
**ROLE OF PHARMACEUTICAL SALES REPRESENTATIVES IN
DOCTORS' PRESCRIPTION CHOICES**

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ABSTRACT

The pharmaceutical sector plays a vital role in advancing healthcare outcomes, significantly improving overall quality of life. Its expansion has been driven by growing demands associated with the increasing incidence of chronic and age-related illnesses, along with evolving medical practices. This growth has required the adoption of innovative and often sophisticated marketing approaches to influence prescribing patterns among physicians. The pharmaceutical industry operates under strict regulations, particularly concerning promotional activities, where direct advertising to consumers is restricted. Consequently, pharmaceutical companies focus their marketing efforts on physicians, who serve as key decision-makers in determining patient treatment.

These promotional strategies aim to build professional relationships, communicate product-related information, and ultimately encourage the prescription of specific medications. Such activities target physicians from the early stages of their medical education and continue throughout their professional careers. These approaches are designed not only to strengthen relationships but also to shape prescribing behaviour, with the primary objective of enhancing sales performance.

However, the impact of these marketing practices has raised concerns regarding the appropriateness of prescribing, the standard of medications used, and the risk of conflicts of interest. Maintaining a balance between commercial promotion and the ethical responsibility of prescribing cost-effective and rational medicines remains a significant challenge. In countries such as Nepal, additional concerns exist regarding the quality of domestically manufactured pharmaceuticals and the inclination towards multinational brands.

This study seeks to examine the diverse marketing strategies adopted by pharmaceutical companies between 2019 and 2023, with particular emphasis on their influence on physicians' prescribing decisions. Major promotional techniques include the distribution of free drug samples, sponsorship of continuing medical education programs, and direct engagement through medical representatives (MRs). The findings suggest that promotional activities, especially those involving personal interaction with MRs, have a substantial impact on prescribing behaviour. Nevertheless, this influence also raises ethical concerns, particularly regarding the potential for irrational prescribing and the effect of incentives and gifts on clinical decision-making.

INTRODUCTION

The pharmaceutical sector operates under stringent regulatory frameworks. Unlike many other industries, pharmaceutical companies are restricted from promoting their products through print or electronic media [1]. As a result, their marketing efforts are primarily directed toward physicians, who act as key decision-makers in determining the medications patients receive [2]. Additionally, physicians significantly influence patients' purchasing choices. Interactions between pharmaceutical companies and physicians often begin during the early stages of medical education and continue throughout their professional careers [35]. A prescription ultimately represents a physician's final selection among multiple therapeutic alternatives [1]. Consequently, physicians become the focal point of pharmaceutical marketing activities. Their prescribing behaviour may be influenced by the intensity and nature of promotional efforts undertaken by pharmaceutical companies [9].

In pharmaceutical marketing, strategies are designed with physicians as the primary customers rather than patients, who are the end consumers [2]. Therefore, companies invest substantial time and resources in developing promotional approaches aimed at encouraging physicians to prescribe their products [18]. A significant portion of marketing budgets is allocated to influencing prescribing patterns in order to enhance product sales. Notably, pharmaceutical companies often spend more than twice as much on marketing activities as they do on research and development of new drugs [19]. As a result, considerable emphasis is placed on identifying and utilizing the most effective promotional techniques to maximize revenue and market share [13]. However, the relationship between physicians and pharmaceutical companies can create potential conflicts of interest, representing a tension between professional obligations and financial incentives [36].

Furthermore, increasing market competition has compelled pharmaceutical companies to incur higher promotional costs, particularly due to the growing number of medical representatives required for physician visits, with nearly 30% of marketing materials reportedly remaining underutilized [10].

Misleading or biased information disseminated through pharmaceutical promotions is a major contributor to the inappropriate use of medicines [25]. Studies have indicated that physicians' knowledge about drugs is often more influenced by promotional materials than by independent medical literature [35]. Such promotional practices can lead to issues such as irrational prescribing, diminished trust between patients and healthcare providers, and increased healthcare costs [30]. For instance, a study conducted in seven hospitals in Lebanon found that approximately 40% of prescriptions contained errors, with 9% involving unnecessary medications [22].

