

## RESEARCH ARTICLE

### A questionnaire-based survey on knowledge and attitude toward drug promotional literature among second year undergraduate students at tertiary care hospital

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#### ABSTRACT


**Background:** With the advancement of the use of technology, media, and use of internet promotion of drugs has been increased. Pharmaceutical manufacturers spend vast amount of money on promotion usually through medical representatives by providing printed advertisements. However, it has been seen that these printed advertisements are not up to the mark; usually, they either overemphasize the efficacy or hide the safety profile for the sake of company's profit. All these promotional activities influence the prescribing pattern of doctors. **Aim and Objective:** The objective of this study was to assess the knowledge and awareness about the drug promotion literature concept among the 2<sup>nd</sup> year undergraduate students at a tertiary care teaching hospital Vijayanagar Institute of Medical Sciences Ballary. **Materials and Methods:** The study was a prospective cross-sectional pre-validated questionnaire-based study conducted in the Vijayanagar Institute of Medical Sciences, Ballary. A total of 150 2<sup>nd</sup> year undergraduate students were enrolled and instructed to fill the questionnaire forms. These filled forms were collected and data were analyzed. **Results:** Among respondents, 69 (71.81%) of the respondents have chosen Indian Pharmacopoeia as a trusted source of information followed by others. The most common factor affecting the prescribing attitude was reported as updates from clinical trials 69 (70.40%) followed by the prescriber's knowledge. **Conclusion:** The most important intervention taken to stop misleading drug promotional activities has been reported as the formulation of strict regulation by the health-care authorities against any misleading promotion. Promotional activities by manufacturers influence the attitude and prescribing pattern of doctors. Hence, it is important to teach the students about their rational use and critically analyze them.

**KEY WORDS:** Drug Promotional Literature; Organization of Pharmaceutical Producers of India; Questionnaire Based; 2<sup>nd</sup> Year Undergraduates

#### INTRODUCTION

With the advancement of the use of technology, media, and use of internet promotion of drugs has been increased.

The WHO defines drug promotion literature (DPL) as "all informational and persuasive activities by manufacturers, the effect of which is to induce the prescription, supply, purchase, and/or use of medicinal drugs."<sup>[1]</sup> For every other five doctors, there is one sales representative and they are the main source of drug information in developing countries.<sup>[2]</sup> To report any information about new drug doctors themselves use promotion as a source.<sup>[1]</sup> Doctors who had graduated long ago and commonly in private practice use promotion as the main source of information and doctors attitudes toward promotion may vary and their opinions also will vary according to the sales representatives.<sup>[1]</sup>

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Heavy promotion of latest drugs results in widespread prescribing and use before the safety profile of those products is fully understood. Without any evidence on therapeutic outcomes, the older ones would be replaced by more costly and new medicines.<sup>[3]</sup> Neither any regulations nor guidelines of different countries would meet standards of DPL (printed advertisements) nor any review journal editors have control over drug advertising.<sup>[1]</sup>

It has been noticed that these DPL has interfered in the prescribing behavior and has affected the attitude of trainee doctors. Because of this pitfall, we must educate them properly regarding critical appraisal of promotions and change their attitude for improving their prescribing skills. Keeping all this in mind, this study was undertaken on 2<sup>nd</sup>-year MBBS students to evaluate knowledge and attitude toward DPL and to critically appraise any given DPL.

**MATERIALS AND METHODS**

After approval from the Institutional Ethics Committee of Vijayanagar Institute of Medical Sciences, Bellary, the study was carried out for a period of 1 months, i.e., January 2020.

This is a prospective cross-sectional pre-validated questionnaire-based study conducted at Vijayanagar Institute of Medical Sciences, Bellary, for a period 1 month (January 2020). A questionnaire was developed focussing on DPL concept, their knowledge, awareness toward it, this questionnaire was further refined based on the pilot survey conducted in a small group of students and the final questionnaire was formed, this questionnaire consists of nine items these questions have response mechanism as true or false type. There is no scoring system and the individual item response was tabulated and analyzed accordingly. The questionnaire was distributed to students at the beginning of a mandatory introductory lecture; they were provided with a pamphlet containing basic information about DPL the responses collected after 1 h. One hundred and fifty undergraduate students were included in the study, of which 138 student’s responded study and those who were not willing to participate were excluded from the study.

