

DOI: <https://dx.doi.org/10.18203/2319-2003.ijbcp20233195>

Original Research Article

Knowledge attitude and practices of drug promotional literature: a clinician's perspective

Kavita M. Jaiswal*, Austina A., Jijo Philip Abraham, Augustine V. Thomas

Department of Pharmacology, Government Medical College and Hospital, Akola, Maharashtra, India

Received: 25 August 2023

Accepted: 26 September 2023

***Correspondence:**

Dr. Kavita M. Jaiswal,

Email: jaiswalkavita37@yahoo.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Promotion of drugs by pharmaceutical industries is fully regulated by drug regulators. Doctors are focus of intense marketing by representatives of pharmaceutical companies (MR). It is reported that very few physicians are equipped with the necessary skills and knowledge to critically assess the information delivered in drug promotional literature (DPL). Hence this study was carried out with the objective to determine knowledge, attitude and practices of doctors about the DPL

Methods: This was a questionnaire-based study population included clinicians working in a government set up and others doing private practice. Questionnaire was circulated online on social media platforms via Google forms.

Results: The 32.11% participants were aware of regulations and guidelines of DPL in India 80.7% participants searched for cost of medicine on DPL, 54.12% respondents perceive that the product claims made on DPL are balanced and supported by good evidence, 56.88% participants opined that their integrity is compromised by accepting gift from MR, 43.1% participants are exposed to drug advertisement through social media and 51.06% of them opined that their prescribing habits are influenced through this. Writing brand names while prescribing is significantly more in private practitioners as compared to doctors employed in government set up.

Conclusions: DPL serves to update the knowledge of the busy clinicians of the latest developments in the medical field. Quality check of drug promotion on social media is the need of the hour as this is influential. Private practitioners need to be addressed regarding enforced laws for rational prescribing.

Keywords: DPL, Questionnaire based study, Rational prescribing, MR

INTRODUCTION

In last few years there are worthy progressions in pharmacological research and drug discovery. As a result, new drugs are getting approved in the market at a fast pace. DPL are major promotional tool for marketing new drugs/new indications of existing drug. Pharmaceutical companies use DPLs to provide drug information to health professionals and promote the prescription of their drugs. In this era of aggressive marketing of pharmaceutical products, promotion plays an important role. World health organization (WHO) defines drug promotion as "All the information and persuasive activities of manufacturers and distributors, the effect of which is to induce prescription,

supply, and purchase and/or use of medicinal drugs."¹ All physicians should keep their drugs related knowledge up to date with evidence-based principles. DPLs help physician in this regard. There are lot of confirmations that drug advertisement by pharmaceutical industries have huge impact on prescribing behavior of prescribers. Ideally medical practice should not be influenced by gifts, sponsoring of conference attendance, holiday trips, free lunches and other various type of incentives that may be used as advertisement strategies.

Promotion of drugs by pharmaceutical industries is fully regulated by drug regulators and/ constitutional law. Food and drug administration (FDA) controls advertisements and promotion of drugs in US. In India it is regulated by

drugs controller general of India (DCGI), uniform code of pharmaceutical marketing practices (UCPMP) (both under government of India), drugs and magic remedies (Objectionable advertisements) act, 1954 and organization of pharmaceutical producers of India (OPPI), international federation of pharmaceutical producers of India (IFPMA) code of practice 2012 and update of 2019.²

Pharmaceutical companies mostly prefer direct-to-physician marketing as their marketing strategies. This is by in person visiting the physician and then presenting visual aids like brochures leaflets, pamphlets as well as distributing free medication samples by MR. Other mode of promotion of drugs for practicing doctors is advertisements of drugs in medical journals, on social media platforms like WhatsApp, personal e-mails. DPLs help in launch and increase sale of drugs. It also helps update physician's knowledge about particular advertised drug. DPLs with unethical claims can be misleading to physicians. Companies spend around 1/3rd of all sales' revenue on marketing their products, which is twice that spent on R and D.³ Investing too much on promotion of drugs by pharmaceutical companies can indirectly increase the cost of the drug and thus taxing the patients more.

As per WHO following criteria indicate the completeness of a promotional literature:⁴ Generic name of drug, brand name of drug, content of active ingredient per dosage form, name of other ingredients known to cause problems, approved therapeutic uses, dosage form or regime, ADRs, precautions, contraindications and warnings, major interactions, name and address of manufacturer and reference to scientific literature as appropriate.

