

Exploring The Impact Of Pharmaceutical Marketing On Prescribing Behaviour Of Doctors In India: A Critical Review

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Abstract

Misleading information, incentives, and unethical trade practices have been identified as ways to increase prescriptions and sales of drugs, according to the World Health Organization (WHO), which defines drug promotion as all activities performed by manufacturers or distributors that influence the prescription, supply, purchase, or use of medicines. The pharmaceutical sector in India has seen a significant transformation in the past few years. Many factors, including rising health care expenditures on pharmaceutical goods and a rapidly changing regulatory environment, have pushed pharmaceutical firms to rethink their marketing techniques. The pharmaceutical business is using a variety of sales and promotional (PR) channels to persuade doctors and patients that their products are safe and effective. Pharmaceutical corporations use a variety of strategies to persuade doctors to prescribe their products, including direct-to-consumer advertising, direct-to-physician samples provided by medical representatives, advertising in medical publications, gifts, conference sponsorships, and more. Because of rising costs, there is a growing worry about prescription practices that may be hazardous or even nonsensical. Accordingly, firms are focusing all of their marketing efforts on persuading physicians to prescribe certain drugs and brands, given the present industry competitive landscape. Medical representatives give incentives such as conferences, seminars, national and international sponsorship, and incorrect medical information to influence prescription habits. There are a variety of unethical business tactics used by manufacturers, pharmacists, and medical representatives; nevertheless, the discovery that pharmacists are important factors in this system and provide patients with medication information was particularly interesting.

Keywords: Pharmaceutical sector, prescription, direct-to-consumer advertising, direct-to-physician

1. Introduction

Worldwide, the pharmaceutical business is preparing itself and looking for novel methods to fuel growth during the past decade. As measured by output and market value, India's pharmaceutical sector is the world's third biggest. For the 2019-2020 fiscal year, the pharmaceutical industry had a total annual revenue of Rs. 2,89,998 crore. Indian pharmaceutical exports were \$146,260 million, while imports totaled \$42,943 million for the year 2019-20.. Health care industry growth is being fueled by a variety of causes including decreased taxes on pharmaceuticals and

cheaper medication prices as well as aging populations, greater chronic illness prevalence and the incidence of disorders like asthma, fewer regulatory hurdles (Report on the Growing Pharmaceuticals Market, 2018). The global pharmaceutical industry is one of top five in the economy, and almost one-third of the market is controlled by the 10 biggest pharmaceuticals production businesses , with sales of more than US\$10 billion/year and profit margins of over 30 percent . The distribution in terms of value of global pharmaceutical companies i.e., 45 percent value share by 17 large pharma, 23 percent

share by 277 smaller pharma companies, (specialty pharma), the generic sector and China which are approx. same in size followed by Japanese pharma (6 percent) and Biotechnology (3 percent) (The Future of the Global Pharmaceutical Industry 2017).

Around the globe, there is increased awareness by governments about the expenses and due to increasing pharmaceutical expenditure burden the policymakers have raised worries and are seeking for healthcare changes. According to McKinsey research 'India Pharma 2020 Propelling access and acceptability, unlocking genuine potential' there would be moderate development in established markets and in the future decade and the developing markets will become increasingly more significant. The Indian pharmaceuticals market together with China, Brazil and Russia markets will drive expansion within global markets. The pharmaceutical sector is heading through a wave of consolidation with the goal to boost their brand equity and distribution in the practically branded-generics market. Marketing is taking precedence over research and development expenditures. It is becoming more difficult to compete in the pharmaceutical business due to the rising health care costs, the changing regulatory environment, competition from generic medication producers, and ongoing price pressure. Other issues in the pharmaceutical business include demand from buyers (hospitals and wholesalers or manufacturers) to provide cost-effective pharmaceuticals to stay competitive in the market. Nowadays, pharmaceutical businesses are searching for new approaches to increase medication discovery potential, minimize time to debut a brand in the market and squeeze on the excess expenditures. To promote their goods, firms averagely spend one-third of all sales revenue (i.e., thrice the revenue what they spend on R & D). Companies maintain a close eye on branding and aim to improve their brands via different PR techniques.

The industry tries to persuade physicians and patients about the effectiveness of brands using a variety of sales and promotion (PR) channels. Direct-to-consumer advertising, direct-to-physician sampling by medical personnel, advertising in medical publications, gifts, financing travel for conferences, etc. are some of the marketing techniques pharmaceutical

firms use to convince physicians to prescribe their company's products. The rising cost of pharmaceuticals has also led to an increase in concerns about improper, and even damaging or illogical, prescription practices. 'The success of a corporate brand relies on judgements or choices taking into consideration numerous elements,' is the prescribing behavior of physicians. As a result of current knowledge about the medications, the patient's condition, and past clinical experiences with previous therapies, this person's conduct may be transactional in nature. Doctors have a tendency to get devoted to certain products and enterprises. Published research shows that eligible individuals are not always provided the pharmacological therapy suggested for the illness state and that pharmaceutical items are misused. It has a negative influence on health, quality of life, and health care costs (Theodorou et al. 2009).

There has been a tremendous shift in the pharmaceutical sector in India in recent years. Pharmaceutical firms throughout the world have steadily improved their working practices over the last decade, and now many of these companies are well-known global multinational corporations. Marketing excellence, sales force excellence and commercial operations are the primary areas of concentration for the company. The Indian pharmaceutical business is the fastest-growing in the world, and it is Asia's third-largest market. In terms of value and volume, India's pharmaceutical sector is just 1.4 percent and 10 percent of the worldwide pharmaceutical business, respectively. In 2017, the sector generated \$33 billion in revenue, and that figure is predicted to rise to \$100 billion by the year 2025. The Indian pharmaceuticals market increased at a CAGR of 12.79% in 2015 from US\$ 6 billion in 2005 (Shirude 2015). Prescription-based marketing is indirect marketing as a physician prescribes the drug (product) and patient is the end user, for instance drugs for antibiotics. The over-the-counter drugs are covered under direct marketing as patients buy such drugs themselves. Some examples of such drugs are anti-cold preparations and analgesics. The pharmaceutical industry consists of marketing of bulk drugs and formulations. Bulk drugs, also known as Active Pharmaceutical Ingredients (APIs), are the ingredients in a drug that give its therapeutic effect. Various

companies like MSN Laboratories and Dr Reddy's Laboratories manufacture Bulk Drugs. For example, MSN Laboratories manufactures and exports the APIs like Rosuvastatin Calcium and Atorvastatin into Indian and foreign markets like Middle East countries, United States of America (U.S.) and European

markets. The bread- earner product of MSN Laboratories is the API Rosuvastatin Calcium. Rosuvastatin Calcium is a class of statins that are used for lowering cholesterol in the body. It is exported by MSN Laboratories to countries like the U.S. and Europe.

