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Original Article

A Critical Assessment of Rationality in Drug promotion literature using WHO Guidelines

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ABSTRACT

Background Aim: *To evaluate the scientific and ethical status of the drug promotional literature available in the Indian market for accuracy, consistency, and validity of information present in it using WHO criteria.*
Methods: *A cross-sectional, observational study was carried out in the department of pharmacology for evaluation of 180 drug promotional literature by WHO-criteria, collected randomly from outpatient departments of JN. Medical College and Hospital, Aligarh, a tertiary care hospital in Northern India. They were also analyzed for different claims, catchy terms, quality of paper and print, and representation of data with statistics/diagram/table and references cited in support of their claims for their source, year of publication, authenticity, and retrievability.*
Results: *45% of literature were designed for promotion of fixed dose-drug combinations (FDCs), and 55% were single-dose formulations. Most of the drug promotional literature collected were from CVS, Endocrinology, GIT & Chemotherapy. Most of them mentioned indication, dosage form, and its strength and description of the product and package. Description of pharmacological effects and mechanism of action was present only in 31% of literature. More than (90%) were lacking information related to indications, correct dosage regimen, and dose adjustments in special situations, as well as the dosage in Paediatrics and elderly. False/tall claims, catchy/broken statements were given in 81% and 58% of literature, respectively. Irrelevant diagrams were depicted in 69%. References were cited in 69% of literature, of which 92% were from indexed-journals and were retrievable.*
Conclusion: *Critical assessment of drug promotional literature can make drug prescribing more effective. In our study, the majority of DPLs satisfied only half of the WHO criteria, and none of them fulfilled all the specified DPL criteria. Incomplete or embellished information in DPLs may mislead physicians and might lead to an irrational prescribing. Therefore, physicians must critically evaluate DPLs regarding updated scientific evidence required for quality patient care.*

Keywords: *Ethical drug promotion, promotional literature, WHO criteria for evaluation of drug promotion, drug marketing, medicine promotion.*

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INTRODUCTION

Pharmaceutical companies are in the business of developing and selling new drugs. Everyday a large number of new drugs are being introduced in the market.[1] Pharmaceutical promotion is a marketing strategy where persuasive communication is an important tool which targets especially doctors, it's called "direct

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to physician marketing (DTP)". Pharmaceutical companies use drug promotional literature (DPLs) as a marketing tool to promote their new drugs. Physicians are contacted by medical representatives and are lured in form of sample drugs, token gifts, reminder articles, and are also targeted through sponsored continued medical education, advertisements in medical journals, and sponsored conferences trips and stays.[2] DPLs are claimed to provide vital drug information and are being utilized to convince health professionals to prescribe the new drug, but the bitter fact is that these DPLs mostly are inaccurate and often of poor educational value.[3-5] These irrational and unethical promotional activities lead to inappropriate prescribing practices without necessarily benefiting the general patients[6-8] but contributes to increased health care costs.[9]

According to World Health Organization's (WHO), drug promotion refers to "all informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, purchase, supply, and/or use of medicinal drugs.[10] There are universally applicable baseline standards set by the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) for marketing practice, and these standards mainly apply to all promotional activities by pharmaceutical companies concerning medical professionals. In India these promotional activities by pharmaceutical companies are governed by Organization of Pharmaceutical Producers of India (OPPI) which developed code of Pharmaceutical Practices in 2012 based on guidelines set by International Federation of Pharmaceutical Manufacturers and Associations (IFPMA), Uniform Code of Pharmaceutical Marketing Practices (UCPMP) by Department of Pharmaceuticals adopted in January 2015. However, many studies have reported that information dispersed through DPLs are often inaccurate and not up to the ethical standards set by the regulatory agencies.[15]