During course of their practice, doctors are focus of intense and aggressive marketing by representatives of pharmaceutical companies. For busy doctors either due to lack of time/lack of access to other independent sources of drug information these representatives and DPL provided by them are chief source of drug information about newly introduced drugs Further this information comes along with promotional items like pen, writing pads/gifts which in turn may influence doctor who may end up prescribing drug on ground that the note may be scientifically/ethically correct. Thus, rational prescribing takes back seat. Therefore, it is essential that doctors develop skills to critically assess information and claims and then prescribe said drug. It is reported that very few physicians are equipped with necessary skills and knowledge to critically assess information delivered in DPL.⁵ Hence this study was carried out with the objective to determine knowledge, attitude and practices of prescribing doctors about DPL.

METHODS

Study design

This was a cross-sectional questionnaire-based study conducted from 25th July 2023 to 25th August 2023 in a

tertiary care teaching institute. The participants included the medical officers' junior residents perusing post-graduation and teaching faculty in a tertiary care teaching institute who are from clinical branches and who write the prescriptions for patients. The participants also included the doctors who are in private practice. Medics from para-clinical branches who are not writing prescriptions were excluded. The study was approved from institutional ethics committee.

The study instrument was a self-developed, pre-validated, semi-structured questionnaire consisting of both open and close-ended items. The questions were framed to obtain information about respondents' knowledge, attitudes and practice about DPL along with their socio-demographic details. The questionnaire was first pre-tested in five participants and suitable modifications were accordingly done. The questionnaire was circulated online on social media platforms (WhatsApp, E mail, Twitter) via Google forms Each eligible participant was briefed about the study and asked to complete an informed consent form before completing an anonymous online survey. The study participation was voluntary. Respondents were also allowed to offer their own suggestion /remarks apart from answering the questions.

Statistical analysis

At the end of the study, all the data were pooled and expressed as counts and percentages in MS excel. Pearson's Chi Square test was used for determining the significance. A $p < 0.01$ considered as the statistically significant.

RESULTS

Socio-demographic profile of participants is summarized in Table 1. A total of 109 participants completed the questionnaires. Sixty-five respondents were men and 44 were women. Average age of participants was 30 years. The commonest information searched for by the clinicians on the DPL was cost of medicine (80.7%) followed by generic names of medicines (75.2), therapeutic indications (67%), ADRs (63.3%) and brand names of medicines (60.6%) (Table 2). Though the participants were exposed to different sources of information their prescribing skills were not influenced significantly as seen in Table 3. Knowledge, attitudes and practices of participants regarding DPL is seen in Table 4. Preference of writing brand names while prescribing is significantly more in private practitioners as compared to doctors employed in government set up (Table 5).

Medicine and allied includes doctors practicing general medicine, respiratory medicine, psychiatry skin and venereal diseases and paediatrics, surgery and allied includes doctors practicing general surgery, ophthalmology, otorhinology, obstetrics and the gynaecology.

Table 1: Socio-demographic characteristics of participants, (n=109).

| Characteristics | N (%) |
|------------------------|------------|
| Age (In years) | |
| 24-30 | 72 (66.05) |
| 31-40 | 27 (24.77) |
| 41-50 | 5 (4.85) |
| >50 | 5 (4.85) |
| Gender | |
| Male | 65 (59.63) |
| Female | 44 (40.36) |
| Broad specialty | |
| Medicine and allied | 44 (40.36) |
| Surgery and allied | 24 (22.01) |
| General practice | 41 (37.61) |
| Designation | |
| JR 1, JR2, JR3 | 47 (43.11) |
| Private practitioners | 29 (26.60) |
| Medical officers | 20 (18.34) |
| Teaching faculty | 13 (11.92) |

JR1- first year resident doctor, JR2-second year resident doctor, JR3- third year resident doctor.

Table 2: Information sought in the DPL by the participants, (n=109).

| Information in DPL | N (%) |
|---|------------|
| Cost | 88 (80.7) |
| Generic name | 82 (75.2) |
| Indications | 74 (67) |
| ADRs | 69 (63.3) |
| Brand name | 66 (60.6) |
| Drug interactions | 60 (55.04) |
| Precautions/ contraindications | 54 (49.54) |
| Major interactions | 40 (36.69) |
| Dosage form/ regimen | 11 (10.09) |
| Name and address of manufacturer | 10 (9.17) |
| Reference to scientific literature as appropriate | 10 (9.17) |

Table 3: Source of drug information influencing the prescribing habits (n=109)

| Source of drug information | Number of participants exposed to | | Prescribing habits influenced | Prescribing habits not influenced | P value |
|-------------------------------------|-----------------------------------|----|-------------------------------|-----------------------------------|---------|
| Face to face interaction with MR | Yes | 92 | 50 | 42 | 0.733 |
| | No | 17 | 10 | 7 | |
| Brochure/leaflet/calendar/pamphlets | Yes | 81 | 47 | 34 | 0.287 |
| | No | 28 | 13 | 15 | |
| Social media | Yes | 47 | 27 | 20 | 0.660 |
| | No | 62 | 33 | 29 | |
| E-mails | Yes | 22 | 14 | 8 | 0.364 |
| | No | 87 | 46 | 41 | |

