

Factors Influencing Prescription Decisions of Doctors in India: An Empirical Study

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ABSTRACT:

In the pharmaceutical industry, doctors play a pivotal role as decision-makers when prescribing medicines for patients. The study aimed to investigate the factors influencing doctors' prescription decisions, including quality, price, relationship with the sales force, and uniqueness of the molecule. A survey was conducted among doctors in India, focusing on both existing and latest molecules. The results revealed that doctors prioritize the quality of medicines in their prescription decisions, irrespective of the price. For existing molecules, prescription choices are influenced by quality, price, sales force relationship, and molecule uniqueness. However, for the latest molecules, factors such as latest research, clinical trials, efficacy, safety, dosage convenience, and the need-benefit ratio become critical determinants. The study underscores the significance of producing high-quality medicines and investing in research and development to meet doctors' and patients' requirements. Pharmaceutical companies must prioritize quality to ensure favorable prescription decisions by doctors.

Keywords: Doctor's prescriptions, quality, price, branded, generic and branded generic formulations

I. INTRODUCTION

Over the past few decades, India witnessed significant developments in various sectors including the healthcare sector the urge for high-quality healthcare services has increased as a result of the development of contemporary healthcare facilities and improvements in medical technology general practitioners GPS and consultants are important players in the Indian healthcare system they are in charge of doing clinical diagnoses writing prescriptions and if required referring patients to experts, therefore, it's crucial to comprehend the aspects that affect patients prescription behaviours.

In the realm of pharmaceutical sales, doctors hold the authority as decision-makers when it comes to prescribing medications. Their primary concern is ensuring that the medicines they prescribe bring quick and complete relief to their patients. While doctors, including consultants, rely on empirical practice through trial and error, they place immense importance on the quality of medicines. Substandard quality paired with low prices is unacceptable to doctors, as they prioritize the wellbeing of their patients above all else.

This empirical study intends to look into the elements that affect GPs and Consultants in India's prescribing practices. The study will offer insights into the variables that affect decision-making, including patient type, medicine availability, pharmaceutical company influence, and medical education level. The study will also investigate how these medical professionals' prescription practices are impacted by variables like socioeconomic status, amount of education, and patient load.

This research paper aims to explore the factors that influence doctors' prescriptions in the pharmaceutical industry. The study surveyed doctors practising in India and found that the quality of medicines is the most significant factor affecting their prescription decisions. The study also revealed that doctors do not prescribe medicines solely based on low prices but prioritize quality. In addition, for existing molecules, the factors affecting prescription include quality, price, relationship with the sales force, and uniqueness of the molecule. For the latest molecules, factors such as the latest research, clinical trials, efficacy, safety, dosage convenience, and the need-benefit ratio play a crucial role in prescription decisions. The research also found that the relationship with the sales force takes a backseat when it comes to prescribing new molecules. The results of this study are important for understanding how consultants and general practitioners prescribe because they can assist healthcare policymakers in creating plans to raise the standard of healthcare in India. The study can also give pharmaceutical businesses ideas to improve their marketing plans so that they better suit the requirements and preferences of healthcare professionals. The ultimate objective of this research is to raise the standard of healthcare in India and enhance the overall well-being of its people.

II. LITERATURE REVIEW:

Researchers in the USA examined drugs to prevent blood clots and treat diabetes and found certain ones were prescribed more often by the doctor who got gifts from those companies --Doctor prescribing Linked to Industry Gifts, Kimberly Leonard, August 18, 2016

New evidence published in the journal *The BMJ*, shows that doctors who receive gifts from drug companies are more likely to prescribe or recommend their products, at least when it comes to brand name medicines used to prevent blood clots or treat diabetes.

The study found that when a drug company spends \$13 on a doctor in the USA, then they will later see 94 additional days of prescriptions for brand-name anticoagulants and additional 107 days of prescribing brand-name drugs to treat diabetes. These are referring to the actual days-supply of medication a patient picks up at the pharmacy.