These concerns may arise due to aggressive marketing strategies aimed at increasing product acceptance among physicians. Additionally, the use of substandard or low-quality drugs can contribute to drug resistance, pose serious risks to patient safety, and impose economic and social burdens on society [32]. According to [20], information presented in pharmaceutical advertisements often fails to meet recommended standards and may encourage irrational prescribing practices. Similarly, promotional strategies have been associated with reduced patient trust and higher treatment costs [5]. The ongoing debate regarding whether marketing or innovation primarily drives the pharmaceutical industry remains significant [30].

In the context of Nepal, additional challenges exist. Despite certification under WHO Good Manufacturing Practices (GMP), concerns persist regarding the quality of locally manufactured medicines [1]. Marketing activities significantly influence physicians' prescribing decisions, which in turn affect healthcare outcomes. Brand-based prescribing is prevalent, where medications are selected based on brand preference rather than objective quality considerations [37]. Furthermore, quality concerns have led many physicians to favor multinational brands over domestic alternatives [12]. The increasing presence of pharmaceutical marketing may also undermine trust in healthcare professionals and institutions [39]. However, some studies suggest that awareness of financial relationships between physicians and pharmaceutical companies does not necessarily diminish patient trust [36].

It is important to note that not all promotional activities result in inappropriate medication use. There exists a balance between manufacturers' commercial objectives and the need to

promote rational and cost-effective treatment options [25]. Research indicates that physicians' prescribing decisions are often rational and based on clinical judgment, with marketing efforts serving to highlight the benefits and comparative advantages of specific medications [34]. Physicians consider multiple factors when selecting a drug, including its quality, efficacy, safety profile, and supporting clinical evidence [5,18]. Understanding these decision-making processes is essential for improving healthcare outcomes and reducing unnecessary medical expenditures [11].

Therefore, the objective of this study is to examine the various marketing strategies employed by pharmaceutical companies between 2019 and 2023 and assess their influence on physicians' prescribing behaviour. The study aims to evaluate the impact of these strategies on prescription patterns, healthcare outcomes, and the trust relationship between physicians, patients, and pharmaceutical companies. Special emphasis will be placed on the role of medical representatives as a primary promotional channel, along with the effectiveness of different marketing tools, ethical considerations, and the influence of drug quality, promotional content, and competitive pressures. Additionally, the study seeks to analyze how these factors contribute to the rational or irrational use of medicines across diverse healthcare settings, ultimately providing insights for the development of ethical and effective pharmaceutical marketing practices.

METHOD

This study employed a **descriptive and interpretive research design**, drawing upon recent scholarly literature obtained from electronic databases such as Google Scholar, PubMed, Emerald Insight, Mendeley, and Nepal Journals Online. The literature reviewed covered the time frame from 2019 to 2023. Relevant articles were identified using keywords including *pharmaceutical marketing*, *medical representatives*, *physicians' decision-making*, *prescribing behaviour*, and *ethical concerns*.

SELECTION CRITERIA

Initially, titles, abstracts, and research aims of the identified studies were screened. Articles were selected based on the following inclusion criteria: publication between 2019 and 2023, availability in the English language, full-text accessibility, and a clear focus on factors affecting prescribing behaviour. Furthermore, only studies that explicitly reported these influencing factors within their findings were included in the review.

LITERATURE REVIEW

Pharmaceutical Marketing Efforts and Physicians' Prescribing Decisions

With advancements in technology and the widespread use of digital platforms, the pharmaceutical industry is transitioning from conventional promotional approaches—such as face-to-face meetings and conferences—to modern techniques including e-detailing, virtual seminars, and other digital communication tools [10]. Marketing strategies are increasingly becoming personalized through the application of artificial intelligence (AI) and machine learning, enabling the delivery of tailored content to healthcare professionals and patients. This individualized approach enhances engagement, improves communication relevance, and strengthens the overall effectiveness of promotional efforts [42]. Despite these advancements, digital marketing is not expected to replace medical representatives (MRs); rather, it is anticipated to complement their roles, increasing efficiency and fostering more integrated outcomes [10].