The influence of DTP marketing on physicians concerning prescribing practices has been a matter of great concern, since its based on ethical obligations to the patients and health care costs. It's a well-documented fact that these pharmaceutical promotions influence physicians prescribing pattern.[9] Scientific data in the reference literatures should be readily available to the prescriber. Luring in the form of financial or material benefits should not be offered to, or sought by health care professionals in return of prescribing drugs.[10]

The ground reality is that most health professionals get their information from commercial sources which mainly consist of DPLs through an extensive network of Medical representatives.[13] They target the physicians through weekly or monthly visits, distributing samples and eye-catching brochures. These materials are often misleading, and confusing. The aggressive marketing compels the prescribers to write new products, often without verifying whether the claims made are justified,[4,13] this leads to irrational prescribing. In an attempt to support the rational prescribing WHO has drafted and published ethical criteria for medicinal drug promotion and has recommended its implementation all over the world. Since promotional activities affect the prescribing behavior, its of utmost importance to critically analyze the promotional material in the light of WHO guidelines and evidence-based medicine.[5] Therefore, this study has been taken up with the aim of evaluating the DPLs in the light of WHO guidelines.

METHODS

A cross-sectional observational study was conducted by the Department of Pharmacology at JN Medical College and Hospital, Aligarh Muslim University, India, a tertiary care hospital for a period of 6 months from Jan 2019 to 1st Week of July 2019. The study was conducted to find out the rationality, scientific and ethical status of drug promotional literatures presented to prescribers and its concurrence to 'WHO criteria for ethical medicinal drug promotion, 1988" A total of 180 drug promotional literature (DPLs) in the form of flyers, leaflets, and brochures procured from various outpatient departments (OPD) in the hospital through medical representatives. Collected DPLs were analyzed as per the WHO guidelines.

Literature promoting ayurvedic medications, medicinal devices and equipment (blood glucometer, insulin pump etc.) orthopedic prosthesis, drug monographs, reminder advertisements, drugs list were excluded. and literature promoting more than two brands were excluded from list.

All the literature were accessed by WHO criteria for fulfilment of each of the following parameters:[1]

- The name(s) of the active ingredient(s) using either international non-proprietary names (INN) or the approved generic name of the drug
- The brand names
- Content of active ingredient(s) per dosage form or regimen
- Name of other ingredients known to cause problems
- Approved therapeutic uses
- Dosage form or regimen
- Side-effects and major adverse drug reactions
- Precautions, contra-indications, and warnings
- Major interactions
- Name and address of manufacturer or distributor
- Reference to scientific literature as appropriate

All the literatures were further evaluated for accuracy and completeness of the information for each parameter mentioned above. In addition to this information, they were also scrutinized for different claims made, catchy terms used, quality of paper and print, different diagrams given, and statistical analysis and tables given for the promotional product. The references mentioned in the literatures were evaluated for year of publication, authenticity, and retrievability.

RESULTS

Out of total 180 drugs promotional literatures screened, 50 were excluded as per exclusion criteria and rest 130 were evaluated for its concurrence with WHO criteria. These literatures were collected randomly from different OPDS of JN Medical College & Hospital. Out of total 130 literatures, that were collected and analyzed, which revealed 72 (55%) were single drug formulation and 58 (45%) were fixed-dose combination.

Table: 1 Organoleptic evaluation of powdered drug

Antimicrobial agents	29	22.3
Cardiovascular agents	22	17
Agents affecting endocrine system	25	19.2
Agents affecting respiratory system	10	7.7
Analgesic agents	12	9.2
Agents affecting blood	5	3.8
Agents acting on central nervous system	8	6.3
Agents acting on gastrointestinal tract	12	9.2
Miscellaneous agents	7	5.3
Total	130	100