For instance, explains Dr Will Fleischman, lead author of the study and clinical assistant professor in the department of emergency medicine at the University of Maryland School Of Medicine, a regular habit is for a pharmaceutical sales representative to take a doctor out to lunch. Later, that doctor may prescribe a medication to a patient for about a three-month period.

Top pharmaceutical companies in the USA have reached settlements with the Department of Justice totalling tens of billions of dollars over allegedly fraudulent marketing of drugs, times through payments to doctors. But most transactions fall within what is professionally and legally permitted, and supporters defend them as helping the best new treatments reach people who need them.

There is "great value" in exchanges of information between the healthcare sector and industry, says Kendra Martello, a deputy vice-president at PhRMA, which represents leading pharmaceutical companies in the USA... According to him, "Better educated physicians provide better care to patients." - Aidan Lewis, Washington

An investigation by BBC Panorama recently found that UK drug company GlaxoSmithKline is facing a criminal investigation in Poland for allegedly paying bribes.

A former sales representative for GSK in the Polish region of Lodz, Jarek Wisniewski, said: "There is a simple equation. We pay doctors, they give us prescriptions. We don't pay the doctor or see prescriptions for our drugs." Wisniewski said that although on paper the payments were for educational services, the doctor understood very clearly that they must produce a certain number of prescriptions in return.

Arthur Caplan, head of medical ethics at New York University, says that impetus will endure in the US as long as it relies on a market model, instead of the large government purchases used in Europe that drive down the cost of drugs. He thinks that faced with the prospect of payments being disclosed, "most doctors will stop" taking them, though more through pressure from peers than from patients.

The findings, published in *JAMA Internal Medicine*, are likely to intensify an ongoing debate over the extent to which ties between drug makers and doctors unduly influence medical practice and the nation's health care costs in the USA. The issue has resonated over the years as prices for prescription medicines continue to rise, and many drug companies have paid civil and criminal fines for illegal marketing kickbacks designed to boost prescribing-- ED Silverman Pharma lot, June 20,

2016

"This is a huge issue for seniors receiving Medicare, who pay a median co-pay of \$1 for generics and \$80 for non-preferred brand-name drugs [which cost patients more since insurers provide less coverage for these medicines]. Multiply this by 10 monthly medications, and it can become unaffordable for people to pick up the medicine they need," DeJong said.

The study examined more than 63,500 payments made to nearly 280,000 doctors, nearly 95 % of which were meals that cost between \$12 and \$18 each and took place at restaurants, meetings, and physician offices. They were able to find out the physicians taking those and promoting the mostprescribed brand-name drug in each class of medicine for treating high cholesterol, high blood pressure, depression, irregular heartbeats, and heart failure.

The researchers analysed data from the federal Open Payments program for the last five months of 2013, which was the first batch of data that was posted by the Obama administration. They also looked at prescribing data

for the individual doctor and Industry-sponsored meals, by the way, accounted for about 80 % of the total payments to physicians.

III. OVERVIEW

Recognizing the significance of quality, multinational companies as well as many Indian companies have invested in automation, state-of-the-art manufacturing facilities, and economies of scale to produce standardized medicines on a large scale. However, the competitive landscape in many therapeutic segments is intense, with numerous brands vying for attention. For instance, in the antipyretic segment, there are nearly 58 brands of Paracetamol in the market, with nearly identical features, merits, pricing, and packaging, placing doctors in a predicament when deciding which brand to choose. In addition, generic brands of Paracetamol are also available, adding to the array of choices for doctors. In the marketplace, three types of brands are commonly found in many therapeutic segments: Branded formulations, Generic formulations, and Branded Generic formulations. Generic formulations typically have the lowest price, followed by Branded-Generic formulations with higher prices, and Branded formulations with the highest prices. This wide array of options presents doctors with an extensive range of prescriptions to consider for their patients.

