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Abstract

In India same drug molecules are sold under different brand names by different pharmaceuticals. To persuade the physicians to prescribe their brands pharmaceuticals engage in marketing techniques like giving samples, gifts, sponsoring travel etc. Many countries are striving to reduce the impact of incentives on prescription behaviour. This study explores the influence of pharmaceutical marketing on the prescription practices of doctors in India. There were 103 study subjects - 50 doctors and 53 sales personnel. Data collection was done by a self administered questionnaire. Data were collected on 36 variables which were supposed to influence prescription. The effectiveness of the promotional strategies on prescription behaviour was marked in a seven point Likert scale ranging from "not at all effective" (score=1) to "extremely effective" (score=7). Open ended questions were used to collect qualitative data. Good rapport with the doctor, launch meetings, reputation of the company, quality of the drug and brand names significantly influenced prescription behaviour, while direct mailers, advertisements in journals and giving letter pads and other brand reminders were less effective. Commonly used method of giving samples was not among the twenty most effective methods influencing prescription. Product quality and good company are still factors that influence prescription. Pharmaceutical marketing influences the choice of brands by a physician. The more expensive strategies involved in public relations are more effective. Sending mails and journal advertisements are less effective strategies. How expensive marketing strategies affect cost of the medicines has to be explored further.

Keywords

practices, physicians, prescription, influence, marketing, pharmaceutical

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**INFLUENCE OF PHARMACEUTICAL MARKETING ON PRESCRIPTION
PRACTICES OF PHYSICIANS**

Short Title: *Pharmaceuticals and prescription practices of physicians*

BY

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ABSTRACT

Background: In India same drug molecules are sold under different brand names by different pharmaceuticals. To persuade the physicians to prescribe their brands pharmaceuticals engage in marketing techniques like giving samples, gifts, sponsoring travel etc. As these increase the cost of health care many countries are striving to reduce the impact of incentives on prescription behaviour. This study explores the influence of pharmaceutical marketing on the prescription practices of doctors in India.

Methods: There were 103 study subjects – 50 doctors and 53 Sales Personnel. Data collection was done by a self administered questionnaire which covered the different aspects of sales promotion. The effectiveness of the promotional strategies on prescription behaviour was marked in a seven point Likert scale ranging from “not at all effective” (score =1) to “extremely effective” (score =7). Open ended questions were also used to collect qualitative data.

Results: Pharmaceutical marketing influences the choice of brands by a physician. Public relation, especially the rapport with the doctor, was the most effective strategy while advertisements in journals and direct mailers were the least effective strategies. Personal selling by sales persons and giving letter pads and even samples were rated less effective strategies.

Conclusions: Prescription behaviour of physicians is influenced by pharmaceutical marketing. The more expensive strategies involved in public relations are more effective. As industry uses more expensive methods, the cost of prescription drugs is bound to increase. This aspect should be examined by policy makers who are trying to bring down the cost of health care.

INTRODUCTION

In the last few years the relations between the physicians and pharmaceutical companies have received considerable attention.^{1,2} Pharmaceutical marketing differs from other types of marketing because the consumer i.e. the patients are not the target audience, whereas the physicians prescribing the medicines are the target audience of the pharmaceutical companies. It is the doctor who makes the decision on behalf of the patient. Physicians are privileged with the right of recognizing the need of their patients and recommend medications for the well-being of their patients. Hence, the relation between the physician and pharmaceutical companies may create a conflict between the ethical professional interest of a doctor and his financial self-interest. The increase in incentives to attract the doctor's prescription behaviour reflects as a rise in the price of prescription medicines. The pharmaceuticals resort to many ways in marketing their product. Giving away gifts, free lunches, sponsoring education and holidays have all been criticized as inducements which compel a doctor to prescribe without scientific basis.³ A study from Canada showed that the association with pharmaceuticals leads to less than appropriate prescribing behaviour by the doctor.⁴ Many physicians, however, do not feel that their prescriptions are influenced by gifts and other incentives provided by pharmaceuticals.⁵

What is the ethical acceptability of physicians receiving gifts from drug companies? Large industry gifts are considered as inducements while small gifts such as pens, paperweights and note pads, considered acceptable by many. Evidence from social science research suggests that gifts of negligible value can influence the behavior of the recipient and the recipient may not always realize this⁶. More than eighty percent of

physicians see drug representatives or sales personnel regularly². Studies in China⁵ and Australia⁷ showed that sales personnel do not significantly affect a doctor's prescription behaviour. One of the disadvantages of these studies, which depended on the responses of the physicians, is the possibility of "faking good bias"⁸ which is a tendency among responders to give socially desirable responses to questions relating to one's behaviour. It is essential that studies on prescription behaviour take this into account.

