



Short Report:

Teaching of Critical Analysis of Drug Advertisements to Medical Students

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Abstract:

Background: Medical practitioners utilize drug promotional materials from pharmaceutical companies as a major source of information especially in developing countries. These promotional materials can be highly informative as long as they are critically appraised but when they are accepted without question, they lead to irrational prescribing. **Aim:** To sensitize the students regarding WHO criteria for medicinal drug promotion and to determine the impact of teaching critical appraisal of medicinal drug promotion to medical students. **Design:** The medical students of second year were given a pre test questionnaire to identify the violations in generic labeling, pharmacological information, claims, relevance and references cited in the drug advertisements. Later they were sensitized about the WHO criteria for medicinal drug promotion and how to critically appraise a drug advertisement. This was followed by a post test questionnaire with the same drug advertisement. **Result:** The number of students answering the post test correctly was significantly ($p < 0.05$) more than that of pre test. **Conclusion:** Education of medical students regarding critical analysis of drug advertisements should be a part of the medical curriculum.

Key Words: Critical appraisal; Drug advertisements; WHO criteria

Introduction:

Medical practitioners utilize drug promotional materials from pharmaceutical companies as a major source of information especially in developing countries.¹ It has been documented that the promotional activities of pharmaceutical industry has an influence on the prescribing behavior of health care providers¹⁻³ although prescribers deny this.^{4,5} It has been found that advertising influences doctors behavior more than what they think,^{6,7} and the problem lies in that most of the drug advertisements contain misleading information.⁸ These promotional materials can be highly informative as long as they are critically appraised but when they are accepted without question, they lead to irrational prescribing. Medical practitioners, however, have no training on the proper way to utilize these promotional materials. Even in the presence of several guidelines to evaluate the quality of promotional materials the practice of irrational prescribing is still rampant. Like doctors, medical students are also exposed either during their medical course or during in-

ternship to drug promotion. Hence if prescribers rely on the information from drug advertisements it can result in irrational prescribing. A previous study reported that physicians failed to recognize inaccurate statements in drug advertisements.⁹ This could be due to the fact that they have not been sensitized to evaluate promotional materials. So, to prevent irrational prescribing there is a need to educate practitioners regarding critical analysis of drug advertisements. This can be achieved by imparting knowledge regarding drug advertisements during the MBBS course and more so during second year when they are taught pharmacology. Hence the aim of our study was to sensitize the students regarding WHO criteria for medicinal drug promotion¹⁰ and to determine the impact of teaching critical appraisal of medicinal drug promotion to medical students.

Methodology:

The study population included 172 second year (5th semester) medical students of Kasturba Medical College, Manipal in two sessions of 86 students each. They were given a pre test questionnaire to identify the violations in generic labeling, pharmacological information, claims, relevance and references cited in the drug advertisements. Later a one hour lecture about WHO criteria for medicinal drug promotion and critical appraisal of drug advertisements was given to the students. This was followed by an interactive session where around 5 drug advertisements were projected one by one and the students had to identify if any violations were present. This was followed by a post test questionnaire with the same drug advertisement. The pre and post test questionnaire was obtained from a previous study.¹¹ There was no compulsion for students to take part in the study. Students consent was taken before their participation in the study. Ethical clearance was obtained from the institutional ethics committee.

Statistics: The results were analyzed using Mc Nemar test to compare categorical variables using SPSS 11.5 version software. The answers were evaluated using the checklist of WHO ethical criteria for medicinal drug promotion.

Results:

A total of 172 students participated in the present study. In the pretest, 45.9% students correctly answered about generic labeling whereas 88.4% students answered correctly in the post test; the difference being significant ($p < 0.001$). Regarding pharmaceutical and clinical information the right answers in pre test

were given by 70.3% and 78% students whereas 68.6% and 84.3% students answered right in the post test. 29.7% students were able to identify the correctness of claims in pretest whereas 52.9% students answered correctly in post test with a significant difference compared to the pretest ($p < 0.001$). The relevance of drug advertisement was correctly identified by 79.1% students in pretest and 83% students in post test ($p < 0.05$). 65.1% students correctly commented about references in pretest and after post test 80.2% students were able to comment correctly ($p < 0.01$). The percentage of students answering correctly in the pre and post test has been shown in Fig 1.

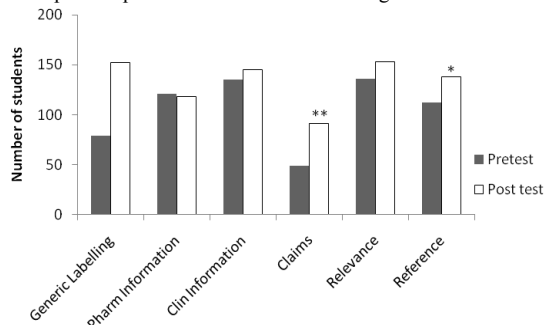


Fig 1: Number of students answering correctly in the pre and post test
* $p < 0.05$, ** $p < 0.01$

Discussion:

WHO's ethical criteria for medicinal drug promotion includes the various details that a drug advertisement should contain. Accordingly a drug advertisement should contain the name of the active ingredient(s) using either international non proprietary name (INN) or the approved generic name of the drug. The generic name should be legible and should not be too small in comparison to the brand name. In the present study there was significant increase in the number of students who were able to identify the generic labeling correctly after the post test. The pharmacological information includes pharmaceutical and clinical information. The indications, dosage regimens, contraindications, adverse effects and precautions should be included in the drug advertisement. There is a tendency for drug companies not to highlight or lay emphasis on contraindications and adverse effects.¹² Such parameters need critical analysis. Pharmaceutical information like presence of excipients, shelf life, legal category is sometimes missed out in drug advertisements¹² and keeps the doctors unaware of such important information. In our study, there was no significant change in pre and post test results regarding pharmacological information. It suggests that there was not much change in their perspective towards pharmacological information after a single intervention. Probably they require more effective exposure to this concept to change their perception.

Most of the drug advertisements highlight efficacy claims without stressing on safety claims.¹² The efficacy claims are exaggerated and the safety ones are underplayed. So a medical practitioner should be cautious in judging the claims made by the company. In our study there was a significant increase in the number of students who were able to judge the safety and efficacy claims correctly.

Most of the drug companies try to make drug advertisements which contain colorful and attractive pictures without taking into consideration the relevance regarding the product. They sometimes misguide the busy practitioners who just glance the drug advertisements. In our study after a single intervention, a

significant number of students were able to judge the relevance of the pictures in the drug advertisements.

References are an integral part of drug advertisements because most of the claims should be substantiated by the references. Most of the advertisements do not contain references for the claims made.¹² In our study the students were able to identify the importance of references significantly. Our single intervention was effective in teaching medical students critical analysis of drug advertisements. If such interventions are made regularly, students will have a sound knowledge of critiquing a drug advertisement and this will lay the foundation for rationale prescribing.

A survey done about educational initiatives taken to teaching drug promotion to medical students showed that most of the medical schools allotted very little or no time to teaching drug promotion.¹³ Pharmacology is a study which involves the interaction between doctors with the industry that manufactures and promotes drugs.¹⁴ Incorporation of this branch into the medical curriculum will enable the doctors in rational prescribing.

Conclusion:

Education of medical students regarding critical analysis of drug advertisements has a crucial role to play in preparing future practitioners to respond to drug promotional activities ethically.

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