Based on a survey, it was observed that doctors were cooperative and forthcoming in providing answers. The main conclusion drawn from the survey is that doctors attach significant importance to the quality of medicines they prescribe, whether it is for existing products or new products. Doctors do not prescribe medicines solely based on low prices if they compromise on quality. For existing molecules, factors that influence doctors' prescriptions include quality, price, relationship with the sales force, and uniqueness of the molecule. When it comes to the latest molecules, factors that influence prescriptions are the latest research, clinical trials, uniqueness of the product in terms of efficacy, safety, dosage convenience, and the price at which the latest molecule is marketed. Doctors typically assess the Need-Benefit ratio when prescribing the latest molecules in comparison to existing molecules for their patients. The relationship with the sales force takes a secondary role when it comes to prescribing a new molecule.

IV. RESEARCH METHODOLOGY

It is an exploratory research method that was followed by seeking the responses of the doctor regarding their prescription habits. The total 500 doctors were subdivided into 4 parts; a total of 125 doctors were chosen from each zone: North, South, East and West. A structured questionnaire was prepared with the scale of most likely, likely, neutral, less likely, and most unlikely.

HYPOTHESIS

H0- There will be no significant prediction of the prescription of doctors in India by various factors like quality, price, competitors, sales force etc.

H1- There is a significant prediction of prescriptions of doctors in India by various factors quality, price, competitors, sales force etc.

The factors which influence the prescription habits of General Practitioners and consultants in India are identified and a questionnaire was designed to know how their prescriptions get influenced by the factors like price, quality, company reputation, sales force, patients, retailers, pharmacies, hospitals, Drug action, competitors and advertising. 500 doctors from all over the country were surveyed. Two types of doctors were chosen viz, consultants and General practitioners along with Dentists. They were chosen on the basis of their prescription potential and their flare for academics. The doctors chosen were well-read, quite familiar with the latest developments in the field of medicine and well acquainted with the latest molecules used in various therapies. The doctors chosen are also by and large targeted by the first 50 pharmaceutical companies which hold a cumulative market share of 76% in the formulation market.

A structured questionnaire was prepared to understand the impact and influence of various factors on doctors' prescriptions. The following factors were taken to prepare a questionnaire and for every factor that is mentioned below, several sub-questions were prepared.

- 1) Company reputation/image
- 2) Quality/pricing
- 3) Research
- 4) Drug action
- 5) Competitor Brands

- 6) Family
- 7) Role of Retailers and pharmacies
- 8) Sales promotion by a pharmaceutical company
- 9) Relationship with the sales force
- 10) Patients

Out of 500 Doctors, 200 consultants were chosen whose breakup is given below- Orthopaedic surgeons (15), Physicians/cardiologists (130), Gastrointestinal surgeons (15), Gynaecologists and obstetricians (15), Psychiatrists (5), Gastroenterologists (3), Diabetologists (2), Nephrologists (3), ENT surgeons (10), Oncologists (2). Consultants were chosen from cities in India like Delhi,

Chandigarh, Lucknow, Bhopal, Indore, Mumbai, Ahmedabad, Baroda, Bangalore, Mangalore,

Hyderabad, Vizag, Chennai, Kolkatta, Trivendrum, Trichur, Calicut, Chennai, Kolkatta, Bhubaneshwar, Patna, Gouhati, Pune, Nasik, Nagpur, Aurangabad. All the consultants chosen are postgraduates in medicine and surgery and few are even super specialists.