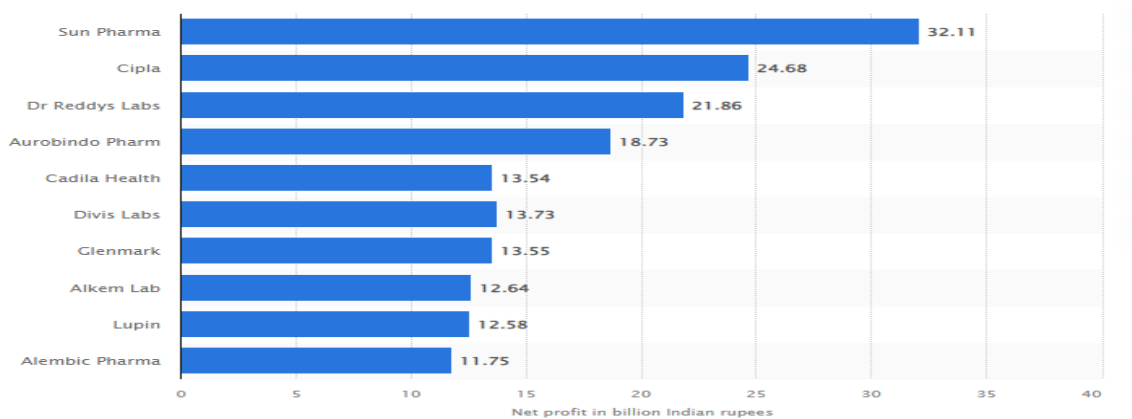


Figure 1 Revenue of Indian Pharmaceutical Sector

Over the last many years, the pharmaceutical industry has contributed significantly to the global market due to world-class capabilities, by ensuring high quality affordable medicines and favorable market conditions (FICCI 2017). Currently, Indian pharmaceuticals are sold in over 200 countries, with the United States being the primary market. Indian government measures to decrease costs and concentrate on lowering healthcare prices have resulted in an increase in the percentage of generic medications in the market. Recently, the Drug Price Control Order (DPCO) proposed to add non-scheduled drugs under its sphere and amend the method of price setting in such categories. The excellence of sales force and automation has now become a main digital priority for the Indian pharma companies. Health-care and pharmaceutical spending in India is being propelled by both strong economic development and a rising number of people with health insurance.

Studying consumer behavior is beneficial to salespeople because it allows them to more easily meet their goals by recognising the wants and requirements of customers. It is easier for salespeople to sell their products if they know what motivates customers. Competitive advantage may be gained through studying

customer behavior. The more information they have about their customer, the more equipped they are to outperform their rivals. Marketers may devise marketing plans by studying consumer behavior, such as when and where customers make purchases. When it comes to undertaking market opportunity scanning, it's also crucial for marketers to understand the market. Because drug sponsorship is morally repugnant, it has long been a source of controversy in India and elsewhere (Thawani 2002). Prescription procedures in the pharmaceuticals sector are governed by medication endorsement, as opposed to other products where consumers have a say in what they get. Morality is the driving force behind the prescription medication market's extreme personality. As a result, the industry is often referred to as the "ethical drug" market. In 1998, the World Health Organization (WHO) released a landmark "moral criterion for therapeutic medication endorsement" in an attempt to ensure that the growth of healthcare is maintained and pushed forward via the balanced use of pharmaceuticals and to rein in immoral advertising practices. Medical product endorsement is defined as "educational and influencing action by manufacturers/distributors to convince the advice/delivery/acquisition/use of therapeutic medications" in this overview document. According to WHO, this standard does not

include legal duties; nonetheless, countries may embrace legislation or extra events based on them as they seem robust.

Unlicensed physicians, or "quacks," play an important role in India's healthcare system alongside licensed doctors. As a result, pharmaceutical endorsement has the potential to influence not just the use of a medication (product), but also its use to our benefit. The marketing information for prescription and over-the-counter pharmaceuticals is controlled by national law in India, as it is in other nations. Guidelines for drug marketing in India advise the legalization of OTC and recommended medications to be promoted.

Self-medication is a major part of the Indian pharmaceutical system because of the country's socioeconomic and political conditions, and there is no way to avoid it. Customers are more likely to pay for medications when they have access to useful information about the products they are buying. Customers with little or no medical training are more likely to fall prey to unprincipled medicine endorsement practices. Doctors' work is highly regarded all across the world. Doctors have been compared to 'God' since the Vedic period. They assist their patients get well by diagnosing their ailments and prescribing a treatment plan. They have had a major impact in improving clinical services via their positions of responsibility in the healthcare industry. Managing health care and the pharmaceutical business would be impossible without doctors. Since today's pharmaceutical business is so competitive, physicians are becoming more and more important clients for pharmaceutical companies. Influencing their patients' choice of brand is a doctor's primary responsibility. A written prescription is a crucial document between the doctor and the patient when it comes to prescription medications. Consequently, the doctor has become the most important person in pharmaceutical marketing, and the tactics focus around product, pricing and promotions. From conducting clinical studies to launching new drugs, pharmaceutical corporations are making every effort to preserve a healthy working relationship with physicians.

2. Problem Statement and objective

There is a lack of studies in India to explain doctors' prescription behavior in this country. There are no formal and major attempts to develop innovation capacities because of the absence of links between academics, governmental institutions, and business. There is still a lot of work to be done in the area of pharmaceutical marketing research, particularly in terms of understanding how doctors use prescription drugs. Information on prescription medication trends and variables affecting prescribing choices should be collected to help facilitate sensible drug usage.