The increased expenditure for drug promotion will affect the price of the prescription drugs and this in turn will have an adverse impact on the expenses on health care. In India same molecules are sold by different pharmaceuticals under different brand names. To cite an example: there are over hundred and forty brands of omeprazole, a proton pump inhibitor, available in India. How does a doctor select a brand? What are the factors that influence the prescription behaviour of the doctor? What is the influence of pharmaceutical marketing on prescription behaviour? There are no recently published studies that have addressed the factors that influence the prescription behaviour of physicians in India. This study aims to identify the factors that influence the prescription behaviour of physicians in the choice of brands.

METHODS

Study Subjects:

Data collection was conducted by a self administered questionnaire. The study subjects were from two categories: physicians and sales personnel. The sampling of physicians was done by stratified sampling. There were three strata of physicians: i) General practitioners, ii) Consultants (those with a clinical postgraduate degree) and iii)

Specialists (those with either DM or MCh degree). The sales personnel were also sampled similarly so that a fair distribution of field staff, middle level managers and supervisors were available.

Measures:

Thirty four marketing methods were identified during a preliminary discussion with sales personnel and physicians and from the literature. These marketing methods were classified under five promotional strategies namely - i) Advertisements, ii) Sales promotion, iii) Public relations, iv) Personal selling and v) Direct marketing. The definitions, of these strategies, used in this article follow the descriptions by Kotler⁹.

Advertisements refer to non-personal promotion of drugs through magazines or banners in conferences. Catch cover of samples and catchy advertising strap lines also were included under advertisements. *Sales promotion* is the use of short term incentives to encourage prescriptions. These include brand reminders like letter pads, pens, paperweights etc. High value gifts and bulk sampling for trial purposes are also included under sale promotion. *Public relations* involve a variety of programmes designed to promote or protect a company's image or its individual products. These involve product launch meetings, conducting a discussion by a specialist doctor related to the product, organizing seminars and sponsoring physicians for conferences. *Personal selling* is the detailing by the representative of the company and the way the sales personnel handle objections and use visual aids. Drug sampling comes under the domain of personal selling. *Direct Marketing* involves sending information, products or advertisements

through post, telephone, email or internet to communicate directly with specific customers. There were many items under each domain.

The variables representing the marketing methods of the pharmaceuticals were included in the questionnaire. The variables were jumbled and represented without any subheadings to avoid any patterns of endorsement. The responses were graded in a seven point Likert scale. To safeguard the anonymity of the respondents the data on name and address were not collected. No identifiable personal information was collected from the respondents. The responses were marked on a seven point Likert scale. The responses ranged from 1 to 7 (1= not at all effective; 2= moderately non effective; 3= somewhat non effective; 4= not sure; 5 = somewhat effective; 6= moderately effective and 7 = extremely effective). The data analysis was done by EPI INFO software.

RESULTS

The study subjects included 19 physicians with MBBS degree, 20 with MD, MS or Diplomas (specialists) and 11 with DM or MCh degree (Super-specialists). The sales personnel surveyed included 28 field staff and 25 managers.

Table I shows the rating of the five major drug promotion strategies. The physicians agreed that the most important strategy that influenced prescription behaviour was *public relation* of the company. This involved developing a good rapport with the doctor. This is achieved by activities like sponsoring physicians for conferences and organizing meetings related to the product. These meetings could be either launch meetings, meetings involving opinion makers or seminars. Sales promotion and personal selling were rated after public relations with mean scores given by physicians of 4.77 and

4.41 respectively. Direct marketing was the least effective strategy. This had a mean score of only 3.88. The mean score for advertisements was 4.29 which was higher than the mean score of direct marketing but less than personal selling.

