8%; rarely = 47%; often = 28,2%; always = 12,1%,
 - d. the innovative character of the given drug ($M = 2,86 \pm 0,81$) for which never = 6%; rarely = 40,3%; often = 40,9%; always = 12,8%,
 - e. the standard treatment protocol for the given diagnosis ($M = 3,46 \pm 0,69$), for which never = 2%; rarely = 5,5%; often = 37%; always = 55,5%.
2. means by which the doctor covers the costs of his continuing education and training:

- a. Sponsorships from the pharmaceutical industry ($M = 2,67 \pm 0,92$), for which never = 12,08%; rarely = 27,52%; often = 40,94%; always = 19,46%,
 - b. Sponsorships from the employing institution ($M = 2,08 \pm 0,91$), for which never = 30,87%; rarely = 37,58%; often = 24,16%; always = 7,38%,
 - c. National and international projects/grants ($M = 2,06 \pm 0,95$), for which never = 36,24%; rarely = 27,52%; often = 30,20%; always = 6,04%,
 - d. Personal resources ($M = 2,79 \pm 1,04$), for which never = 16,11%; rarely = 18,12%; often = 36,24%; always = 29,53%.
3. criteria used by the doctor when prescribing a treatment. At this question, the answers to the items are presented in Table 1:

Criteria used by the doctor when prescribing a treatment	never	rarely	often	always
the patient's financial capacity ($M = 2,52 \pm 0,95$),	12,8%	42,3%	24,8%	20,1%
budgetary limitations from the National Health Insurance House (the possibility of subsidized drugs) ($M = 2,81 \pm 0,93$)	9,4%	26,2%	37,6%	26,8%
drug availability in local pharmacies ($M = 2,46 \pm 0,82$)	11,4%	40,3%	38,3%	10,1%

Table 1. Criteria used by doctors when prescribing a treatment

4. the importance of the doctor's relationship with the pharmaceutical representative in the doctor's prescription of a certain drug ($M = 2,81 \pm 0,81$), for which never = 5,37%; rarely = 28,19%; often = 46,31%; always = 20,13%.
5. the recommendation of OTC products and supplements in addition to the treatment of the given pathology by Rx medication ($M = 2,83 \pm 0,63$), for which never = 0,67 %; rarely = 27,52%; often = 58,73%; always = 12,08%.
6. prescribing drugs with international nonproprietary names (INNs) ($M = 3,21 \pm 0,63$), for which never = 0,67%; rarely = 9,40%; often = 9,40%; always = 32,21%.

7. prescribing INNs and, at the same time, recommending the brand name product ($M = 2,71 \pm 0,65$), for which never = 0%; rarely = 39,60%; often = 49,66%; always = 10,74%.

The statistical analysis of responses to this question identifies that pharmacists agree, most frequently (65.78%) that doctors use their personal financial resources for professional training. Some of them appreciate that doctors view that financial support from the pharmaceutical companies as a way to be able to ensure participation in courses and trainings. Another financial source is the proceeds of national and international projects and grants and, in a very small extent, training is supported by employing institution.

According to pharmacists, doctors take into account more than 50% of the limitations of the *National Health Insurance House*, when prescribing a treatment to a patient. A total of 66% of pharmacists consider that the doctor-pharmaceutical representative relationship is important for prescribing drugs. Also, in pharmacists' opinion, 70% of doctors recommend *over-the-counter* products and supplements to complete the recommended treatment of a patient. The majority of them (90%) consider that doctors are writing recipes using common name of drugs and 60% of them recommend the product trade name when prescribing treatment.

COMPARING RESULTS

The comparing results between doctors and pharmacists' opinion was done using Mann-Whitney test for independent samples. Significant differences were obtained to the following items, presented in Table 2, meaning that:

1. When prescribing a drug, the doctor takes into account the clinical observation and the practical results of it ($U = 9600.500$, $Z = -6.146$, $p = ,000 < 0,05$), meaning that pharmacists are appreciating as being less frequent use this criteria by doctors (M rang = 139,43) than doctors themselves (M rang = 201,50) when prescribing a drug.

2. Regarding the meta-analysis connected to the given treatment that are published in international journals, ($U = 12855.000$, $Z = -2.320$, $p = ,020 < 0,05$), pharmacists are considering that this criteria less frequently used by doctors (M rang = 161,28) comparing to doctors' opinion (M rang = 185,23).

3. Considering the innovative characteristic of the drug, ($U = 12236.000$, $Z = -3.058$, $p = ,002 < 0,05$), doctors are considering more

frequently that this criteria is taking into account when they prescribe a drug (M rang = 188,32) than pharmacists (M rang = 157,12).

4. Regarding the standard protocol (U = 12765.500, Z = -2.550, p = ,002 < 0,011) used as a criteria when prescribing a treatment, doctors are considering that this criteria is more frequently used by them (M rang = 185,23) than in pharmacists' opinion (M rang = 160,67).