**RESULTS**

Textbooks – 22.99%, journals – 12.92%, DPL – 18.67%, drug reference guide – 45.97%, Indian Pharmacopoeia – 71.81%, conference proceedings – 5.63%, internet – 12.92%.

Knowledge of prescriber – 60.35%, drug promotion – 20.10%, colleagues/seniors – 4.22%, updates from clinical trials – 70.40%.

Provide useful and correct information – 45.97%, hide the complete safety profile – 33.09%, overemphasize medicine

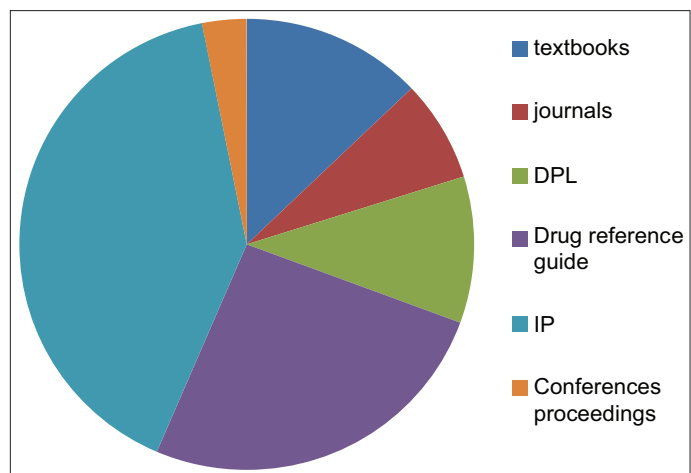
effectiveness – 21.55%, information is biased and too commercial – 59.29%.

Promoting the use of generic drugs – 45.97%, teaching the concept of drug promotion at UG level – 24.43%, continuous research on drug promotion – 17.23%, creating policies and guidelines for drug promotion – 66.09%.

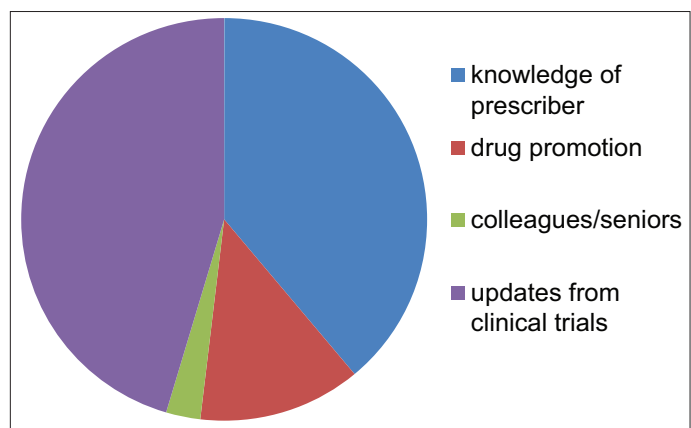
Out of 150 students, 138 students responded and their age ranged between 19 and 25 years. 69 (71.81%) of the respondents have chosen Indian Pharmacopoeia as a trusted source of information followed by drug reference guides, textbooks, and journals, as depicted in Figure 1.

The most common factor which was affecting the prescribing attitude was selected as updates from clinical trials 69 (70.40%) followed by prescriber’s knowledge and others, as shown in Figure 2.

The most essential/important factor a prescriber should consider while prescribing was safety/efficacy according to most 119 (86.23%) of the respondents, followed by cost 57 (41.30%) and local availability of the drug 52 (37.68%).



