

Review Article**Effect of Promotional literature on the prescribing habits of practitioners**Farooq M¹, Goel R², Goyal M³

¹Dr Majid Farooq
Post-graduate, Resident
drmajidfarooqbhat@gmail.com

²Ridhima Goel
Final year MBBS

³Manoj Goyal
Professor

^{1,3}Department of Pharmacology
^{1,2,3}Maharishi Markandeshwar
Institute of Medical Sciences and
Research
Mullana, Ambala-133207, India

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Correspondence to:

Dr Majid Farooq
+91-8221943788.
drmajidfarooqbhat@gmail.com

ABSTRACT

Pharmaceutical companies are the manufacturing units of drugs, with established conformity for dispersal into the public. To increase their sales and hence, their shareholder value, these corporations need to make their product have earmarks of a better formulation than those already available and stand out from their adversaries. This is achieved with the help of rigorous promotion of the drug to the prescribers. Medical Representatives (MRs) or Pharmaceutical Sales Representatives (PSRs) advertise to the doctors with the help of eye catching visual presentation, citing various benefits and advantages. These presentations are accompanied by leave-behind brochures, pamphlets, drug guides, drug samples etc. for the doctor to read, and are consistently full of points featuring the promoted drug as an advancement with better effectiveness, supported with various research works, colorful pictures, graphs and diagrams that make a physician take notice of the advertised drug. This raises the question of the ability of a GP to critically appraise the information presented to him/her and segregate the fact from fraud. Too often aid is tied to the trade, and any practicing physician should be aware of the tricks being played on him/her and be able to wring the quality of the information presented from the vast quantity of information and assess it for its accuracy.

Keywords: Pharmaceutical Promotional literature, source of information, tricks and tactics

Introduction

Medicine is one of the most rapidly advancing branches of science, with the constant need to reinvent itself to suit the dynamic nature of the pathological agents, and grapple with the perpetual emergence of newer diseases. The United States Food and Drug Agency approved 17 new drugs in January 2015, ^[1] while The Ministry of Health, Government of India lists 44 new drugs approved in the year 2014. ^[2]

Perseverance of the knowledge of breakthroughs made in the science of medicine is mandatory for any practitioner, to better justify his role as a healer and

minister the best medical care that he is capable of, which nevertheless is a challenging task because of multiple reasons. Pharmaceutical companies being aware of it, try to target the physicians for promotion activities in the garb of providing the updated information. For this reason, a physician becomes a crucial target of the promotional activities of major pharmaceutical corporations, and in areas of scarcity of availability of sources of information, the Medical Representatives (MRs) or Pharmaceutical Sales Representatives (PSRs) becomes a major source of information for the doctors. In

developing countries where the influence of drug companies is high and there is lack of any post graduate dispersal of education from the public sector, promotional literature doled out by the drug companies forms a very important source of information dispersal.^[3,4]

Classification of scientific literature based on origin of the data:^[5,6]

- **Primary sources** of information refer to the publications by a professional of the work Carried out by him, which include journal articles, theses, reports, patents, etc.
- **Secondary sources** of data consist of any information that relies on the primary sources, for example, review papers, articles, textbooks, etc.
- **Tertiary sources** of information are any published work that aim at a population of diversified origin and consist of a synopsis of information on any topic. These can include encyclopedias, science magazines, newsletters, almanacs, etc.
- **Grey literature** is any literature that is not widely published and hence, is not easily available. This can include some types of government documents, statements of environment impact, etc.
- Now-a-days, another source of information widely used is the **World Wide Web**. Information available on this can range from high quality research to completely false and inaccurate reporting.

