

Medicine Promotional Literature as a Source of Updated Information in Bangladesh: Do those Advertising Literature Promote Continued Medical Education or Deceptive Advertising?

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Abstract

Background: Drug promotional literature (DPLs) is an integral part of pharmaceutical marketing strategy. This marketing approach influences, a physician to prescribe definite variety of medicine from a particular company. Many physicians bank on exclusively in DPLs. This research was intended to appraise the DPLs available in Bangladesh for accuracy, consistency, and validity of the information in accordance with the WHO rules and regulations. **Materials and Methods:** This was a cross-sectional study was conducted in Uttara Adhunik Medical College, Dhaka, Bangladesh after collecting DPLs from the different outpatient department. The data was analyzed Microsoft Excel 2016. **Results:** None of the national and multinational DPLs fulfilled all the WHO criteria. Among the national and multinational DPLs, 94.7% and 100% presented with claims respectively. Out of 284 national and multinational DPLs references citation were presented in 82.04% and 100% respectively. Among the DPLs of national and multinational companies' relevant, irrelevant, and partially relevant pictures were presented in 48.79%, 24.65%, 26.76% and 31.58%, 26.32%, and 42.11%, respectively. **Conclusion:** DPLs of Bangladesh did not comply with the WHO guidelines while promoting their products. Evidence provided in those DPLs were mostly biased and persuasive since it is focusing mainly on the positive aspect of drug therapy. Accordingly, studied DPLs were principally aiming to maximizes industries' financial benefit rather than fulfill the educational aspects. The Government of Bangladesh should develop very stringent policy and practices regarding DPLs based on science and the WHO guideline as the literature very often act as a primary source of information among medical doctors.

Keywords: Bangladesh, drug promotional literatures, WHO

INTRODUCTION

The advertisement is a key element of marketing strategy in which the advertising messages consist of a combination of information and persuasion.^[1] WHO defines drug promotion as “all the informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase and/or use of medicinal drugs.”^[2] Globally pharmaceutical traders are overpoweringly involved in combative and contentious marketing strategies to promote their products.^[3-5] Communications and relation between physicians and pharmaceutical company representatives commence as early as undergraduate

study period and last throughout their professional life.^[6,7] Physicians are approached by medical representatives (MRs), presented with sample medicine, emblematic offerings, and aide memoire articles and industry supported continued

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medical education, promotional write-up in the medical journals, etc.^[8,9] One of the well-known advertising actions of pharmaceutical corporate house to produce marketing brochures.^[9-12] WHO emphasizes that promotional activities should be based on ethics with comprehensive and equitable information about each product should be available for the prescribers and dispensers, as for example official precise statistics.^[2] However, many drug promotional literature (DPLs) used by the pharmaceutical house did not meet the WHO 1988 criteria for DPLs.^[13-16] It has been recognized that the DPLs offered to the medical doctor has the noteworthy influence on their prescription pattern.^[15,16] Thereafter, there is a debate about the accuracy and reliability of information, provided by the drug companies through MRs to physicians not only in developing countries but also in developed countries.^[17,18] This research was conducted with the purpose to evaluate the DPLs whether the information provided in those were accurate, consistent and valid or not.

MATERIALS AND METHODS

This was an observational, cross-sectional study. Place of study - Uttara Adhunik Medical College and Hospital, Dhaka, Bangladesh. DPLs were collected from the departments of medicine, surgery, gynecology, ophthalmology, orthopedics, pediatrics, and skin. The current study investigators collected those DPLs while clinical colleagues dispose and cleaning their work area. Period of the study - The DPLs were collected in January and February 2017. Assessment basis - All DPLs were assessed in the line with the WHO criteria for fulfillment of each of the following parameters.^[2] (i) The approved generic name of the drug. (ii) The brand name. (iii) The content of active ingredient per dosage. (iv) Form or regimen. (v) Name of other ingredients known to cause problems. (vi) Approved therapeutic uses. (vii) Dosage form or regimen. (viii) Side-effects. (ix) Precautions, contra-indications, and warnings. (x) Major interactions. (xi) Name and address of manufacturer or distributor. (xii) Reference to scientific literature. In addition to fulfillment of the "WHO criteria" types of claims and pictorial content presented in DPLs were also evaluated. Claims made in the promotional brochures were classified into following categories; Efficacy, Pharmacokinetic property, Pharmacodynamic property, Safety, Cost, Convenience, Extravagant emotional claims (any claims or statement not related to patient outcome, disease or drugs). Pictorial contents of the promotional brochures evaluated were: Pictures, Scientific tables, scientific graphs.