Table 4: Knowledge attitudes and practices of participants regarding DPL, (n=109).

| Variables | Yes (%) | No (%) | Sometimes (%) |
|--|------------|------------|---------------|
| Knowledge | | | |
| Are you aware of WHO ethical criteria for the completeness of DPL? | 51 (46.78) | 58 (53.2) | ---- |
| Are you aware of regulations and guidelines of DPL in India? | 35 (32.11) | 74 (67.88) | ----- |
| Do you know how to critically assess the information on DPL for completeness and reliability | 27 (24.77) | 82 (75.22) | ----- |

Continued.

| Variables | Yes (%) | No (%) | Sometimes (%) |
|--|-------------|------------|---------------|
| Attitudes | | | |
| Do you think primary intention of pharmaceutical company is to promote their drug through DPL/ | 100 (91.74) | 9 (8.25) | ---- |
| Do you think that products claims made on DPL are balanced and supported by good evidence? | 59 (54.12) | 50 (45.87) | ---- |
| Do you think that your integrity is compromised by accepting gift and inducements from MR other than free medicine samples | 62 (56.88) | 47 (43.11) | ---- |
| Do you think your prescription writing skills are influenced by DPL? | 60 (55.04) | 49 (44.95) | ---- |
| Do you think that accuracy of information should be checked? | 95 (87.15) | 14 (12.84) | ---- |
| Do you think DPLs update your knowledge? | 74 (67.88) | 35 (32.11) | ---- |
| Practice | | | |
| Do you prefer writing generic name of drug while prescribing | 68 (62.38) | 28 (25.68) | 13 (11.92) |
| Do you prefer writing brand name of drug while prescribing | 40 (36.69) | 54 (49.54) | 15 (13.76) |
| Do you evaluate DPL received by you for good quality scientific evidence? | 22 (20.2) | 49 (44.95) | 38 (34.86) |
| Are you able to decide in what way the promoted drug is better than its counterparts as per STEP criteria | 46 (42.20) | 41 (37.61) | 22 (20.2) |
| Do you ask critical questions to MR about claims made in respective DPL? | 43 (39.44) | 54 (49.54) | 12 (11) |

Table 5: Respondents attitude about prescription writing, (n=109).

| Respondents' attitudes | Doctors in the tertiary care teaching institute, (n=80) | Private practitioners, (n=28) | P value |
|--|---|-------------------------------|------------|
| Prefer writing generic names | 60 | 8 | <0.00001** |
| Prefer writing brand names | 20 | 21 | |
| prescription writing skills are influenced by DPL | 44 | 17 | 0.736 |
| prescription writing skills are not influenced by DPL | 36 | 12 | |

** Statistically highly significant

DISCUSSION

DPL is a source of information about the new drugs or newer effects of the existing drugs. In the present study all the participants were exposed to DPL which co-relates the findings reported in other studies.⁶ This points out the importance of direct-to-physician pharmaceutical promotions. In the present study it was found that 46.78% of participants were aware of WHO ethical criteria for completeness of DPL. The most sought information in the DPL received by the participants was the cost of the drugs (80.7%) followed by generic names (75.2%), therapeutic indications (67%), ADRs (63.3%), brand names (60.6%), precautions/contraindications (49.5%). Very few doctors tried to look for other criteria mentioned by WHO like the dosage form/regime, name and address of the manufactures and reference to scientific literature as appropriate. This finding indicates that though some participants were aware about WHO Ethical criteria they did not pay attention to all criteria. Cost of the drugs seems to be the top priority by prescribing physicians for their patients since economy is the most important aspect considered from patient's point of view. Drugs with generic names are cheaper than the brand alternatives so this criterion took next position. Physicians also sought for therapeutic indications and ADRs of promoted drug, this

reflects they are in search of a safer alternative for same indications. On other hands doctors did not pay attention on name and address of manufactures and reference to scientific literature as appropriate which is alarming finding because credentials of the manufactures should be noted by practicing physicians for any untoward reaction of new promoted drug is to be informed to manufacturing company. Reference to scientific literature is very important criteria for critically assessing information mention on DPL regarding safety and efficacy of drug.