We also chose 250 General Practitioners who are MBBS, GFAM, BAMS, and LCEH and 50 doctors out of these 300 doctors are dentists (BDS and MDS). General Practitioners and Dentists were chosen from the following HQs-Jammu, Saharanpur, Meerut, Agra, Jhansi, Jabalpur, Sagar, Chindwara, Raipur, Durg, Bilaspur, Kolhapur, Satara, Amravati, Akola, Mysore, Hubli, Belgaum,

Dharwad, Nizamabad, Rajahmundry, Vijayawada, Warangal, Cochin, Cannanore, Palghat,,

Kottayam, Trichy, Tanjavore, Madurai, Vellore, Cuttack, Berhampore, Balasore, Gaya,

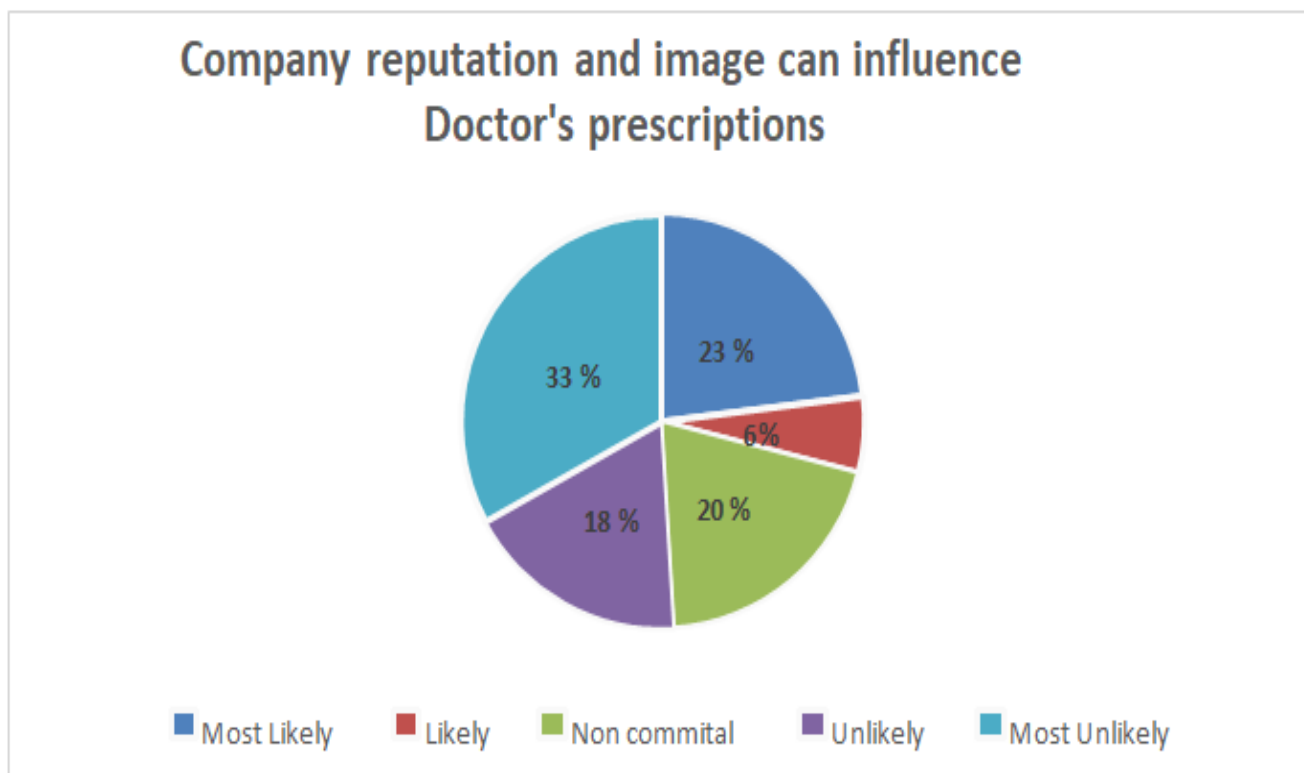
Muzapparpur, Lehriasarai, Howrah, Hooghly, Burdwan, Shillong, North Lakhimpur, Agartala, Jorhat, Kohima.

V. DATA ANALYSIS:

For every parameter mentioned above, various questions were asked to the doctors and their responses are summarized below.