Promotion of products by pharmaceutical companies:

Pharmaceutical companies are the manufacturing units of drugs, with established conformity for dispersal into the public. According to an article published in the Forbes Magazine in 2013, the cost of

introducing a new drug in the market is \$350 million, even before the drug is available for sale.^[7] To increase their sales and hence, their shareholder value, these corporations need to make their product have earmarks of a better formulation than those already available and stand out from their adversaries. This is achieved with the help of rigorous promotion of the drug to the prescribers. A study done in Boston University in 2001 saw that advertisement department of pharmaceutical companies had 81% more employees than their research and development department.^[8] According to the International Marketing Systems (IMS), US, in the year 2011, the total promotional spend was \$10.7 billion, out of which, \$6.8 billion were directed towards professionals.^[9]

Promotional literature by pharmaceutical companies as a source of information:

Studies analyzing the source of information for physicians in various setups have the commonalities in their findings. McGettigan et al^[10] found in their study that 42% of General Practitioners (GPs) got information about the latest drugs from MRs, as opposed to 22% use of commercial information by the hospital doctors, furthermore study by Kazeem et al^[11] in Nigeria cites that the main sources of information for 92.6% doctors were the PSRs and for 88.3 %, the drug promotion forum/product launches. Similarly, study conducted Vancelik et al^[12] in East Turkey also found the source of information for GPs were the drug guides of pharmaceutical companies in 73.7% cases, while Abdelaziz et al^[13] found that 86% of GPs in Tunisia rely on pharmaceutical dictionaries for

information, also seen by Figueras A et al in their study in Spain.^[4]

PSRs advertise to the doctors with the help of eye catching visual presentation, citing various benefits and advantages and recounting various researches done, successes achieved with the drug and the use of the drug by multitude of preeminent dignitaries. These presentations are accompanied by leave-behind brochures, pamphlets, drug guides, drug samples etc. for the doctor to read, and are consistently full of points featuring the promoted drug as an advancement with better effectiveness, supported with various research works, accompanied by colorful pictures, graphs and diagrams that make a physician take notice of the advertised drug. Too often aid is tied to the trade, and any practicing physician should be aware of the tricks being played on him/her and be able to wring the quality of the information presented from the vast quantity of information and assess it for its accuracy.

Tricks and tactics used for promotion of products by PSRs:

Shaughnessy et al^[14] discuss in their paper the various mind games & techniques used by the PSRs & MRs on the prescriber so as to make their product come across as a better choice, some of these techniques are; Argumentum ad populum (Appeal to popularity), Argumentum ad verecundiam (Appeal to authority), Argumentum Ad Misericordiam (Appeal to Pity), Post prandium ergo propter prandium (Appeal after meals), and many more.

Ziegler et al^[15] evaluated the accuracy of pharmaceutical representatives' drug information and found that 11% of verbal statements made by them are

inaccurate but in favor of the promoted drug, and physicians in general failed to recognize this deception. WHO Essential Drug Monitor mentions the enticing ramifications of incorrect information given by the PSRs to the physicians in France, analyzed over 10 years.^[16]

Various reports archive unseemly effect of blatant promotion on the prescribing habits of the physicians, some of which can lower the quality of prescription or increase the prescription costs.^[17-25] Physicians themselves universally agree on the fact that their prescribing habits are influenced by the data provided by the PSRs. In the study by Ziegler et al,^[15] 37% physicians, >50% physicians in the study by Kazeem et al,^[11] 61.2% in the study by Vencelik et al,^[12] and 90% of the GPs in the study by Rohra et al^[26] said their decisions were influenced by the pharmaceutical drug information, while Prosser et al^[27] lists PSRs as the most influential agents effecting GPs decisions to prescribe newer drugs. Caudill et al^[28] detected that doctors who use drug information provided by PSRs have a higher prescription cost. Ahmad and Bhutta^[29] note in their research how 55% of physicians continued to prescribe drugs to children with known adverse consequences and 95% of these physicians specify that their source of information was the promotional literature. Payer^[18] highlights an important consequence of the drug promotion, describing the inclination of the doctors to prescribe drugs for normal life processes, while in a similar account by Boltri et al,^[30] it was seen that robust advocacy by the PSRs led to prescription of second-line antihypertensive drugs over the first-line drug choices, a convention that

regressed when the prohibition was put on the promotional activities.

Blumenthal^[31] analyzed that 61% physicians believed that they were not influenced by the endeavors of the PSRs, though at the same time only 16% of them believed this to be true about their colleagues.