In the present study it was found that source of drug information influenced prescribing habits of participants though this finding was statistically insignificant. 84.4% participants had face to face interaction with MR and 49.39% of them admitted that their prescribing skills are influenced by this activity. Drug promotion by medical representatives is one of the factors that influences physicians' prescribing decisions and choice of drugs.⁷ In a study by Sushil Sharma amongst the various forms of DPL, brochures were adjudged as the most useful followed by interactions with medical representatives, advertisements in medical journals and direct mailers.⁸

In this era of global internet, websites and applications of social networking like LinkedIn, Face-book, WhatsApp,

Twitter can have as powerful an influence on physicians as they do on the public. In the present study 43.1% participants were exposed to drug advertisement through social media and 51.06% of them opined that their prescribing habits are influenced through this medium because the information is handy and easily accessible. It has been reported that growing number of physicians are using social media as a professional platform for health communication.⁹ Quality check of drug promotion on social media is the need of the hour.

In present study knowledge of participants regarding DPL found to be inadequate. The 46.78% aware of WHO ethical criteria 32.11% knowing who are regulatory authorities of drug promotion in India while only 24.77% knew how to critically assess information on DPL for completeness and reliability, 91.74% participants thought that primary intention of pharmaceutical company is to promote their drug through DPL and 54.12% respondents perceive that product claims made on DPL balanced and supported by good evidence. This finding coincides with study by Sharma et al where clinicians felt that accuracy of claims in various forms of DPL was between 50% and 75%.⁸

In the present study 56.88% participants thought that their integrity is compromised by accepting gift and inducements from MR other than free medicine samples which is welcoming attitude. Physicians and MRs defend that free medications can be used to help poor patients. Free samples can also be used to govern the dose and side-effects before the patient has to invest in them.^{10,11} It has been reported in literature that physicians receive gifts and inducements by pharmaceutical representatives.^{2,12} According to policymakers, such gifts have the potential to act as an ethical inducement and negatively impact prescribing behaviour and, ultimately, patient health.^{13,14} Policymakers have therefore tried to restrict the interaction between physicians and MRs, which is where most of the marketing occurs, by developing guidelines and making relevant policies. The WHO ethical criteria for Medicinal Drug Promotion requires MRs to have an appropriate educational background and be adequately trained with sufficient medical and technical knowledge and integrity to present information on products in an accurate, unbiased, and responsible manner. In the present study 55.04% participants opined that their prescription writing skills are influenced by DPL whereas research shows that majority of physicians are influenced that MR visits do not influence their prescribing behaviour.¹⁵⁻¹⁸

In the present study 87.15% participants opined that accuracy of information in DPL should be checked but in practice only 20.2% were found to do so. This may be because of time constraints, 39.44% participants were found to practice asking critical questions to MR in relation to claims made in the respective DPL. Such practices should be encouraged and busy doctors should manage their time for this activity. As per competency based medical education (CBME) pattern critical assessment of DPL by STEP (Safety, tolerability, efficacy,

price) criteria is being taught in subject of pharmacology in MBBS curriculum, this helps in rational prescribing.

In the present study there was statistically significant difference found in one aspect of prescribing habit of private practitioner versus the doctors working in government setup. The private practitioners practice writing brand name drugs for their patients while the doctors working in tertiary care teaching institute write generic names of drugs for their patients. This is a sign of influence by drug promoters. Awareness of enforced laws for this particular aspect needs attention of doctors running the private practice. Generic medicines play a key role in providing cost-effective health care, and their use is increasing worldwide. The Indian government is focused on promoting use of generic medicines in the country. In September 2016, the medical council of India (MCI) brought an amendment in the Indian medical council regulations (Professional conduct, etiquette and ethics) in clause 1.51. This is related to the use of generic names of drugs by doctors. It stated that 'every physician should, as far as possible, prescribe drugs with generic names legibly and preferably in capital letters and he/she shall ensure that there is a rational prescription and use of drugs'.¹⁹ This was followed by a statement made by the honorable prime minister of India on 17th April, 2017 regarding the framing of a law to make it mandatory for doctors to prescribe medicines by their generic names.²⁰ Another circular dated 22nd April, 2017 was released by the MCI to the medical community, asking them to follow the amended clause 1.5 and stated provision for disciplinary action against defaulters.¹⁹ Under national health mission (NHM), support is provided for provision of essential generic drugs free of cost in public health facilities.