Pharmaceutical products play a crucial role in enhancing quality of life, and their demand continues to rise due to the growing prevalence of chronic and age-related diseases, along with evolving healthcare practices. This increasing demand has contributed to consistent growth in the global pharmaceutical market [16]. The World Health Organization (WHO) established guidelines for ethical pharmaceutical promotion in its 1988 framework titled *Ethical Criteria for Medicinal Drug Promotion*. According to WHO, pharmaceutical marketing encompasses any activity undertaken by manufacturers or distributors to promote the prescription, distribution, purchase, or use of medicinal products, including advertising, sponsorship, and other promotional activities targeting healthcare professionals or the general public.

Interactions between pharmaceutical companies and prescribers have expanded significantly in both scope and diversity; however, existing regulatory frameworks often fail to adequately address these evolving promotional practices [29]. Physicians' prescribing decisions are complex and influenced by multiple factors. Drug-related attributes such as efficacy and safety are considered highly important when physicians decide to switch from one medication to another [3]. Nevertheless, numerous studies have consistently identified pharmaceutical marketing activities as a major influencing factor on prescribing behaviour [19]; [6]; [9]; [2]; [38]. Research findings indicate that promotional efforts by pharmaceutical companies have a strong and measurable impact on physicians' prescribing patterns [33].

For example, studies have reported a noticeable increase in prescription rates following marketing campaigns. Additionally, approximately 62% of physicians acknowledge being influenced by pharmaceutical promotional activities [31]. Common marketing strategies include the distribution of free drug samples, provision of both high-value and low-value gifts, sponsorship of travel, funding for continuing medical education (CME) programs, and medical detailing by representatives [2]. Other promotional tools include brochures, visual aids, and multimedia resources designed to enhance product awareness [20].

Pharmaceutical companies utilize a wide range of marketing instruments, such as product samples, informational materials, and branded items. These efforts often involve direct engagement through medical representatives, journal advertisements, email communication, social media platforms, sponsored events, and training sessions. Financial and non-financial incentives may include meals, travel sponsorships, conference fees, honoraria, research funding, and educational support [29]. While these strategies facilitate information exchange, concerns have been raised regarding their potential to unduly influence clinical decision-making.

Medical representatives (MRs) play a pivotal role in directly engaging with physicians and promoting pharmaceutical products [31]. Empirical studies have demonstrated that marketing initiatives, including sales promotions and access to drug-related information, are strongly associated with prescribing decisions, whereas intrinsic drug characteristics may sometimes have less influence [2]. Additionally, incentives such as conference sponsorships, personal travel, and gifts are frequently used to encourage prescription generation [39].

Several studies conducted across different regions further support these findings. Research in Lebanon revealed that visits by medical representatives, free samples, and participation in CME programs were among the most influential promotional strategies, significantly affecting physicians' prescribing behaviour [22]. Similarly, studies in Ethiopia identified factors such as frequency of MR visits, company-sponsored events, promotional materials, factory visits, and country of origin as key determinants of prescribing decisions [18]. Other findings highlight that frequent interactions with MRs, strong professional relationships, perceived drug quality, effective product detailing, and company reputation are major contributors to prescribing behaviour [5].

Pharmaceutical companies also engage in broader strategies, including funding medical associations, supporting research initiatives, organizing conferences, and collaborating with key opinion leaders to promote specific products. However, such practices may sometimes

result in exaggerated claims regarding drug efficacy and safety, encourage off-label prescribing, lower diagnostic thresholds, or disseminate unverified information about disease prevalence [21].