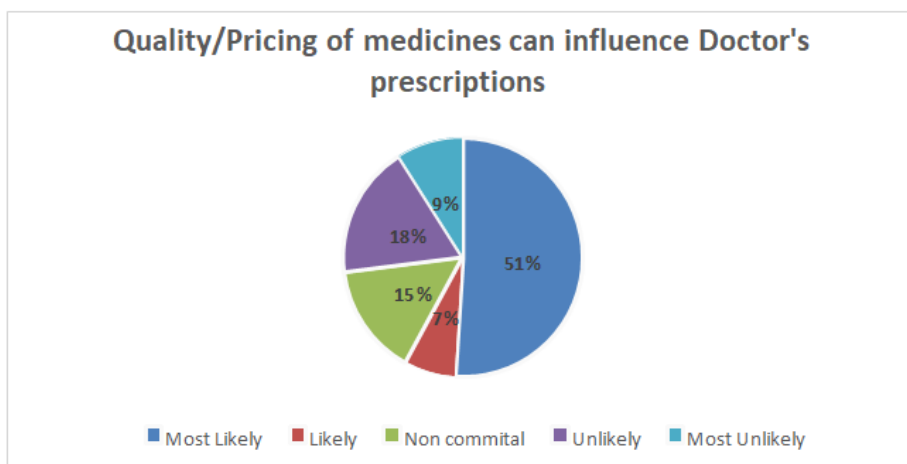
Company reputation and image---

Doctors were asked whether factors such as relationship with the company's proprietor, field managers, company Reps and brand loyalty are likely to influence their prescriptions.



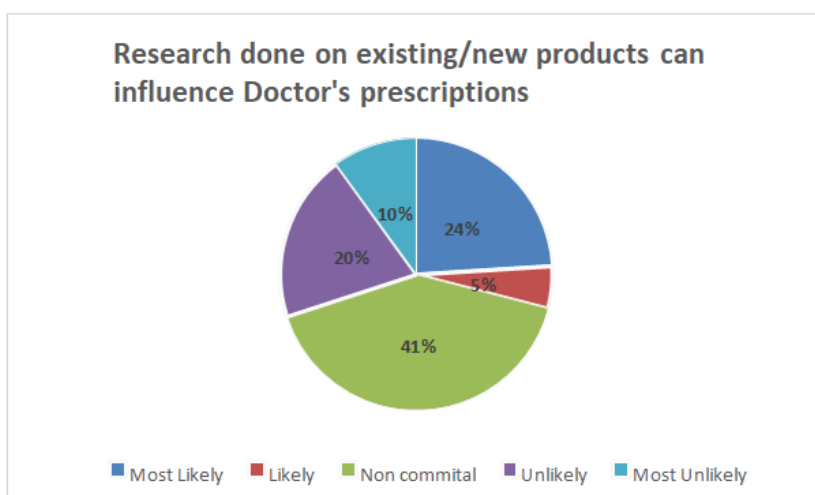
Quality/Pricing—

When doctors were asked whether quality coupled with economical price, or quality coupled with premium price influences their prescriptions.



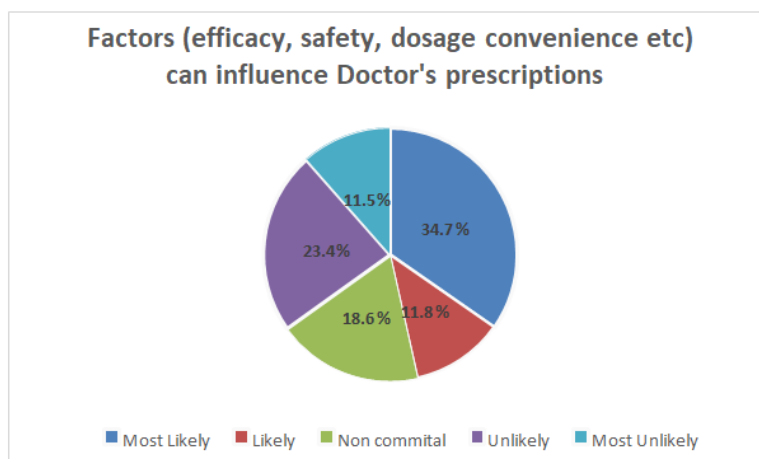
Research---

When the Doctors were asked whether the research is done on existing products/new Products, multicentric clinical trials, symposia, seminars, conferences and opinions of top-class foreign Doctors influence their prescriptions.