Data management and analysis

Microsoft Excel 2016 spreadsheet were utilized data management and analysis. Data were analyzed based on simple descriptive methods.

Ethical approval

This study obtained necessary consent and approval from both academic and hospital authority.

RESULTS

A total of 303 DPLs was collected of which 284 DPLs were from national companies and 19 were from multinational companies. Information about the single drug was given in 79.23% DPLs of national companies, whereas, it was 84.21% DPLs of multinational companies [Figure 1]. Two drugs were present in 1.06% DPLs of national companies and 15.79% of multinational companies [Figure 1]. 19.72% DPLs of national companies contain fixed-dose combination [Figure 1].

Groups of drugs promoted in drug promotional literatures

The total number of promoted groups in 303 DPLs was 365 [Table 1]. Among them 343 DPLs of national companies and 22 DPLs of multinational companies [Table 1]. Among the national companies most commonly promoted a group of drugs was antimicrobials 18.95% and nutritional supplements 18.95% [Table 1]. This was followed by drugs for blood and cardiovascular 13.12%, gastrointestinal 9.62%, CNS diseases 9.04% then ophthalmic drugs 8.45%, anti-inflammatory drugs 7.00%, respiratory drug 5.83% [Table 1]. Among the multinational companies, leading groups were antimicrobials 31.81% and vaccines 13.64% [Table 1]. None of the 303 DPLs made complete fulfillment of all the criteria of WHO.

Fulfillment of WHO criteria by drug promotional literatures

Among the national companies 99.65% DPLs mentioned the generic name of the drug and on the other hand, it was 100% in case brand name [Table 2]. 52.11% DPLs included active ingredient per dosage form, 97.5% mentioned therapeutic use, 97.5% given dosage form, 91.90% DPLs include dose, 69.01% DPLs mentioned about frequency of administration and 22.89% DPLs given the duration of treatment, 42.96% mentioned side effects, 34.51% mentioned about precaution, 41.90% mentioned about contraindication, 19.01% mentioned about warning, 17.96% DPLs mentioned drug interaction, 100% mentioned their manufacturer and 82.04% DPLs mentioned references [Table 2]. Among the 19 multinational DPLs 100%, DPLs mentioned the generic name, trade name, therapeutic use, dosage form and dose, the frequency of administration, adverse effects, manufacturers

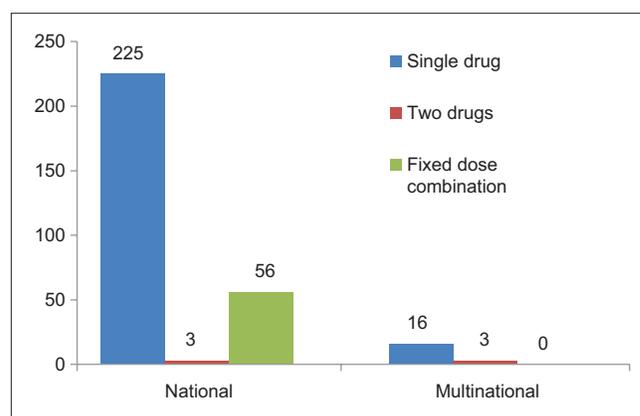


Figure 1: Types of drugs in national and multinational drug promotional literatures

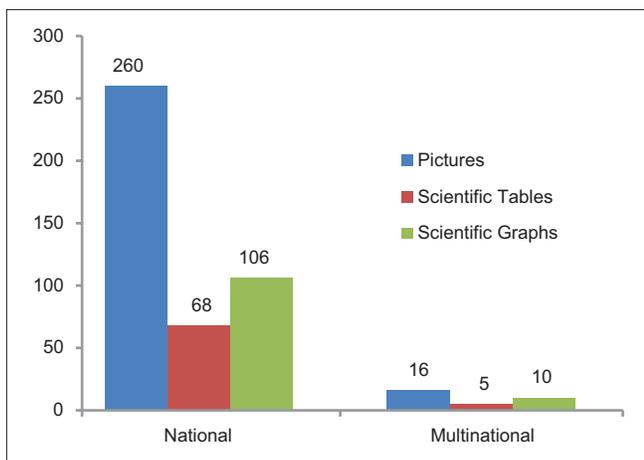


Figure 2: Types of pictures in national and multinational drug promotional literatures