Studies have also explored physicians' preferences regarding promotional activities. Findings indicate that approximately 78% of physicians favor patient-oriented initiatives aimed at improving patient awareness and understanding of diseases, while 22% prefer practice-oriented activities that enhance clinical skills and professional development [24]. Customer relationship management strategies—such as MR detailing, medical camps, and CME programs—have been identified as critical factors influencing prescribing behaviour.

Further research conducted in developing countries confirms that direct exposure to pharmaceutical company information significantly affects prescribing decisions. Interactions with MRs, access to promotional materials, and motivational incentives were found to strongly influence physicians' choices, particularly when switching between medications [3]. Similarly, studies in Jordan reported that factors such as professional experience and participation in drug committees were significantly associated with the impact of marketing activities on prescribing practices [8]. While many physicians acknowledge the educational value of pharmaceutical promotions, a considerable proportion perceive sponsored lectures as biased toward the sponsoring company's products. Among all promotional methods, visits by medical representatives consistently emerge as the most influential factor affecting prescribing decisions [6].

1. Medical Representatives: A Key Promotional Strategy

In pharmaceutical marketing, a medical representative (MR) is commonly regarded as a key promotional agent [26]. They function primarily as “information providers” [6], serving as a vital link between pharmaceutical companies and healthcare professionals [10]. Their responsibilities include delivering product-related information, ensuring the availability of medicines in the market, and encouraging physicians to prescribe specific drugs. In addition, MRs collect market intelligence, address customer needs, and support prescription generation.

Medical representatives are professionals employed by pharmaceutical companies to promote products to healthcare providers such as doctors, pharmacists, and nurses. Acting as intermediaries, they facilitate communication between companies and clinicians by sharing product knowledge, establishing professional relationships, and supporting sales objectives. Their role typically involves face-to-face interactions, presentations, and follow-up visits,

requiring strong communication abilities, comprehensive product knowledge, and effective relationship management skills. Within the sales hierarchy, MRs form the foundation, followed by area, regional, and zonal managers, with senior sales executives and vice presidents occupying higher positions.

Pharmaceutical companies recruit and train MRs extensively to enhance their promotional effectiveness. Training programs often equip them with scientific literature, drug samples, and promotional materials that support their interactions with physicians. These tools are used to provide detailed product information, influence prescribing patterns, and strengthen professional relationships. Unlike conventional sales personnel, MRs do not directly sell products to consumers but instead focus on influencing prescribing decisions through professional engagement [29]. Consequently, they play a central role in executing promotional strategies within the pharmaceutical industry [10].

Among various marketing approaches, the use of MRs remains one of the most dominant and effective strategies for influencing physicians' prescribing behaviour [38]. Personal visits by MRs are widely considered the most impactful promotional method, as they foster trust and long-term relationships between physicians and representatives [6]. Many physicians perceive regular interactions with MRs as a valuable source of information, making direct communication a highly efficient channel for knowledge exchange [27]. Pharmaceutical companies therefore emphasize continuous training and development of MRs to ensure they remain updated on products, therapeutic areas, and emerging research [6].

MRs utilize a variety of promotional techniques, including personal selling, distribution of free drug samples, sponsorship of national and international conferences, support for continuing medical education (CME) programs, and provision of gifts ranging from low to high value [1]. Frequent visits by MRs have been shown to create favorable attitudes among physicians toward both the representatives and the promoted products [17]. Studies indicate that MRs may conduct multiple daily visits, ranging from fewer than five to more than fifteen interactions per day, while physicians may engage with several representatives weekly [3].

Empirical research highlights the effectiveness of MR-driven promotional activities. For instance, a study conducted in Pakistan reported mixed perceptions among MRs, with over half believing that regular physician visits significantly enhance prescription generation, while others considered them less impactful [39]. Additionally, physicians in many developing regions tend to rely heavily on information provided by MRs and pharmaceutical-sponsored educational programs rather than independent sources such as medical journals [7].