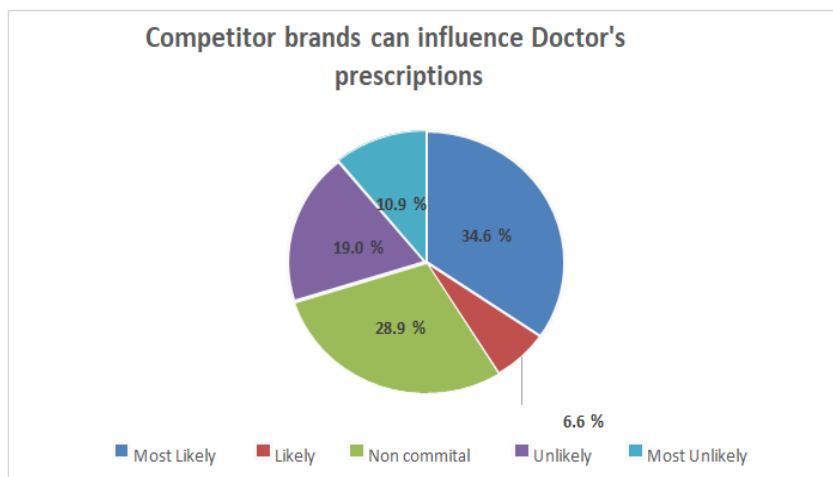
Drug action-

Doctors were asked whether safety, efficacy, dosage convenience and patient compliance influence their prescriptions, their response was below.



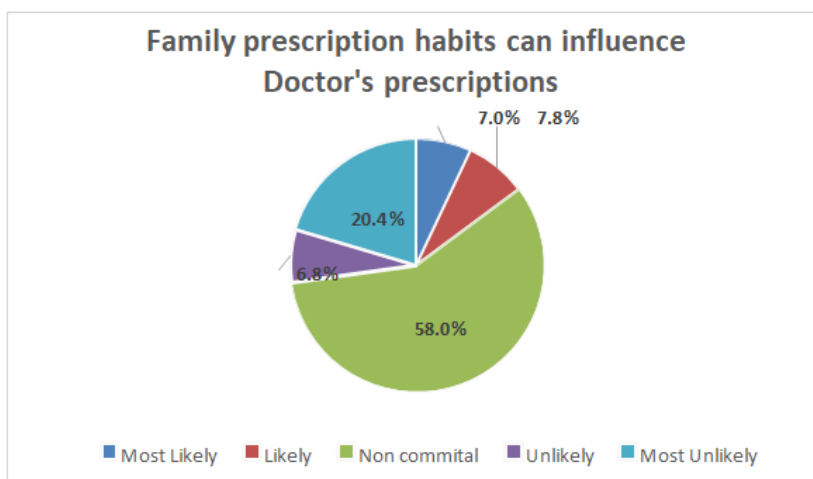
Competitor brands---

When doctors were asked questions about competitive advantages/disadvantages, fellow doctors prescribing competitor brands, availability of competitor brands and their responses are summarized below.