Various components of pharmaceutical marketing were examined in this study, which aimed to identify the research areas of prescribing behavior (PB) of physicians and other variables that influence prescription decision-making. To fill in a vacuum in the literature, this study will provide light on the criteria for prescribing, the sources of physician knowledge, physician views toward generics or innovator brands and their role in the decision-making process among other things... For the purpose of better understanding the influence of pharmaceutical characteristics like brand equity on prescription behavior, this study focuses on the 'prescribed brands' selected by GPs and CPs physicians during their normal prescribing environments. Pharmaceutical marketing and prescription behavior have long been a contentious subject. For this reason, it was imperative to properly investigate these modifications in light of the present pharmaceutical industry landscape. Prescription behavior has been studied in this study with following objectives:

Objectives:

1. To study various pharmaceutical marketing strategies.
2. To analyze the impact of pharmaceutical marketing on prescribing behavior of doctors.
3. To explore new marketing strategies influencing prescribing behavior amid Covid-19 era.

3 Pharmaceutical Marketing Dynamics

In order to influence its intermediate client, the healthcare and prescription medicine industries use an uncommon mix of marketing efforts,

notably personal details and free samples. Furthermore, the pharmaceutical industry's marketing tactics are quite different from those used in other industries (Manchanda et al 2005). For one thing, in the market for prescription drugs, there is a clear breach in the traditional buying process: the decision maker is a doctor, who selects from a variety of drug alternatives, but the patient is the one who takes the drug and is ultimately liable to pay the physician's choices (Gönül et al 2001). Therefore, physicians are the most essential participants in the pharmaceutical marketing system because of their intermediate function. Prescriptions written by doctors decide which medications (brands) are prescribed to patients (patient). The fact that pharmaceutical firms place so much emphasis on educating and influencing doctors as critical decision makers explains why. As a result, the pharmaceutical industry places a high value on influencing physicians and devotes significant resources for doing so (Ibid). Many of the pharmaceutical corporations' actions may be seen as immoral, although they are commonplace in this field (Wazana 2000).

When it comes to prescriptions, a description of how and what physicians consider when prescribing is an essential aspect of improving patient care quality. As a result, pharmaceutical marketers must do frequent and ongoing research on how physicians prescribe their products. Thus, a marketing strategy should be tailored to each physician market segment's unique traits and criteria. When it comes to innovation, there's no shortage of money spent on marketing. There is also a 20-30 percent of sales turnover spent on promotional and marketing expenditures, which is about three times what is spent on R&D (Lexchin 1993). The word "promotion" refers to actions including the dissemination of information and the marketing of medical goods with the goal of encouraging their prescription, supply, or administration. The ability to determine prescription trends via medical representatives (MRs) is a significant tool for the pharmaceutical industry. These MRs follow a doctor for weeks or months to see whether he or she is prescribing the medicine after receiving a free samples. As a result, if the doctor refuses to intervene, people go in and attempt to change their own habits. They may penalize physicians who don't write the

prescriptions and reward those who do. In this way, they may encourage physicians to switch to their company's medicine if they learn that a physician has just moved over and is prescribing more of a competing prescription (Hopper et al 1997).

The pharmaceutical corporations' marketing managers are now asking themselves: What are the most successful ways to get physicians to write prescriptions? Whether or not physicians' perceptions of pharmaceutical corporations' varied marketing methods are different or not. What can pharmaceutical businesses do to ensure that their consumers (physicians) are satisfied? Marketing, scientific evidence, and prescription patterns are all intertwined, according to (Randall 1991) research at the Stanford Prevention Research Center. 'Physicians should note that the advertising of medications could have a wider influence on their practise than they generally recognise, especially when data is absent,' he says.

4 Pharmaceutical Marketing Tactics

The pharmaceutical industry's marketing of medications is extensive and has become a daily part of the lives of most doctors. Most medical magazines feature advertising for pharmaceuticals that give information about new products and brand name drugs that are sold directly to customers without their permission. While some marketing methods are more personal, others are more generic. Involved are the distribution of presents to doctors, sponsorship of educational and social events, and the development of personal connections between corporate representatives and doctors (Brett et al. 2003). There has been a lot of discussion about the ethical difficulties that arise from these techniques in recent years. According to a number of academics, the marketing of pharmaceuticals is a major issue (Chren et al. 1989; Waud DR 1992; Wazana 2001; and Gibbons et al. 1998). Despite this, medical professionals continue to accept gifts and participate in drug company-sponsored events.

In India, pharmaceutical firms are said to spend between one-sixth and one-fifth of their annual revenue on marketing. Specialty disciplines including cancer, neurology, cardiology, and diabetology have also been noted by industry experts as necessitating additional training for

sales representatives due to the rapid advancements in these fields. Sales promotion, medical rep training, and brand development account for a considerable portion of the revenue generated by the top 10 Indian pharmaceutical corporations. Revenue and marketing expenditures for many of these organizations are broken down into 14-15 percent sales, six to seven percent sampling, and six to seven percent marketing tools including brochures and scientific input. In a study of about 100 doctors in India, researchers found that doctors' prescribing decisions are influenced more by commercial information from pharmaceutical companies than by scientific information (Taneja et al. 2008).

Many studies have shown that doctors' prescribing habits may be influenced (Kotwani et al. 2010 ; Saito et al. 2010 ; Bunc et al. 2010 ;Warrier et al 2010 ; Siddiqi et al. 2011 ; Oshikoya et al. 2011). A doctor's attention must be gained first and foremost via personal contact or performance feedback in order to influence their behavior. Physician involvement in developing and testing a novel treatment method is likely to benefit from a variety of tactics. As a result, pharmaceutical corporations use a variety of marketing strategies with varying degrees of overt and covert promotional purpose in an effort to boost prescription. According to the following categories, these marketing efforts may be subdivided:

4.1 Continuous Medical Education and Prescribing Behavior

Medical researchers and other specialists play an important role in this novel approach to medication marketing. Medicinal research and technology are advancing at an accelerating pace. Doctors need educational resources to help them stay up with the fast changes in medical practice. In order to influence the prescription behavior of physicians, a variety of instructional initiatives are used. Since then, CME (Continuous Medical Education) has grown in popularity. Intervention programmes in the form of continuing medical education may influence doctors' attitudes about prescribing, according to previous studies (Wun et al. 2002 ; Zwar et al. 1999 ; Hogerzeil et al. 1995). CME programme income in the United States is currently 60-65% derived from

industry sponsorships of CME programmes during the last several years (Steinman et al. 2007). Professional associations, registration fees, government agencies, contributions, and pharmaceutical firms all contribute to the expense of holding CME events. Drug company sponsorship of CME programmes has been hotly discussed in recent years, but even the conferences themselves are forced to seek funding from the industry. They are worried that they won't be able to attract high-quality speakers if they don't have industry sponsorship. In addition to the quality of service and cuisine, this may have an impact (Kalantri 2004). As a result, an unholy alliance forms between medical professionals and pharmaceutical corporations. There is a significant risk to the health care business from possible conflicts of interest stemming from industry-funded initiatives because of their technically open character. CME organizers have a financial incentive to design educational programmes that portray firms' goods in a favorable light, a major source of conflict (Steinman et al. 2007). But CME is essential for sharing new medical advancements and enhancing the quality of care that doctors deliver to their patients. Some of the difficulties raised above can only be addressed by making significant changes to the way CME is organized and regulated. Meanwhile, doctors must be mindful of and limit commercial interference in their CME.

Almost no meetings, seminars, or conferences are conducted in India that aren't sponsored by pharmaceutical corporations looking to promote their products. Many of these initiatives are organized by the company's marketing department rather than the medical or research department, which tends to jeopardize the scientific credibility and impartiality of such activities (Smith 2003). Non-rational prescribing is also associated with a lack of therapeutic prescription practice training, which may be monitored, adjusted, and improved via CME treatments that are specifically developed for educational purposes (Kshrisagar et al. 1998). Academic detailing (educational outreach) is a recent strategy to encourage appropriate prescription prescribing in India and is a need at this time.

4.2 Activities of Medical Representatives and Prescribing Behavior

One of medicine's most contentious concerns in recent decades has been the interaction between doctors and pharmaceutical firms. Pharmaceutical representatives (PRs) have direct contact with doctors and play an important part in the industry's promotional operations. The use of printed product material, medicine samples, and gifts in the promotion and sale of pharmaceuticals is standard practice for every pharmaceutical business. A company's global sales force might include anywhere from 2000 to 8500 employees, and that number is steadily rising (Manchanda et al. 2005). There have been previous studies examining conflicts of interest between doctors and public relations (PR) representatives. Many doctors were found to meet with PRs on a regular basis and participate in a range of promotional activities, according to these research (Lieb et al 2010 and Saito et al 2010). Prescription behavior has long been thought to be impacted by the activity of pharmaceutical companies in this area (Lexchin 1993). Because of the money spent on this marketing campaign, a company needs to know how doctors react to the efforts. Prescriptions written by doctors may increase as a result of detailing, according to some studies (Manchanda 2004 and Lexchin 1993).

More than 20 sales agents contact an Indian doctor on average each month to pitch their products (Foppe 2006). Around 40000 industry representatives work in India. In addition to their salaries, they receive bonuses for exceeding sales targets, which could tip the scales in favor of aggressive drug promotion. More than 80% of physicians visit drug representatives on a regular basis, despite evidence that their advice is unduly favorable and that prescription practices are less suitable as a consequence, according to studies in numerous countries (Lexchin 1997). Personal encounters with medical representatives have a significant impact on physicians' attitudes regarding pharmaceuticals, notwithstanding doctors' claims that their knowledge of drugs is unaffected by business operations (Bhatt 1993). A sales representative was cited as the source of new items recommended by 58% of UK general practitioners in a study. The physicians also expressed concerns about the lack of information on side effects and the promotion of indications that were not recorded as such (Bauer et al. 1966). It has been found that the

pharmaceutical industry has a strong influence on doctors' prescribing practices and that physicians are often unable to discern the commercial messages and inputs that ultimately influence their therapeutic decisions, according to a study that looked at the views of practicing physicians on three different aspects of drug prescribing. Medical representatives' actions have been restricted as a result of these findings (McGettigan et al. 2001). Representatives in Sweden must meet with a group of physicians after receiving an appointment from the department director. When a product is new and scientific, the director of the department reviews the advertising material and allows representatives to make presentations. There is a rule that prohibits representatives from handing out gifts or pads to physicians (Smith 1985). Many physicians in a German survey said it was critical that PSR provide them with information. A more impartial information source than pharmaceutical company-sponsored training sessions is thus required to guarantee that physicians are receiving more accurate information (Lieb Klaus et al. 2010).

4.3 Gifts and Prescribing Behavior

The human proclivity to form networks of responsibility is rooted in the exchange of gifts (Katz et al. 2003). Gifts are important marketing tools in the business sector because they help maintain the lines of communication open between parties who are working together. One of the tactics pharmaceutical corporations employ to influence physicians is to offer them gifts. There are many different types of presents, ranging from practical ones like office supplies and desk accessories to extravagant ones like travel subsidies and non-medical trinkets. Though it is commonly regarded as a standard, many physicians are concerned about the ethical ramifications of this seemingly benign procedure. Giving little gifts to doctors in order to educate them about the wide variety of things accessible to them is acceptable, according to some. When it comes to a patient's care, there should be no conflict between the firm and the physician's interests. As a result, pharmaceutical companies often provide presents to doctors, which is both customary and controversial. (Pinto 2007)

The issue of pharmaceutical companies giving gifts to doctors has reappeared in the last few

years. Whether or not pharmaceutical firms have an impact on doctors' behavior and, if so, on the quality and expense of healthcare and the medical profession as a whole, is a major focus of this debate (Blumenthal 2004). An implicit link between the doctor and the corporation is created anytime the doctor takes a gift, according to (Chren et al. 1989). As a consequence of the presents, the doctor is more likely to provide a prescription for the requested medication. According to (Waud 1992), "from the press one might obtain a notion of what it costs to purchase a judge or senator."

Every year, many physicians get several gifts from the drug firms, and most doctors deny their impact, despite substantial proof to the contrary (Wazana 2000). Drug representatives' influence on prescription behavior is correlated with the quantity of gifts that physicians get (Ibid). The practice of accepting meals and travel or lodging fees for sponsored educational sessions notwithstanding evidence that this is connected with a rise in formulary requests and prescriptions for the sponsor's medicine is widespread (Lexchin 1993). CME events sponsored by pharmaceutical companies tend to focus on the sponsor's product rather than that of its competitors.