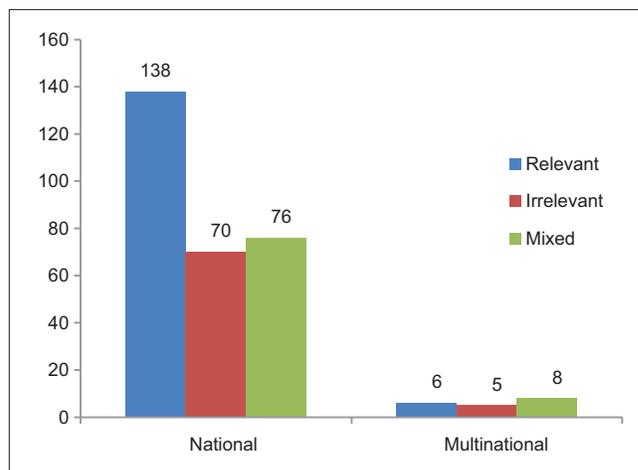


Figure 3: Criteria of pictures in national and multinational drug promotional literatures

Table 1: Groups of drugs promoted in drug promotional literatures

Promoted groups of drugs	Frequency (%)	
	National companies (n=343)	Multinational companies (n=22)
Antimicrobials	65 (18.95)	7 (31.81)
Blood and cardiovascular drugs	45 (13.12)	1 (4.55)
Anti-inflammatory drugs	24 (7.00)	2 (9.09)
Gastrointestinal drugs	33 (9.62)	0
Drugs used in CNS	31 (9.04)	1 (4.55)
Drugs used for skin diseases	2 (0.58)	2 (9.09)
Antihistamines	7 (2.04)	1 (4.55)
Drugs used in respiratory tract system	20 (5.83)	2 (9.09)
Antidiabetic and other hormonal drugs	21 (6.12)	1 (4.55)
Ophthalmic drugs	29 (8.45)	0
Nutritional supplements	65 (18.95)	1 (4.55)
Vaccines	0	3 (13.64)
Sera	0	0
Antispasmodic	1 (0.29)	0
Anticholinergic	0	0
Muscle relaxants	0	1 (4.55)
Antiseptics	0	0

CNS: Central nervous system

and references [Table 2]. 78.95% DPLs gave active ingredient per dosage form, duration of treatment, contraindication and drug interaction. 31.58% DPLs mentioned about precaution and 68.42% DPLs mentioned about the warning. None of the national and multinational companies mentioned about the ingredient known to cause problems [Table 2].

Classification of claims made in drug promotional literatures

Out of 303 DPLs, 94.7% national company DPLs presented with claims whereas all 19 multinational DPLs sited their claims [Table 3]. A total number of claims were 1062 among

the national company DPLs it was 996 while it was 66 in case of DPLs of multinational. In national company DPLs most commonly, cited claims were extravagant emotional claims 27.01%, followed by efficacy (24.90%) and convenience (22.19%). In multinational companies, DPLs also most commonly appeared claims were extravagant emotional ones 28.79%, followed by efficacy 25.76% and convenience 18.18%.

Types of pictures in national and multinational drug promotional literatures

Out of 284 DPLs of national company 260 presented with pictures, 68 have scientific tables and 106 included scientific graphs [Figure 2]. Among the 19 multinational company DPLs, 16 presented with pictures, 05 gave scientific tables and 10 contained scientific graphs [Figure 2].

Criteria of pictures in national and multinational drug promotional literatures

Out of 284 DPLs of national companies, 138 presented with relevant pictures, no relevance could be identified between the products and pictures in 70 DPLs and rest of the 76 DPLs contained mixed that is partially relevant pictures [Figure 3]. In 19 DPLs of multinational companies, 6 of them presented with relevant pictures, 5 contained pictures with little or no relevance while 8 DPLs with partially relevant ones.