CONCLUSION

DPL is an important source of information and can serve to update the knowledge of the busy clinicians of the latest developments in the medical field. In the present study it was found that participants were knowledgeable about the WHO ethical criteria of assessing the but DPL but could not practice every time because of busy schedule. The private practitioners are writing brand names of drugs while prescribing which is alarming, a sign of influence by drug promoters and needs to be addressed regarding enforced laws for this particular behavior. Competency based medical curriculum introduced in past years focuses on DPL teaching during graduation is another footstep in improving rational prescribing.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Criteria for Medicinal Drug Promotion, World Health Organization. Endorsed by the 33rd World Health

- Assembly. Resolution No. WHA21.41. Criteria for Medicinal Drug Promotion, World Health Organization; May 1986. Available at: <http://apps.who.int/medicinedocs/en/d/Js16520e/6.html>. Accessed on 15 August, 2023.
2. Jacob NT. Drug promotion practices: A review. *Br J Clin Pharmacol.* 2018;84(1):1659-67.
 3. Trade, foreign policy, diplomacy and health, World Health Organization. Available at: <http://www.who.int/trade/glossary>. Accessed on 15 August, 2023.
 4. Garje YA, Ghodke BV, Lalan HN, Senpaty S, Kumar R, Solunke S. Assessment of promotional drug literature using World Health Organization guidelines. *Int J Ayurveda Res.* 2014;4(2):3-5.
 5. Phoolgen S, Kumar SA, Kumar RJ. Evaluation of the rationality of psychotropic drug promotional literatures in Nepal. *J Drug Discov The.* 2012;2(6):6-8.
 6. Zaki NM. Pharmacists' and physicians' perception and exposure to drug promotion: A Saudi study. *Saudi Pharm J.* 2014;22(6):528-36.
 7. Birhanu DW, Mehari GG, Tigist AB, Gidey MT, Belay YB, Tesfaye DM et al. Influence of Medical Representatives on Prescribing Practices in Mekelle, Northern Ethiopia. *PLOS one.* 2016;11(6):e0156795.
 8. Sushil S, Neha A, Htet WM, Deepak RN, Venkat S. A study of perceptions and exposure of drug promotional literature among clinicians in a teaching hospital. *Perspectives Clin Res.* 2021;12(3).
 9. Fischer MA, Keough ME, Baril JL. Prescribers and pharmaceutical representatives: why are we still meeting? *J Gen Intern Med.* 2009;24:795-801.
 10. World Health Organization/Health Action International. Understanding and responding to pharmaceutical promotion- a practical guideline. 2010. Available at: <http://www1.paho.org/hq/dmdocuments/2011/drugpromotion-manual-CAP-3-090610.pdf>. Accessed 10 June, 2023.
 11. Lauren C, Yolanda E, Megan P, Megan AM. Social media use by physicians: a qualitative study of the new frontier of medicine. *BMC Med Informatics Decision Making.* 2016;16:91.
 12. Shahrzad S, Long CM, Tahir MK. Interaction and medical inducement between pharmaceutical representatives and physicians: a meta- synthesis. *J Pharmaceutical Policy Practice.* 2016;9:37.
 13. Wazana A. Physicians and the pharmaceutical industry: is a gift ever just a gift? *JAMA.* 2000;283(3):373-80.
 14. Roy N, Madhiwalla N, Pai SA. Drug promotional practices in Mumbai: a qualitative study. *Indian J Med Ethics.* 2007;4(2):57-61.
 15. Misra S, Ganzini L, Keepers G. Psychiatric resident and faculty views on and interactions with the pharmaceutical industry. *Acad Psychiatry.* 2010;34(2):102-8.
 16. Saito S, Mukohara K, Bito S. Japanese practicing physicians' relationships with pharmaceutical representatives: a national survey. *PLoS One.* 2010;5(8):e12193
 17. Wang Y, Adelman RA. A study of interactions between pharmaceutical representatives and ophthalmology trainees. *Am J Ophthalmol.* 2009;148(4):619-22.
 18. Lieb K, Brandtönies S. A survey of German physicians in private practice about contacts with pharmaceutical sales representatives. *Dtsch Arztebl Int.* 2010;107(22):392-8.
 19. Medical Council of India: Circular on Generic Medicine; 2017. Available at: <https://old.mciindia.org/circulars/Public-NoticeGeneric-Drugs-21.04.2017.pdf>. Accessed on 5 June, 2023.
 20. Press Trust of India. Narendra Modi hints at rules for doctors to prescribe generic drugs. *The Hindu* 2017. Available at: <https://www.thehindu.com/sci-tech/health/narendra-modihints-at-rules-for-doctors-to-prescribe-generic-drugs/article18076794.ece>. Accessed on 5 June, 2023.

Cite this article as: Jaiswal KM, Austina A, Abraham JP, Thomas AV. Knowledge attitude and practices of drug promotional literature: a clinician's perspective. *Int J Basic Clin Pharmacol* 2023;12:836-41.