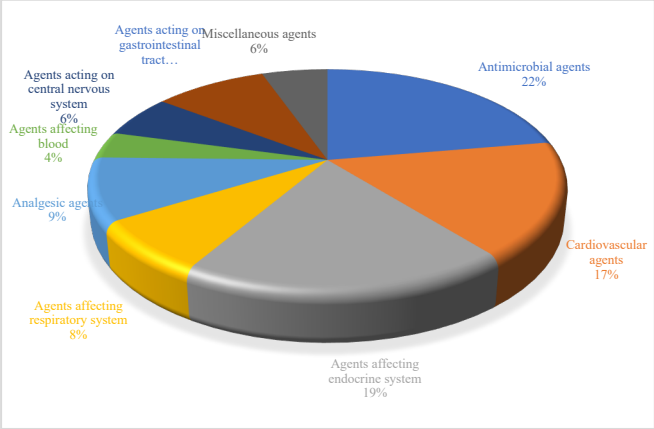

Figure 1: DPLs % in Pie Form

Table 2a: Analysis of literatures according to WHO criteria.

Pharmacological Information	Completely Mentioned	Incompletely Mentioned	Not Mentioned	Total
INN of each active ingredient	122	04	04	130
Recommended dosage form	110	-	20	130
Pharmacological effects	40	20	70	130
Mechanism of action	40	-	90	130
Doses for adults and children	32	20	78	130
Dosing interval	40	20	70	130
Duration of therapy	30	-	100	130
Dose adjustment in special situations	15	-	115	130
Contraindications	30	-	100	130
Adverse effects	40	30	60	130
Precautions	10	-	120	130
Drug interactions	08	-	122	130
Over dosage	10	-	120	130

WHO: World Health Organization

Table 2b: Analysis of literatures for other variables according to WHO criteria

Information	Mentioned	Not Mentioned
Name	130	--
Address	72	48
Cost	25	105
False/tall claim	105	25
Catchy/broken statements	75	55
Paper quality, print, and colour	Excellent in 124	--
Irrelevant diagrams	90	40
Statistical representation	20	110
Tabular representation	12	128

WHO: World Health Organization

Table 3: Analysis of literatures for references cited.

Parameter	Number	Frequency (%)
References cited in no. DPLs	90	69.2
Total number of references	280	100
Source of the reference		
1. Journal articles	200	71.4
2. Text books	55	19.6
3. Web sites	15	5.4
4. Others	10	3.6
Indexed	259	92.5
Retrievable	259	92.5

The literature were further evaluated for the references cited in support of the drugs promoted. Only 69% literature were with proper referencing. And the total no of references in all of them counted to 280, averaging to around 3 references per literature in support of their claims. Out of 280 references quoted 200 were from journal articles, 55 were from textbooks, 15 were from websites while 10 were from other sources of information. In around 92% of the literature the references were from indexed journals and were retrievable. [Table 3]

DISCUSSION

Every year a large number of new drug flood the Indian market. India is the chief supplier of generic drugs globally. Indian pharmaceutical sector industry fulfils over 50 per cent of global demand for various vaccines. The pharmaceutical sector was approximately valued at US$ 33 billion in 2017. Around 304 approvals were received by Indian companies from the US Food and Drug Administration (USFDA) in 2017 for Abbreviated New Drug Application (ANDA).[12]

Now a days Direct to Physician (DTP) approach is followed mainly by pharmaceutical companies to promote their products.[5] So, it's a necessity that the information provided by them should be accurate, scientific and evidence based to keep the doctors informed about the company's products, new researches and all other related information. The bitter fact is that, today the relationship between the pharmaceutical company and the prescriber has become more of a commercial rather than professional. Although the assessment of the truthfulness of all facts is a tedious & complex process, yet we have tried to analyse all the mentioned facts separately in the light of WHO guidelines, and evidence-based medicine.[5]