Number of references in national and multinational drug promotional literatures

The total numbers of references in DPLs were 695. Among them 88.9% were present in national DPLs, 11.1% references were present in multinational DPLs [Figure 4].

DISCUSSION

Influence of drug promotional literatures on prescribing care providers are greatly reliant on profitmaking sources of medicinal information from MRs, medicine flyer and promotional material etc., and it has a phenomenal power

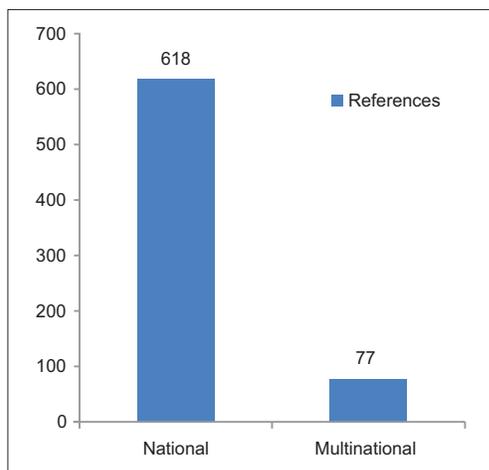


Figure 4: Number of references in national and multinational drug promotional literatures

in altering prescribing behavior.^[19-22] It was detected that regardless of the fears about the reliability of the marketed claims, the general practitioners often rated the medicinal commercial as the most imperative source of information about the medicines.^[21-23] Furthermore, many doctors were of the view that medicine promotional activity certainly influences on their prescribing live out.^[12] Even those healthcare professionals depend to update their knowledge regarding medicine from dependable sources could also be governed and controlled by the promotional activity if not very much vigilant about this issue.^[24]

Highly promoted medicines

This study observed that chemotherapeutic agents and Nutritional supplements (18.95%) were the most frequently promoted drugs followed by drugs used in Cardiovascular (13.12%) and gastrointestinal disorders (9.62%) were in the literature of national companies. Among the multinational companies, leading groups are chemotherapeutic agents (31.81%) and vaccines (13.64%). A similar study was conducted in 2014 in India. They showed that among 437 DPLs chemotherapeutic agents (17%) and nutritional supplements (13%) were commonly promoted drug group followed by drugs used in CNS, blood and cardiovascular agents (10%).^[25]

Generic names, therapeutic uses, adverse effects, contraindications, precaution and drug interactions

In this study, out of 284 national companies, generic name appeared in all but one, content of active ingredient(s) per dosage form were given in just about half (52.11%), brand name was mentioned in all of them, therapeutic use was mentioned in almost all (97.05%) of the literature, on the other hand, information regarding adverse effects (42.96%), contraindications (41.9%), precaution (34.51%), major interaction (17.96%) mentioned in those medicinal literature were not satisfactory. Previous such study showed that out of total 83 DPLs, 96.2% mentioned the generic name, indications in 81.5%, contraindications in 50%,

Table 2: Fulfillment of WHO criteria by drug promotional literatures (n=303)

WHO criteria	Frequency (%)			
	National companies (n=284)		Multinational companies (n=19)	
	Present	Absent	Present	Absent
Generic name/ INN	283 (99.65)	1 (0.35)	19 (100)	0
Brand name	284 (100)	0	19 (100)	0
Content active ingredient(s) per dosage form	148 (52.11)	136 (47.89)	15 (78.95)	04 (21.05)
Approved therapeutic use/s	277 (97.5)	7 (2.5)	19 (100)	
Other ingredients/ adjuvant known to cause problems	0	284 (100)	0	19 (100)
Dosage form	277 (97.5)	7 (2.5)	19 (100)	0
Dose	261 (91.90)	23 (8.10)	19 (100)	0
Frequency of administration	196 (69.01)	88 (30.99)	19 (100)	0
Duration of treatment	65 (22.89)	219 (77.11)	15 (78.95)	04 (21.05)
Side effects/ adverse effects	122 (42.96)	162 (57.04)	19 (100)	0
Precaution	98 (34.51)	186 (65.49)	6 (31.58)	13 (68.42)
Contraindication	119 (41.90)	165 (58.10)	15 (78.95)	4 (21.05)
Warning	54 (19.01)	230 (80.99)	13 (68.42)	6 (31.58)
Drug interactions	51 (17.96)	233 (82.04)	15 (78.95)	4 (21.05)
Manufacturer/ distributor's name and address	284 (100)	0	19 (100)	0
References	233 (82.04)	51 (17.96)	19 (100)	0