Bias, inaccuracies and discrepancies found in the pharmaceutical promotional literature:

Analysis of the promotional literature given to the physicians by the PSRs has given very unsatisfactory results. WHO Essential Drug Monitor acknowledges the deceitful effect of drug promotion to the physicians in France, noting how risks warning were covered by only 10%, drug interactions in 8%, and adverse effects in 10% of visits of the PSRs while promoting their drug.^[16] In an evaluation of the promotional literature by the Jaykaran et al,^[32] it was seen that the status of coverage of the quantitative research was very ungenerous, with only 8.9% of the material making a notice of the research findings to support their claims and likewise, Murthy et al^[33] criticized the legitimacy of the claims made in the drug promotional literature and found that 20% of the claims were exaggerated, whereas 32% and 17% were inconclusive and false respectively. Comparable findings were also seen in the appraisal of the promotional data by Mali et al,^[34] according to which none of the brochures fulfilled all the WHO Ethical Criteria for Medicinal Drug Promotion,^[35] 90.2% of them consisted of irrelevant pictures, 38.4% brochures did not make any research references to their claims, and 21.9% of the references cited were irretrievable,^[34] and in the evaluation of the accuracy of pharmaceutical

advertisements by Wilkes et al,^[36] the reviewers disagreed in 30% of instances with the drug of choice, in 32% with the headline claims while they did not advocate the publication of 28% of advertisements. Cooper et al^[37] analyzed the graphical information in the pharmaceutical advertisements and found that 66% of them contained 'chart junk', while 36% had numerical distortion. Consonance of these findings are also seen across the studies by many authors.^[26, 38- 44]

Another issue of rising concern is the authenticity of the research work, with the increasing involvement of the pharmaceutical companies in the funding, evaluation and other facets of the work, and the consequent probability of these studies to give positive outcomes, to selectively report only the favorable findings or to implement post hoc data dredging. Cardarelli et al^[43] report in their study that 80% of the evaluated studies were funded by pharmaceutical companies and these studies were more likely to give positive results, a claim also noted in the studies by Lexchin et al,^[45] Djulbegovic et al,^[46] and a conspicuous remark of this was made in the WHO Essential Drug Monitor.^[16] Cooper et al^[41] found 58% of the evaluated research works cited in the promotion literature to be sponsored by pharmaceutical companies, and Rochon et al^[47] found 85% of the publications to be affiliated with pharmaceutical companies, and these research works almost always give favorable results.

Bobbio et al^[48] found that the style and completeness of reporting of research studies have impact on the prescribing practices of most physicians. The presentation of the data in the

advertisements may be distorted in such a way that the effect of the drug may appear to be much larger than the actual effect, which is brought about by distorting the y-axis, by not starting it at zero, compressed x-axis, inconsistent time interval on z-axis, disparity between the size of effect in the graph and in the data, length of the survival curve which maybe longer or shorter than the compared group, presentation of the data by using pyramids and cones rather than bars.

An example from the recent history about the unbridled promotional ventures of the pharmaceutical companies in the promotion of a drug is the VIOXX scandal, wherein the limelight was solely focused on the lesser gastrointestinal effects of the drug, while totally disregarding the grievous cardiac manifestations, which eventually led to wide spread morbidity and mortality, inciting professionals to refer to this incident as the worst drug disaster in history.^[49, 50]

Conclusion

Literature by pharmaceutical companies forms a very important source of information to the practicing physician, who many-a-times are not able to access other more reliable sources of information due to their busy schedule, and other reasons. However, it has been found that the facts and figures in these literatures are often distorted and biased so as to highlight only the beneficial effect of the products and undermine the harmful effects, leading the physician to prescribe the products which can be detrimental to the patient and his community. Practicing physicians need to be able to judge the accuracy of the data presented to them, for which they exploit

more than one source of information, preferably of unbiased authority. Pharmaceutical companies should provide undeterred access to their data, without manipulation and should present the data to the physicians in its entirety. At national levels, ethical committees and drug regulatory authorities need to maintain stringent control on the promotional activities of the pharmaceutical companies. In order to develop more rational professionals, there is need for training of the medical students in the rational drug use and the ability to appraise the drug information presented to them, along with dispersal of information to post-graduates from the public sector.

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