Most health professionals are too busy, and they completely depend on the commercial sources of information provided to them by the Medical Representatives, or advertisement brochures in form of DPLs, and it makes an important impact on their prescribing behaviour.[13] It was observed that in spite of doubt about the authenticity, and truthfulness of the advertisements claim, most of the practitioners rate the pharmaceutical advertisements as most important source of information about the drugs, the reason might be their busy schedule which prevents them from searching for truthfulness and the authenticity of the claims made in DPLs. Furthermore majority were of the view that drug marketing has a very significant impact on their prescribing habits.[5] An important fact which came into light that even the practitioners who think that they can obtain or update their knowledge from the scientific

sources could be influenced by promotional sources without being aware of it.[14]

On the basis of our observations in this study, we have seen that majority of the literatures mentioned the INN of each active moiety (94%) and the recommended dosage forms (85%), yet they missed other essential pharmacological information like pharmacological effects, and mechanism of action which were missing in (54%) and (69%) respectively. More than (90%) DPLs ware lacking information related to precautions, drug interactions, over dosage and dose adjustment in special situations like pregnancy, lactation, kidney and liver failure thereby indicating that these parameters were the most neglected ones. These findings are more or less similar to findings earlier reported in other parts of India[2,15] and Russia.[16] This suggests that not only in India, but in other parts of world, unethical prescribing is prevalent which is of great concern for health authorities all over the world.

On further evaluation of DPLs, we came to know that 81% were having one or more false/tall claims, many of which were from the new brands in the market. 58% were containing fancy/ catchy statements. Both of these aspects were highlighted in previous studies too.[2,5,16]

Quality of paper used was excellent in almost 96-97% of the DPLs, thereby indicating that every pharmaceutical company gives a lot of stress on marketing, but what they lacked is a proper presentation, irrelevant diagrams were present in 69% DPLs, which was also proven from earlier studies.[2,8,19] A statistical representation of data for the drug under promotion was present only in (15%) whereas its documentation in tabular form was present only in (9%), which are a very important aspect of drug safety. When we came to referencing of DPLs, we were surprised to note that only (69%) of DPLs were with proper referencing, rest (31%) didn't consider proper referencing important enough to support their claims. This is similar to findings reported in another Indian study.[2] The promotional brochures were full of unrealistic claims related to safety and efficacy, and those claims were therapeutically irrelevant too. Important information related to adverse drug reactions, contraindications, drug interactions, and dosage in special conditions were missing from maximum literatures. Moreover, the information which was provided was not discernible enough to be read easily with naked eyes, and it was also reported in previous study.[20]

According to the latest survey report in the United states, of the nearly $30 billion that health companies now spend on medical marketing each year, around 68 percent (or about $20 billion) goes to persuading doctors and other medical professionals.[21] This huge amount spent by the pharmaceutical company escalates the health care cost.

It is very important for the physicians to know about the flaws in DPLs, before accepting it as a valid source of information. Ignorance and aggressive marketing may influence physician prescribing behaviour without necessarily benefiting the patient. Such marketing can also lead to malpractice at the cost of patients. It is to be noted that in most developed countries like UK, Australia, and Canada there is a proper marketing code of conduct which is to be followed strictly by marketing agency.[22] In India we have regional ethics committee at New Delhi, Mumbai, Chennai and Chandigarh to collect complains against unethical drug promotion and send to drug controller to take necessary legal steps against guilty companies.[13,16] It's the responsibility of doctor to critically evaluate the information in DPLs, before taking it as authentic and scientific source of information, and inform the regulatory authority if there are any flaws.

CONCLUSION

In this study though the DPLs were collected randomly from different OPDs of JNMC Hospital, they gave us a complete presentation of prescribing habits of Residents and Doctors practising there, though small size is the limitation of this study. Further multicentric study should be done to see how other centres are doing in others parts of the country. We can further add local practitioners in the district to make the sample size bigger, and statistically more significant. Some remedial measures which can be tried are prescriber's education, reinforcement of existing ethical prescribing laws, and development of guidelines and their implementation by pharmaceutical companies. It's a combined effort of physicians, pharmaceutical industries, and regulatory authority which can help in ethical promotion of a drug and rational prescribing.

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