Research also indicates that MRs often emphasize product price and brand identity during detailing, while commonly offering incentives such as drug samples and invitations to sponsored events [6].

Furthermore, MRs serve as an important source of information regarding newly introduced drugs and emerging therapeutic options. Physicians frequently depend on this information when making prescribing decisions, particularly for newly launched medications [15]. Developing a well-trained and knowledgeable field force is therefore considered crucial for effectively influencing physicians, as marketing communication should highlight the comparative advantages and clinical benefits of promoted drugs [34].

Despite their importance, there is growing concern regarding physician dissatisfaction with certain promotional practices. Experts suggest that adopting personalized communication strategies tailored to physicians' experience levels may improve engagement and strengthen professional relationships [27]. While MRs are expected to provide balanced and accurate information to support rational prescribing, they often emphasize drug benefits more than potential risks, which may contribute to inappropriate medication use [28].

One of the primary reasons physicians interact with MRs is to obtain free drug samples. These samples are closely linked to MR visits and are widely used as promotional tools to encourage trial and continued prescription of specific medications [13]. Samples often consist of high-profit drugs and are strategically distributed to influence prescribing habits [16]. Many physicians view samples positively, as they can be provided to patients who cannot afford medications, and often consider them more useful than written literature [10]. Frequent MR visits combined with sample distribution have been shown to positively influence prescribing behaviour [38].

However, the use of drug samples remains controversial. Some studies suggest that samples are not always distributed to economically disadvantaged patients and primarily serve as a marketing tool rather than a charitable initiative [4]. While samples may reduce uncertainty in prescribing decisions, there is limited evidence to support their role in improving diagnostic accuracy. Instead, they may create dependency and reinforce brand preference among physicians.

Gift-giving is another widely used promotional strategy. It often creates a sense of obligation among healthcare professionals, making them more receptive to promotional messages [17]. Studies indicate that a large proportion of MRs consider gifts to be an effective means of encouraging prescriptions [39]. Physicians' perceptions of such practices vary; while many

consider low-cost gifts to be ethically acceptable, repeated or high-value incentives are often viewed as inappropriate [22]. This suggests that the frequency and value of gifts play a significant role in shaping ethical perceptions.

Moreover, receiving information about new drugs alongside tangible incentives tends to generate more favorable attitudes among physicians toward both the representatives and the promoted products, ultimately influencing prescribing behaviour [15]. Even low-value promotional items have been found to significantly impact physicians' decisions to switch between medications [3].

CONCLUSION

Medical representatives (MRs) remain a central and highly influential component of pharmaceutical marketing strategies. Their role as intermediaries between pharmaceutical companies and healthcare professionals enables effective dissemination of drug-related information, relationship building, and promotion of specific products. Through regular face-to-face interactions, personalized communication, and the use of various promotional tools such as free samples, educational sponsorships, and incentives, MRs significantly shape physicians' prescribing behaviour.

The evidence indicates that frequent engagement with MRs, combined with tailored marketing approaches, positively influences prescription patterns and enhances product adoption. Physicians often rely on MRs as a primary source of information, particularly in developing healthcare settings where access to independent scientific resources may be limited. However, this dependence raises concerns regarding the objectivity and completeness of the information provided.

At the same time, the widespread use of incentives, gifts, and drug samples introduces important ethical considerations. While low-value items and samples may be perceived as acceptable or beneficial—especially for patient support—their repeated or strategic use can create a sense of obligation and potentially compromise rational prescribing practices. Moreover, the tendency of MRs to emphasize drug benefits over potential risks may contribute to inappropriate medication use.

Therefore, although medical representatives play a vital role in bridging information gaps and supporting healthcare delivery, their influence must be carefully regulated. Ensuring transparency, promoting ethical marketing practices, and encouraging evidence-based decision-making among physicians are essential to maintaining a balance between commercial objectives and patient welfare. Ultimately, optimizing the role of MRs requires

aligning promotional activities with ethical standards to support rational prescribing and improve overall healthcare outcomes.

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