American Medical Association and US Pharmaceutical Manufacturers Association rules recommend that the presents should not be large in value and should entail a benefit to patients and should not be accepted if there are "strings" connected for prescriptions (Patel 1992). "gifts" of more than minimal value are deemed unsuitable by the Pharmaceutical Research and Manufacturers of America (PhRMA), although modest presents may be acceptable (Katz Dana et al 2003). Small gifts are seen by physicians as more ethical than big ones in surveys and letters to medical journals as having no impact on the opinions of doctors on a product. Gifts, on the other hand, add to the escalating costs of medical treatment and the rising costs of prescription medications.

4.4 Advertising and Promotional Informational and Prescribing Behavior

Although the efficacy of ads in medical publications is widely questioned, they may help physicians get interested in a new treatment. Despite the fact that journal

advertising is often discovered to be deceptive, physicians' prescription habits are still being influenced by them (Spielmans et al. 2008). Even after a medicine is released, the advertising serves as a reference point for dosage and adverse effects, and they aid in the physician's comfort level with the medication in the long run, as well. Despite the fact that advertisements in medical journals may not have much of an impact on prescribing, the return on investment is high enough for the corporations (Henderson et al. 2008). In India, no medical publication would be able to exist without the presence of medication ads. At trade shows, exhibition booths, and in direct mail to medical professionals (such as brochures), most marketing messages appeal to the rational/product/ego of the audience. Ads in prestigious medical publications from 18 countries were examined, and it was discovered that half of the 6,700 ads examined omitted the necessary precautions and warnings. As well as reputable medical organizations' continuing education programmes and periodicals and textbooks as the finest sources of information for keeping one's expertise up to date, many other sources of information were also regarded (Girdharwal 2007). Direct-to-physician marketing is a common strategy used by pharmaceutical corporations. Promotional marketing pamphlets, based on clinical research, are commonly used in this kind of marketing, which may affect how physicians prescribe drugs (Cardarelli et al. 2006). More than 7 billion dollars were spent by the pharmaceutical industry in 2004 on marketing pharmaceuticals, including drug samples, to doctors. There is lack of effective control over the advertising of drugs in India despite a drug control authority. Many of the current advertising in the medical publications that are sent to physicians merely mention the brand names without providing any information about what the product includes (Jain et al. 2011). The product's qualities are misrepresented, and there is no information available on how dangerous it is or what measures should be taken. An example of this may be seen in ordinary Western publications, where ads are more common. Prescription patterns will be unreasonable due to a lack of effective control over advertising and a lack of an alternate source of information.

4.5 Free Drug Samples and Prescribing Behavior

Free samples are a favorite of patients and physicians alike since they make both of them feel good about giving them out (Chimonas et al. 2009). Influenced by samples, clinicians' prescription behavior is greatly influenced (Morgan et al. 2006). When doctors have access to samples, they are more inclined to recommend medications that have been highly marketed (Warrier et al. 2010). According to Chimonas and Kassirer, sampling boosts the expense of healthcare and hence does more damage than benefit. They also discovered that fewer than a third of all sample receivers were low-income, whereas individuals in the highest income bracket were the most likely to obtain free samples. As a result, free medicine samples are used mostly for marketing. Free samples are provided to physicians, however the expense of these samples is ultimately passed on to patients in the form of higher medication formulation costs. As a result, the patient is a victim of a technique that serves only a restricted purpose and offers nothing in the way of rationale.

4.6 Marketing trends in post COVID-19 Era

The present pandemic has an impact on existing or near-term marketing and investment plans, which is an indication of pharma marketer commitments under changing and adaptable conditions. Social segregation, lock-downs, development constraints, and a general reluctance to go outdoors are plainly issues for pharma marketing to address. Indeed, the influence of COVID-19 on clinical preliminaries was cited as the area's second highest concern. Companies are more effectively negotiating the new realities in order to complement new internet techniques for contacting more doctors and representatives. The workflow has improved as a result of online training, digital conferences, and so on. Marketing budgets, objectives, and investments have been reduced to some extent, which leads to considerations of owned media, which starts upgraded websites or innovative improvements in digital platforms. Such circumstances cause a shift in pharmaceutical marketing.

Access to Sales Representatives

Despite the pandemic situation, sales representatives in pharma marketing are diverting towards newer digital tools and platforms for personal selling, which are enhancing marketing. Sales representatives have developed, and there are several opportunities to learn about new treatments and launch goods using digital platforms such as online marketing, video conferencing, e-sampling, e-detailing, and so on. Physicians usually prefer sales representatives for maximizing creative ideas and in-depth information for certain newer therapies. In-person marketing required more time and had restrictions. Sales representatives give many unique propositions that assess the usefulness of a product, which may easily induce the expansion of personal selling via the use of marketing techniques. The virtual marketing approach has a higher reaction, indicating speedier selling and stabilized consumers despite the need for haste using data-driven methodologies and in a cost-effective manner. From the standpoint of both sales representatives and patients, the investment field has profoundly transformed to the digitalization platform. Hidden possibilities have arisen as a result of the growing audience attracted by attractive digital platforms. As a result, investments in healthcare professionals are greater than in direct-to-consumer advertising. Investments dominate digital non-personal marketing, as well as telehealth adaptation for consultants and patients (Robert Kadar 2020).

Convert Money to Digital

According to traditional techniques, the sales force has become relatively docile as a result of the pandemic condition. Sales reps are increasingly engaged on digital channels where non-personal promotion is widely promoted. NPP essentially enhances the assignment of the most knowledgeable health care workers for the purpose of targeting the customer by gratifying the patients, which is relatively cost efficient. More contextual promotional strategies include email and social media, provide advertising videos or accommodate commercials involving surfing or particular search engine marketing, different applications on a digital online platform. Pay per click advertising and pay per click campaigns are modern tactics for a

company's investment and digitization(Emily 2020).

Assignment of Digital Media

In order to successfully advertise to patients, doctors, sales teams, and healthcare professionals, pharmaceutical companies are often affiliated with e-marketing or electronic customer relationship management systems. Medical portals, as well as technology-enhanced apps and marketing websites, are used to recognise the company's product data and to build a relationship between the physician and sales management. e-CMEs may be used to conduct and broadcast a variety of online conferences, meetings, and educational training. It is also cost effective. SEO, or search engine optimization, is a market research and development search engine. As physical distance persists as a result of the pandemic, social media marketing aids the consumer's apparent views and feedback, which helps to maintain customer relationship management activities via innovative online webinars, sales force automation, online sampling, and so on. Promotional advertising on a digital platform increases sales opportunities(Robert Kadar 2020).