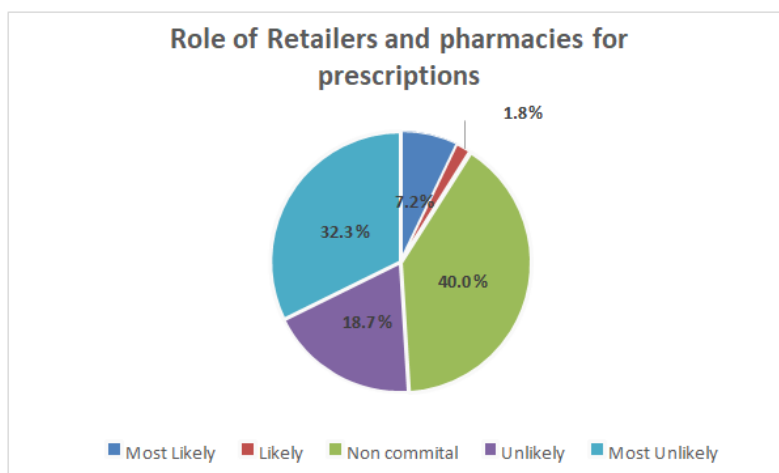
Family prescription habits--

Doctors were asked whether their relatives, parents, or grandparents prescribing a particular brand affects their prescriptions.



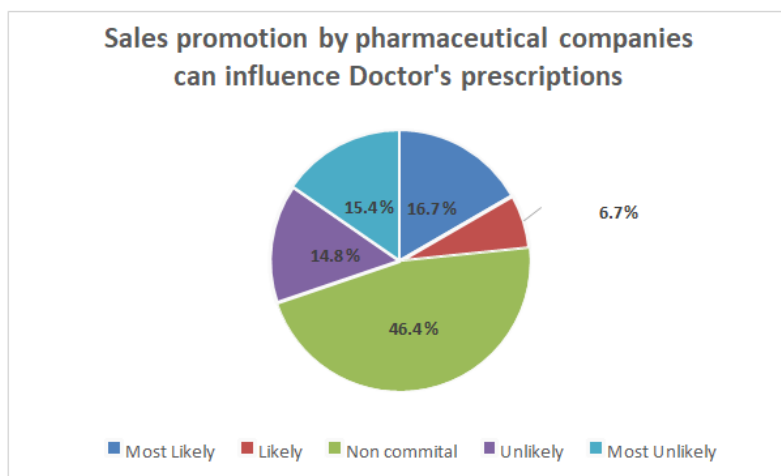
Role of Retailers and pharmacies---

When the Doctors were questioned whether their prescriptions get influenced by recommendations of retailers, pharmacies, institutional heads, and dealers in prescribing a brand,



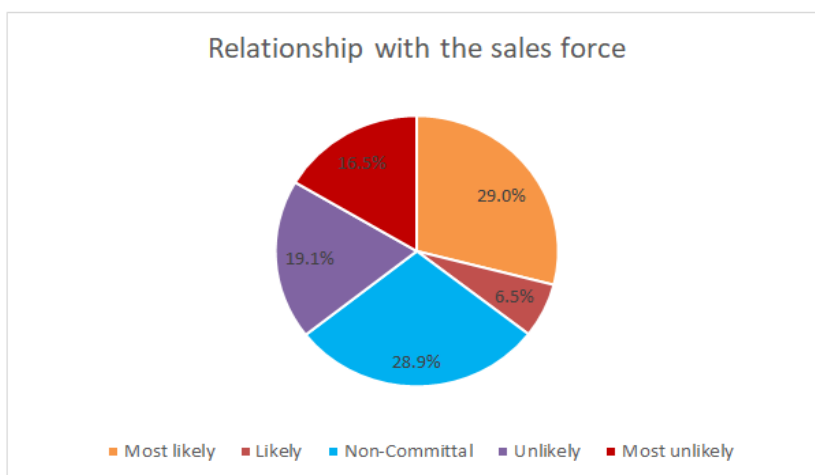
Sales promotion by pharmaceutical companies---

When the Doctors were asked whether the company-sponsored free medical camps, sampling, brand reminder gifts, prescription pads, stickers, literature, company-sponsored medical conferences, seminars, factory visits, gifts such as CIMS, MIMS, Health journals, and magazines influence their prescriptions.