The most effective and least effective communication process variables are given in table II. Having a personal rapport with the doctor is the most effective variable. The second most effective variable is the frequency of visits by the sales personnel. Other effective variables are: organizing launch meetings, giving high value gifts and sponsoring the physicians for conferences. Communicating with the physicians through direct mailers, or through advertisements in journals are not effective methods in influencing prescription behaviour. Advertisements in Indian and foreign journals were rated as “somewhat non-effective” methods. Low value gifts and visits by senior sales personnel were also rated as less effective methods.

Table II also shows that the effective marketing methods are not solely related to incentives. The quality (as perceived by the physician) and cost of the product, reputation of the company, brand name and the first launch advantage are also factors that make a physician prescribe a brand.

Data collection from sales personnel helped in validating the data with the help of triangulation. There was good correlation between the opinion of physicians and sales personnel, indicating the consistency of observations.

Many factors were highlighted by the physicians in the open-ended question. The availability of the product was emphasized as an important factor. Personal service to physicians like samples for personal use was also a factor that influenced prescription.

One doctor opined that *“giving gifts and sponsoring for conferences will be worthless if the quality of the product and the reputation of the company are not good”*.

DISCUSSION

This study shows that pharmaceutical marketing influences the prescription behaviour of physicians. The effectiveness of different methods varies widely. The highly effective communication process was public relations. These public relation strategies are more expensive than other strategies. Naturally this will lead to increased cost of prescription medicines and health care expenditure. Sales personnel had also supported the importance of public relation in influencing the prescribing behaviour of the doctors.

When the physician listens to the detailing by a sales person and later accepts the gifts or samples given by the sales person an immediate industry-physician relationship is established. This puts the doctor under some obligation to prescribe the brands that are promoted. The time spent with sales personnel is associated with some benefits to the doctor like getting information and free samples but it takes away the physicians' valuable time. The time, spend with the sales personnel should be valued against the monetary or leisure benefits gained in that time. The physician could have utilized the time for leisure activities, gained monetary benefits through consulting patients or even improve his/her knowledge by keeping up-to-date with the literature.⁴ Samples left by the sales personnel may be the only reminder to the product long after the detailing. Sampling which is part of any visit by a sales person is not a major factor that influences prescription according to this study. Both sales personnel and physicians felt that sampling was only “some what effective” in influencing prescription practice. This

contradicts the age old notion that sampling of drugs is the major strategy that influences prescriptions. When the doctor gives free samples to a patient it was taken as an indicator that the doctor is sensitive to the financial situation of the patient and it may also indicate the care and involvement of the doctor.

As expensive promotional strategies increase the spending on health care, one has to decide whether there should be a control on industry-physician relationships. It has been shown that gifts, however small, influence the behaviour of the recipient⁶. A prescription has an impact on the health of the patient and may also have financial advantages for the physicians and the pharmaceutical industry. Industry-physician relationship is an ideal target for interventions aimed at reducing health care costs.

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Table I. Mean Ratings of marketing strategies by physicians and Sales Personnel.

Strategy	Ratings of Physicians	Ratings of Sales Personnel	Combined Ratings
Direct marketing	3.88 (1.24)	4.62(0.83)	4.25(1.12)
Advertisements	4.29 (1.06)	5.10(0.76)	4.69(1.51)
Personal Selling	4.41 (0.97)	4.41(0.45)	4.41(2.68)
Sales Promotion	4.77 (1.44)	5.35(0.86)	5.05(1.22)
Public Relations	5.15 (0.98)	6.06(0.56)	5.60(1.39)

Figures in parenthesis indicate standard deviations.

Table II. Least effective and most effective marketing methods.

	Median	Mode	Mean	Standard Deviation
LESS EFFECTIVE MARKETING METHODS				
Direct Mailers	5	5	4.03	1.45
Journal Advertisements	5	5	4.40	1.74
Low value gifts	5	5	4.51	1.71
Visit of Senior sales personnel	5	5	4.94	1.62
Drug Samples	5	5	5.00	1.38
MORE EFFECTIVE MARKETING METHODS				
Rapport	6	7	6.74	0.49
Frequency of visits by sales personnel	6	7	6.66	0.59
Launch meetings	6	6	6.20	1.11
Quality	6	7	5.99	1.25
Reputation of the Company	6	7	5.92	1.27
High Value Gifts	6	6	5.80	1.26
Sponsoring for conferences	6	6	5.80	1.29
Brand Name	6	7	5.78	1.30
Cost of the product	6	6	5.57	1.14
First Launch	6	7	5.31	1.81