E-Sampling

Sampling is the most effective marketing tool that physicians can use to begin treatment. The tolerance level of the drug may be tested in their patients instantly and based on the product's condition. It also allows professionals to do so as a standard practice for the specific brand. It helps them recognise the brand name because it keeps resonating in their minds. It is possible to create a customized requirement for the actual inventory of samples. Physicians with PCs might absolutely apply for the examining demand structure by using this mobile phone or web method. By transmitting the top projects, the whole issue of providing examples and product accessibility has transformed. After one instance of physicians utilizing this approach, medical professionals may readily assess the applicability of samples based on the data obtained, with doctors and their areas of interest in a certain drug.

E-Detailing

E-detailing is a multimedia tool that allows selected specialists to provide prescriptions to patients through internet platforms. The pharmaceutical industry and the conjugate industry have devoted more attention in this area in order to provide the greatest treatment and clinical data as quickly and easily as possible. It isn't associated with points of interest and on web journals, even though electronic clinical data is always available. Pharma businesses have spent more time working on this area in order to give the greatest quality and medical information in a timely and easy manner, enhancing sales efficiency and assisting physicians. When an agent deductively and logically offers subtleties, specifying often refers to the correspondence among experts and salespeople. The phrase e-itemizing has a broad meaning that includes email, discussions, e-testing of online courses, and item data through Pa or tabs.

Telemedicine Is Changing Everything

During the COVID-19 epidemic, telemedicine organizations unanimously acknowledged that this strategy had a significant influence on growing their divisions to promote telemedicine technology. For long-distance meetings, phone arrangements, intuitive crack facilities, and video conferencing are essential. These advancements will continue to shape how we provide medical care in the future. As a result of COVID-19, tele-medicine, or the arrangement of medical care administrations utilizing data or promoting innovation, has recently been created. Telemedicine is essential to alter medical treatment in a post-COVID-19 society. Patients may get medical advice through voice and video. This initiative would also make it possible for persons living in the most remote places to get health-related consultations. Telemedicine played an important role in exchanging significant data for the diagnosis and management of infections and events((Robert Kadar 2020 and Emily 2020).

Medical Consultant

Novel workplace behavior caters to employees who engage in innovative organizational approaches and techniques. Innovative work behavior examines four elements that seem to be fundamentally significant for success

prospects during critical moments, such as the recent COVID-19 epidemic. These are problem recognition, idea creation, promotion, and realization. All of these characteristics assist employees in doing normal duties in a responsive manner. An employee's inventive work activity energizes them to concentrate on the difficulties that must be handled by developing ideas. In the present COVID-19 situation, it seems to be vitally important for MR to recognise and specify strategies in which they may effectively manage their energy, dedication, and absorption to work (engagement) in order to reach their sales and marketing objectives (Robert Kadar 2020).

5 Factors Influencing the Prescribing Doctor's Behavior

Accordingly, pharmaceutical corporations are using all of their marketing efforts to persuade physicians since they have the option of prescribing any prescription or brand they want. Brand image, brand loyalty, clinical efficacy, quality of the product, prices, and place of origin all influence physicians' prescription decisions. Pharmaceutical corporations may influence physicians' prescription behavior (PB) via a free sample, range of incentives, and gifts, including support for local and international conferences, according to (El-Dahiyat et al. 2014) and (Sillup et al. 2013). Small presents like pencils, dinners, and travel expenses may have a big impact on prescriptions. According to (Kasliwal 2013) study, physicians of all genders, specialties, and ages are influenced by the sales representative's rapport, personality qualities, and product

expertise. There is a lot of talk about the impact of the country of origin (COO) on prescribing behavior (PB) throughout the world. This effect has a major influence on brand equity, customer appraisal, and the total purchase intention of a product or service, according to research. The criteria identified via the assessment of the literature and the use of promotional materials are intended to influence physicians' prescribing practices (Murshid and Mohaidin 2017). Prescriptions for certain brands are influenced by a variety of different marketing elements such as product placement and pricing, as well as frequency of medical representative visits. The effectiveness of a medicine is much more important to physicians than its cost. Medical reps are the major source of product information for physicians in an increasingly competitive industry, along with other sources of information such as journals and CME programmes, according to the literature. Understanding the factors that influence doctors' prescription decisions, such as brand equity (BE), global innovator brands and local brands, quality of products, price, insurance, brand loyalty, and Country of origin, is critical to developing effective marketing strategies and reducing overall pharmaceutical costs. In addition, the evaluation of the literature discussed the factors of pharmaceutical marketing, brand equity, and their impact on Indian physicians' prescribing behaviour. Figure 2 depicts the stimulus response model used by previous researchers to understand a marketing and other stimuli on the doctors prescribing decision.

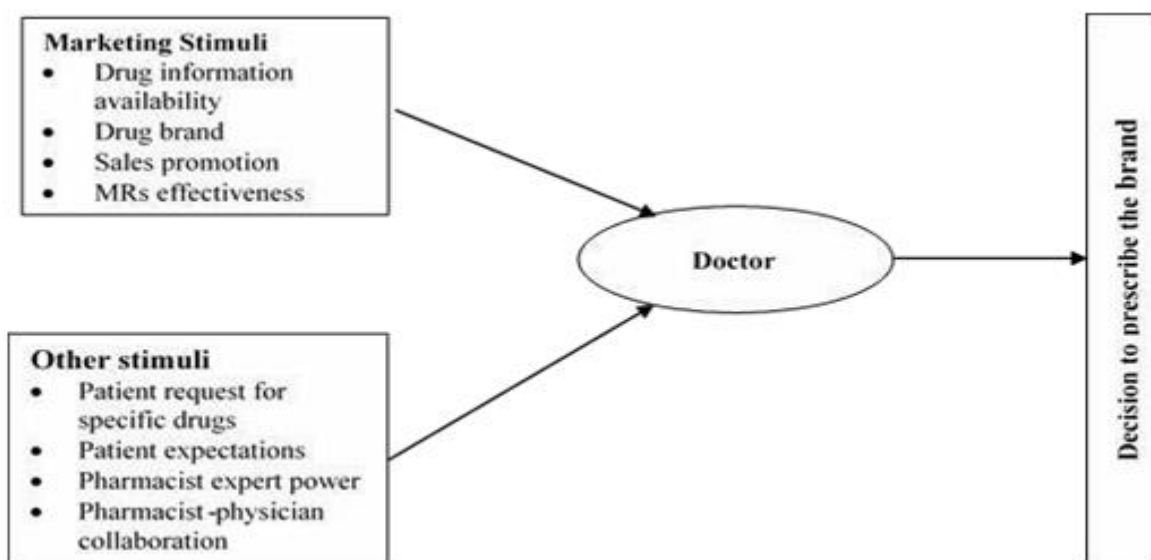


Figure 2 Stimulus-response model on doctor behavior (Source: Adapted from (Murshid and Mohaidin 2017) Models and theories of prescribing decisions)