INN: International nonproprietary names

Table 3: Classification of claims made in drug promotional literatures (n=1062)

Claims	Frequency (%)	
	National companies (n=996)	Multinational companies (n=66)
	Present	Present
Efficacy	248 (24.90)	17 (25.76)
Pharmacodynamic property	107 (10.74)	7 (10.61)
Pharmacokinetic property	58 (5.82)	3 (4.55)
Safety	79 (7.93)	8 (12.12)
Convenience	221 (22.19)	12 (18.18)
Extravagant emotional claims	269 (27.01)	19 (28.79)

adverse effects in 29.7%, content in 64.8%, precaution in 37%, but information about adjuvant was missing in all screened DPLs.^[26] In 2016, another such study conducted in India in which 750 DPLs were screened. In that study out of 750 DPLs

criteria like international nonproprietary names, brand name, indications and description of the product were present in all cases (100%).^[27]

Another study reported that dosage form and its strength (98.7%), manufacturers' address (97.3%) were mentioned in most of the literature. Information related to safety such as precautions (32.6%), contraindications (33.3%), adverse effects (34.6%), overdose (1.2%) were mentioned earlier study.^[27] Studies from India and Nepal also have reported similar observations on the omission of certain important data in the drug promotional material.^[28,29]

Exaggerated misleading information

Earlier studies have reported that multinational and national drug companies often grossly exaggerate the indications for the drugs and minimize or ignore the hazards. As a result, healthcare providers were given grossly exaggerated claims and the hazards of prescription drugs remain uncovered. However, considerable improvement in promotional practices of the multinational corporations has been found over the past few years.^[30] In 2014, another such study conducted in India in which 200 DPLs were screened. In that study, information's on adverse drug reactions, contraindications, and drug interactions were missing in most of the DPLs and none of the DPLs contained all the information as per WHO guidelines these findings were also in the same line with earlier studies.^[31,32] The current study also observed that out of 19 multinational DPLs generic name, brand name, approved therapeutic use/s, dosage form, dose, the frequency of administration was mentioned in 100% DPLs. Whereas content of active ingredient(s) per dosage form (78.95%), duration of treatment (78.95%), precaution (31.58%), contraindication (78.45%), drug interaction (78.95%) mentioned in those medicinal promotional literature was less than satisfactory.

Drug promotional literatures primary target of maximize the profit

The current study findings and that of other studies done in Bangladesh, Nepal, India, Malaysia and globally exhibited that pharmaceutical houses are mostly reluctant to provide information regarding adverse effects, precautions, drug interactions and adjuvant, rather promotion is only focused on latest drug formulations.^[3,9,12-16,20,26-34] Therefore, the current study supported the view of the earlier study that "pharmaceutical companies expand the market and maintain high profit through aggressive promotion of their products in Bangladesh without any hindrance. These promotional activities compel the MRs, programmed to maximize the sale of products, to adopt unethical means when necessary."^[34]

CONCLUSION

This study found that most of the DPLs did not provide critical information as recommended by the WHO guideline for medicinal drug promotion. Thus, discloses industry-sponsored DPLs inherent motive to maximize the profit, rather than

ethical educational characteristics. There is an urgent demand of counteractive measures to this issue, especially authoritative and legislative action. Prescriber's education, reinforcement of existing laws and development of new contemporary guidelines and their implementation by pharmaceutical companies of drug promotion are possible measures. Combined efforts of physicians, pharmaceutical industries, and regulatory authority can help in the ethical promotion of a drug and rational prescribing. Furthermore, the Government of Bangladesh should develop very stringent policy and practices regarding DPLs based on science and WHO guideline as those literatures very often act as a primary source of information among medical doctors to safeguard common people of the country population from deceptive advertising promotional information strategies.

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Conflicts of interest

There are no conflicts of interest.

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