5. In what concerns the sponsorships from the pharmaceutical companies, there is also a significant difference between doctors and pharmacists' opinion, (U = 7804.500, Z = -7.944, p = ,000 < 0,05). Pharmacists consider that this kind of sponsorship is more frequent (M rang = 222,62) than it is in doctors' opinion (M rang = 139,52).

6. Regarding the item referring to the financial resources obtained from the employing institution (U = 8900.000, Z = -7.047, p = ,000 < 0,05) we identified that pharmacists considered that it is more frequent sponsorship (M rang = 215,27) than in doctors' opinion (M rang = 145).

7. Referring to the question *Means by which the doctor covers the costs of his continuing education and training: National and international projects/grants* (U = 10188.000, Z = -5.507, p = ,000 < 0,05) pharmacists consider that it is more frequent sponsorship (M rang = 206,62) than in doctor's opinion (M rang = 151,44).

8. Regarding the item referring the support with personal resources for assuring their continuing education and trainings (U = 9903.000, Z = -5.772, p = ,000 < 0,05) doctors consider as being more frequent (M rang = 199,99) than pharmacists.(M rang = 141,46).

9. Considering the item *Criteria used by the doctor when prescribing a treatment: budgetary limitations from the National Health Insurance House* (the possibility of subsidized drugs) (U = 13010.000, Z = -2.125, p = ,034 < 0,05) there is a significant difference between doctors' and pharmacists' opinion, in the way that pharmacists consider this practice more frequently adopted by doctors (M rang = 187,68) than doctors themselves (M rang = 165,55).

10. In what concerns the importance of the doctor's relationship with the pharmaceutical representative in the doctor's prescription of a certain drug (U = 9589.000, Z = -5.962, p = ,000 < 0,05)pharmacists are considering that this relationship is more frequently important for prescribing drugs (M rang = 210,64) than in doctors' opinion (M rang = 148,45).

11. Important significant difference was identified also in what concern the item *The recommendation of over-the-counter products*

and supplements in addition to the treatment of the given pathology by Rx medication ($U = 9589.000$, $Z = -2.787$, $p = ,005 < 0,05$) meaning that pharmacists consider that doctors are recommending more frequently over-the-counter products and supplements ($M \text{ rang} = 190,67$) than in doctors' opinion ($M \text{ rang} = 162,32$).

<i>Items</i>	<i>Mann-Whitney U</i>	<i>Wilcoxon W</i>	<i>Z</i>	<i>Asymp. Sig. (2-tailed)</i>
M1b Criteria taken into account by the doctor when prescribing a treatment: the clinical observations and practical results of the drug	9600.500	20775.500	-6.146	.000
M1c Criteria taken into account by the doctor when prescribing a treatment: meta-analyses connected to the given treatment published in specialized journals	12855.000	24030.000	-2.320	.020
M1d Criteria taken into account by the doctor when prescribing a treatment: the innovative character of the given drug	12236.000	23411.000	-3.058	.002
M1e Criteria taken into account by the doctor when prescribing a treatment: the standard treatment protocol for the given diagnosis	12765.500	23940.500	-2.550	.011
M2a Means by which the doctor covers the costs of his continuing education and training: Sponsorships from the pharmaceutical industry	7804.500	27904.500	-7.944	.000
M2b Means by which the doctor covers the costs of his continuing education and training: Sponsorships from the employing institution	8900.000	29000.000	-7.047	.000
M2c Means by which the doctor covers the costs of his continuing education	10188.000	30288.000	-5.507	.000

and training: National and international projects/grants				
M2d Means by which the doctor covers the costs of his continuing education and training: Personal resources	9903.000	21078.000	-5.772	.000
M3b Criteria used by the doctor when prescribing a treatment: budgetary limitations from the National Health Insurance House (the possibility of subsidized drugs)	13010.000	33110.000	-2.125	.034
M4 The importance of the doctor's relationship with the pharmaceutical representative in the doctor's prescription of a certain drug	9589.000	29689.000	-5.962	.000
M5 The recommendation of over-the-counter products and supplements in addition to the treatment of the given pathology by Rx medication	9589.000	32664.500	-2.787	.005

Table 2. Significant differences between doctors and pharmacists answers to the items

CONCLUSIONS

When prescribing a treatment, 93% of doctors follow the standard treatment protocol for the given diagnosis and 93,5% of them are declaring that personal resources are the main source for training while the percent appreciated by pharmacists is evaluated to 65,78%. A total of 50% of doctors are considering other criteria than the treatment when prescribing a drug (financial contribution for the patient or National Health Insurance House). A total of 59% of doctors are recommending over-the-counter products while pharmacists consider that is happening in more than 70% of the cases.

There are differences of opinion between doctors' and pharmacists regarding doctor's practices of prescribing drugs to their patients, like: kinds of sponsorship for the continuing education, the relationship with the pharmaceutical representative or the frequency of prescribing over-the-counter products or supplements when they are recommending a certain treatment.

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