6 Prescription drugs (Rx) and Over-the-counter (OTC)

Under the DCA Act, 1940 and, DCR 1945, the import, manufacturing, sale, distribution etc. of drugs and cosmetics are controlled in India. The pharmaceutical corporations are responsible for the development, production, and marketing of safe pharmaceuticals. Prescription pharmaceuticals (patented medicine) account for the majority of pharmaceutical income, however generics and over-the-counter drugs have a considerable impact owing to their reduced cost for the greater population.

6.1 Prescription drugs (Rx)

In India, Prescription medications (Rx) are those pharmaceuticals that legally require a doctor's prescription to be given and are within the category of Schedules H and X of the Drug

and Cosmetics Rules, 1945. Drug and Cosmetics laws control the import, production and sale or distribution of medications and cosmetics via Licenses and permits etc. Prescription pharmaceuticals cover two types such as innovator drugs and generic drugs:

- Information about the intended effect of the medication and its actions in the body may be found in the prescribing information.
- There are also warnings about possible adverse effects, dosage instructions, and precautions to be taken while taking the medication, as well as information on possible drug allergies.
- Adverse drug reactions, especially those linked to adverse drug interactions, may occur when prescription medications are misused or abused.

Figure 3 depicts the worldwide forecasted prescription drug sales excluding generics and orphan and prescription sales for generics and orphan for 2010 through 2024.

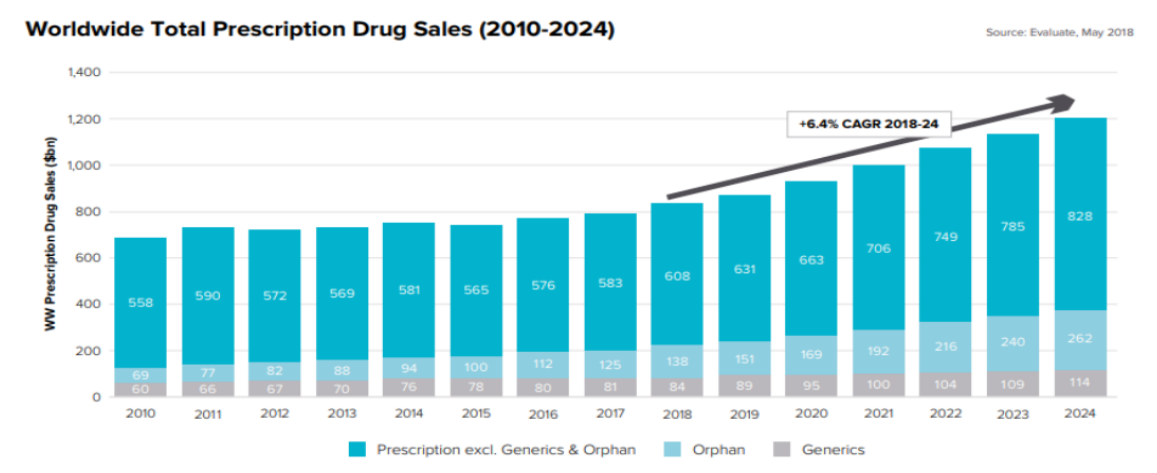


Figure 3 Worldwide total prescription drug sales(Source: Evaluate Pharma® World Preview 2018)

Prescription medications continue to provide the most income across all therapeutic categories, with oncology leading the pack, followed by antihypertensives, antidiabetics, and pain relievers. Prescription medicine sales are expected to grow at an annual CAGR of +6.4 percent from 2018 to 2024, compared to a CAGR of just +1.2 percent from 2011 to 2017 . Figure 4 depicts the worldwide forecasted prescription drug and OTC sales by technology for 2010 through 2024.

Worldwide Prescription Drug & OTC Sales by Technology (2010-2024)
Source: Evaluate, May 2018

Technology	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Biotechnology	17%	18%	19%	21%	21%	22%	24%	25%	27%	27%	28%	29%	30%	30%	31%
Conventional/Unclassified	83%	82%	81%	79%	79%	78%	76%	75%	73%	73%	72%	71%	70%	70%	69%
Total Prescription & OTC Sales	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Figure 4 Worldwide prescription drug and OTC sales (Source: Evaluate Pharma® World Preview 2018)

According to prescription sales, the biotechnology prescription medication industry is predicted to grow to 31% by 2024, while the traditional prescription drug market is expected to shrink to 9% over the same time period.

Direct-to-consumer (DTC)

Direct-to-consumer (DTC) advertising expenditures have risen since 1997, when the US-FDA lifted limitations on advertising to patients. However, governments and insurers contended that direct-to-consumer advertising raises total health-care expenditures. Consumers interpret DTC advertising extremely differently, lending a healthy skepticism to the promises stated in prescription medicine advertisements. The customer believes that the information is

government-approved. These advertisements give a clear message that prescription medications are no different than any other consumer goods. It is anticipated that DTC advertising for prescription medications will grow in the near future. This part is influenced by television and print advertisements. However, there are no explicit guidelines for the promotion of over-the-counter (OTC) medications. OTC goods may be lawfully promoted on social media, drawing both urban and rural customers' attention.