**Figure 1:** Source of information for prescribing the drugs

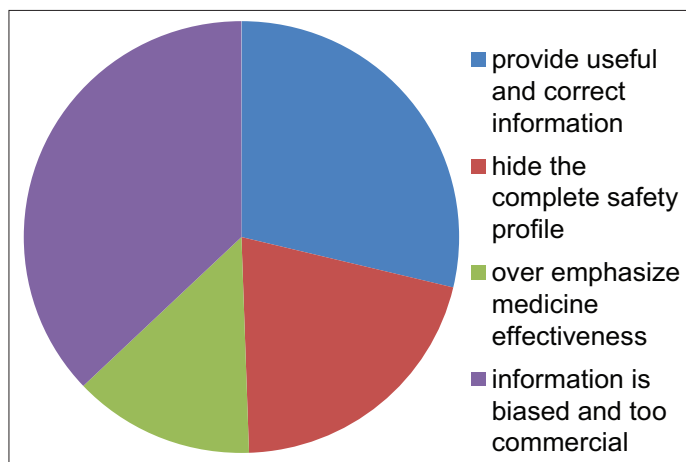


**Figure 2:** Factors affecting prescribing

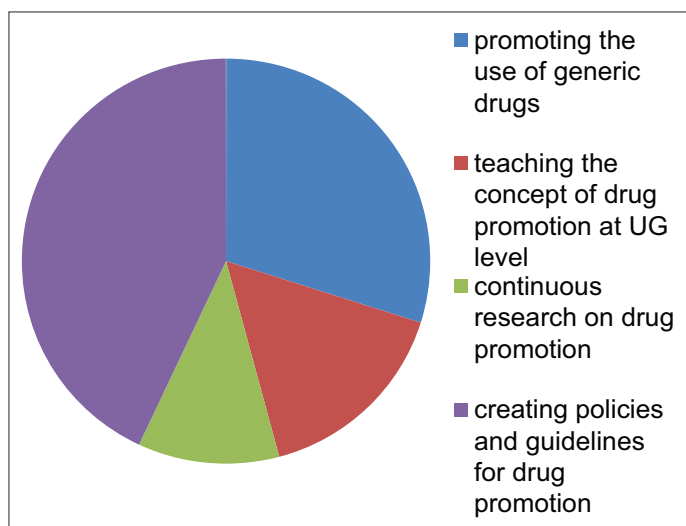
Most of the respondents 94 (68.11%) believed that promotion of drug using internet or other media leads to self-medication and patient does not go to health-care professional for his illness, while 66 (47.82%) respondents believed that it provides information about various drugs which increase the patient compliance and remaining 60 (43.47%) stated that patient draws inappropriate conclusion about the drugs.

Most of the respondent’s opinion regarding the quality of the information provided by medical representatives and advertisements was that drug information is biased and too commercial, as presented in Figure 3.

To stop any misleading of drug promotional activities most of the students responded an important intervention as formulation of strict regulation by the health-care authorities against any misleading promotion 113 (81.88%), followed by educating the prescribers about drug promotional activities 83 (60.14%) and involvement of media against unethical drug promotion 6 (6.12%). The most common measures



**Figure 3:** Opinion regarding the quality of the information provided by medical representatives



**Figure 4:** Measures to be taken to reduce the influence of drug promotion on prescribing

to be taken to reduce the influence of drug promotion on prescribing practices chosen by respondents were creating policies and guidelines for drug promotion, as presented in Figure 4.

**DISCUSSION**

The study has been conducted on 2<sup>nd</sup>-year undergraduate students to assess their knowledge regarding drug promotional literature. Most of the respondents in this study opined Indian Pharmacopoeia and drug reference guides followed by textbooks are the most trusted source for getting knowledge about drugs for prescribing purposes, although about 18.67% of students also referred promotional literature as a trusted source. The results of this study are in contrast to study conducted by Dixit *et al.*, in which according to respondents most trusted source was chosen as textbooks and drug reference guides, but opinion regarding drug promotional literature is similar.<sup>[4]</sup> As some of the students opined DPL as trusted source, they should be taught about the critical appraisal of these DPL, the mandatory information which should be included according to the WHO criteria as many of them does not include complete safety profile and provide exaggerated information of efficacy and provide false claims.

Prescribing pattern is influenced by many factors such as knowledge of the prescriber, seniors/colleagues prescribing behavior, various updates from journals, clinical trials, continuing medical educations (CMEs), and conferences and even DPL influence prescribing pattern. Most of the respondents in this study have opined that updates from clinical trials are most important followed by knowledge of prescriber although 18.67% of students told that it is DPL which affects the prescribing most. A study conducted by Dixit *et al.* showed that the most important factor influencing the prescribing is knowledge of the prescriber followed by drug promotion.<sup>[4]</sup> It is of utmost important to train the students regarding the correct use of DPL as research clearly shows that doctors who report relying more on promotion as a source of information tend to prescribe less appropriately, prescribe more often and adopt new drugs more quickly.<sup>[1]</sup>