Prescription audit

Prescription auditing is a useful strategy for preventing drug abuse, improving medication consumption patterns, and limiting illogical prescriptions. This aids in the detection of drug-drug interactions and adverse medication responses. Irrational prescription and incorrect distribution have an influence on health and the economy; hence, medication prescribing

practices in a hospital/clinic context need ongoing monitoring in order to maximize therapeutic benefits and minimize harmful consequences. The factors commonly evaluated throughout the prescription auditing process are the patient demographics, prescribing standards, clinical diagnosis, department, physician's name and signature. This aids in analyzing the performance of health-care practitioners in terms of drug-adequate usage.

6.2 Over-the-counter (OTC) Drugs

The term "OTC" refers to all pharmaceuticals that are not classified as "prescription-only drugs," and it has no legal ramifications in India. These medications are legally permitted to be sold by pharmacists without a doctor's prescription (Registered Medical Practitioners). Drugs designated in Schedule G of the Drugs and Cosmetics Act (mainly antihistamines) do not need a prescription to buy, but there is a statutory requirement of the following wording on the label: "Caution: It is hazardous to consume this preparation unless under medical supervision." Non-drug-licensed businesses .

The Indian OTC drugs market category is growing steadily, with sales of US \$ 2354 million in 2012 and sales anticipated to reach US \$ 3800 million by 2019 (Nicholas OTC insight Asia Pacific 2016). The absence of regulation is worrisome because it raises the possibility of OTC medications being used incorrectly. OTC medications are often used to treat conditions that do not need the care of a qualified medical practitioner, and a lower potency of a drug is frequently permitted for OTC usage. Higher strengths of OTC need a doctor's prescription. Ibuprofen has been extensively used as an OTC pain reliever since the mid-1980s, but it is now available by prescription in levels up to four times the OTC dose for severe pain that is not properly managed by the OTC strength. According to the Consumer Healthcare Products Association, around 81 percent of US individuals utilize OTC medications as a first-line therapy for mild diseases (CHPA). The typical customer makes 26 journeys each year to acquire OTC medications, compared to just three visits per year to their doctor.

Generics such as paracetamol, cetirizine, and ibuprofen are available over the counter.

Crocin, Corex, Benadryl, D'cold, Anacin, and Aspirin are among the OTC products available in India. There is another FMCG product category now transferred from the pharmaceutical product category in the OTC and notable brands (Srivastava 2007). In the First Schedule, the word "Ayurvedic drug" refers to any medications intended for internal or external use in the diagnosis, treatment or mitigation of human or animal illness or disturbance and made entirely in accordance with the formulas contained in the authorized texts of the Ayurvedic, Siddha and Unani Tibb schools of medicine. It is the FDA's job to regulate dietary supplements including herbal preparations and amino acids as well as vitamin and mineral supplements. Because health claims are not authorized, customers must make informed decisions when purchasing these products. The doctor is crucial in the realm of ethical drugs; but, with the rising OTC market, new marketing methods are patient-centric. A number of significant consumer behavior and public policy problems have arisen as a result of the fast transition of pharmaceuticals from prescription (Rx) to over-the-counter (OTC) .

Each prescription medicine has a patent expiration date, after which generic drug manufacturers immediately target this market, causing the profitability of the specific brand to plummet. When a pharmaceutical company's patent on a certain medicine expires, the drug may be converted from prescription (Rx) to OTC (over-the-counter) status, allowing them to extend their market. Many medications have recently been converted from prescription to over-the-counter status.

7. Regulation in India for Prescription and OTC drugs

The pharmaceutical sector in India is governed by the Drugs and Cosmetics Act, 1940 (DCA) and its subsidiary law, the Drugs and Cosmetics Rules, 1945. Other legislation affecting the pharmaceutical industry in India include the Drug (Prices Control) Order, 1995, the Drugs (Magic Remedies) Objectionable Advertisement Act, 1954, and the Pharmacy Act, 1948. These laws apply to all types of medications made and/or imported in India (e.g., allopathic, ayurveda, siddha, unani and homeopathy). These laws are governed by the federal government's ministry of health and

family welfare in New Delhi, which is in charge of general oversight, and are enforced by state governments via the Food and Drug Administration (FDA).

When it comes to the approval and authorisation for new drugs, molecules, standards, vaccines or sera as well as the introduction of new uses or claims as well as the development of novel routes of administration and clinical trials as well as the introduction of novel formulations, the DCGI office in India is in charge. Medical device regulation in India is handled by the DCGI as well, regardless of where the devices are created or imported from. However, each state's Food and Drug Administration (FDA) is responsible for providing manufacturing and selling licenses for drugs, as well as overseeing the execution of the DCA and DCR. In India, there is no clear guideline for the approval of OTC medications. In addition, unlike other industrialized nations such as the United States, the United Kingdom, the Netherlands, and Canada, there are no legal and regulatory systems in place for the marketing, sales, distribution, and conversion of a prescription medicine to OTC in India.

Conclusion

Pharmaceutical marketing and promotion strategies have been criticized for illogical prescribing patterns and their repercussions, even though physicians have the only and ultimate right to decide the sales of prescription pharmaceuticals. A review of a significant number of prescriptions revealed that 53.4% of them recommended nutritional supplements, 31.2% recommended antibiotics, and 26.2% recommended analgesics. Over 60% of patients used ibuprofen or a combination of ibuprofen and other anti-inflammatory drugs, whereas aspirin, a cheaper alternative, was only taken by a small percentage of patients. Drug use was the same for all types of rheumatic illnesses. Seronegative rheumatoid arthritis responds better to indomethacin or phenylbutazone, but their use was minimal. Potent medications such as antibiotics and steroids have been misused many times before. There are a number of negative outcomes, including increased antibiotic resistance, treatment failures due to the incorrect administration of medications, and the financial

burden on the patient. Developing mutually acceptable limitations for medication marketing is a must for both the company and the practitioner. In this dispute, the codes that were accessible were beneficial, but they are still regarded as the beginning rather than the end. In light of the Consumer Protection Act's inclusion of the medical profession, it is possible that the doctor-industry connection may be examined. A government rule in France penalizes doctors who take any type of remuneration from pharmaceutical corporations with an FF 500,000 fine, two years in prison, and a ten-year ban on practicing medicine. The industry and doctors must work together to establish an ethical working relationship, therefore let's hope for better judgment. The Medical Council of India (MCI) has also issued a new code of conduct for physicians who accept gifts, sponsorships, or travel expenses from pharmaceutical companies to attend seminars, conferences, or other events in India or abroad.

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