At present advertisement, media, and internet became the most powerful source for getting any information and are also available easily. The internet also creates a new marketplace for illegal activities such as the sale of unapproved new drugs or products marketed with fraudulent health claims.<sup>[5]</sup> Pharmaceutical manufacturers also spend vast sums of money on promotion, including sales representatives, samples, advertisements in broadcast and print media and sponsorship of educational events and conferences.<sup>[1]</sup> Hence, appropriate measures or some guidelines should be made by regulatory authorities to check the availability of such kinds of DPL

**Table 1: Opinion regarding drug promotion using medical representatives**

Responses	Yes-n (%)	No-n (%)
It updates prescriber’s knowledge about drugs	125 (90.57)	13 (9.42)
It helps in rational prescribing	101 (73.18)	29 (21.01)
Prescriber becomes obliged after receiving the benefits from the manufacturers	93 (67.39)	42 (30.43)
Manufacturer’s promote off label use of some medicines to make profit	120 (86.9)	18 (13.04)

**Table 2: Opinion regarding ethical aspects of drug promotion by manufacturers**

Response	Yes-n (%)	No- n (%)
Conducting conferences/continuing medical educations for promoting their products	110 (79.71)	28 (20.28)
Distributing free medicine during every visit by MR or during a medical camp	100 (72.46)	38 (27.53)
Giving margin/percentage of their profit to prescriber/pharmacist	66 (47.82)	72 (52.17)
Arranging tours/trips for prescribers/pharmacists	63 (45.65)	75 (54.34)
Arranging private dinner parties	50 (36.23)	88 (63.76)
Gifts	60 (43.47)	78 (56.52)

among public domain, because referring them public may draw an inappropriate conclusion about the drug leading to various health problems like the development of resistance by antibiotics.

Regarding the quality of the information provided by medical representatives and advertisements about the drug, most of the respondents opined that the information they provide is biased and too commercial while 45.97% of respondents think that the information they provide is useful and accurate. However, the students are needed to teach to differentiate between true information and fake information by giving them appropriate training about retrieving the correct information using various trusted sources available.

For stopping the misleading drug promotion activities, most of the respondents’ opinion was that the health-care authorities should make strict regulations against this. For the same, the Organization of Pharmaceutical Producers of India (OPPI) was established in 1965, a premier association of research and innovation-driven pharmaceutical companies in India and is also a scientific and professional body.<sup>[6]</sup> From January 1, 2019, the “OPPI Code of Pharmaceutical Practices 2019” replaces the “OPPI Code of Pharmaceutical Marketing Practices 2012”.<sup>[6]</sup> OPPI Member Companies are committed to the ethical standards set out in this OPPI code, but the final responsibility of implementation of the OPPI code is a matter of self-regulation and self-discipline.<sup>[5]</sup>

Regarding drug promotion done by medical representatives, most of the respondents opined that it updates the prescriber’s knowledge, helps in rational prescribing [Table 1], but manufacturers promote off label use of some drugs to make a profit [Table 2]. Hence, the medical representatives should be trained properly, and manufacturers should comply with guidelines formed by OPPI. If promotion leads to better

prescribing, more rational use of medications or improved cost effectiveness then there would be no concern, but heavy promotion of new drugs leads to widespread prescribing and use before the safety profile of these products is fully understood. Newer, more expensive medicines displace older, less costly ones without any evidence of an improvement in therapeutic outcomes.<sup>[6]</sup>

Regarding the ethical aspects of distributing free samples of the drug and conducting CMEs for the promotion of their products, most respondents think it ethical. The opinion of respondents about the same corroborates with the study conducted by Dixit *et al.*<sup>[4]</sup> However, according to OPPI’s guidelines, “free samples of a pharmaceutical product may be supplied to health-care professionals directly or to persons duly authorized by them to or to receive such samples on their behalf to enhance patient care. Samples should not be resold or otherwise misused.”<sup>[5]</sup> and regarding conducting CMEs “When companies provide content to CME activities and programs, such material must be fair, balanced and objective, and designed to allow the expression of diverse theories and recognized opinions. Content must consist of medical, scientific or other information that can contribute to enhancing patient care.”<sup>[5]</sup>

**CONCLUSION**

There are both pros and cons of promoting the drug. If promoted rationally and critically analyzed by health-care professionals using authentic sources of information, the same may lead to the better prescribing, more rational use of drugs and improved cost effectiveness. But, if promoted irrationally or unethically will ultimately lead to poor health-care delivery and more economical burden on society. Hence, it is of utmost important to appropriately train the future medical graduates about the use of drug promotional literature by changing their attitude toward it.

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