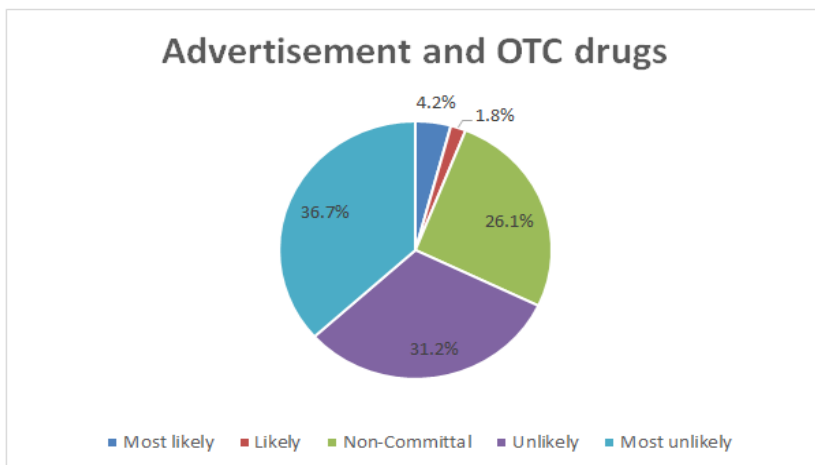
Relationship with the sales force---

When the Doctors were asked whether their prescriptions get influenced by the persuasive abilities of the sales force, the objection-handling capacity of the sales force,



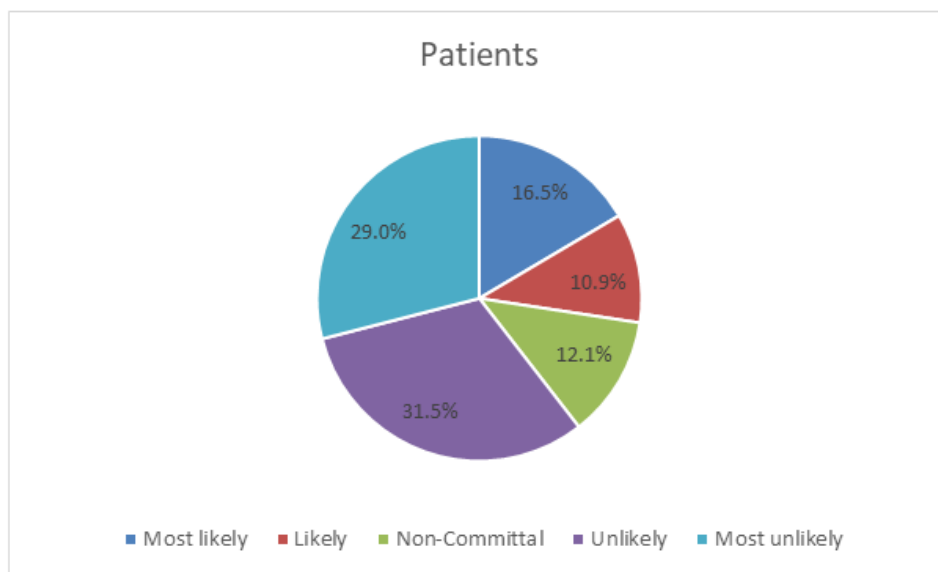
Advertisement and OTC drugs---

Doctors were asked whether they would prescribe the drugs which are advertised on TV, in print media, in Health Journals, and on social media.



Patients—

When the Doctors were asked whether their prescriptions can be influenced by their patients' requests to prescribe a cheaper brand, a good quality premium priced product, or a placebo.



VII. FINDINGS

In the field of medicine, physicians heavily rely on various factors when prescribing existing medicines. These factors include quality, price, and a combination of quality and affordability, as well as their relationship with the sales force of pharmaceutical companies. Additionally, physicians are known to respond positively to sales promotional activities conducted by pharmaceutical companies.

On the other hand, when it comes to new introductions or the latest molecules in the market, physicians rely heavily on the latest research, including the number and types of multi-centric clinical trials conducted, as well as articles published in renowned journals such as Lancet, BMJ, and JAMA. They also refer to authoritative medicinal books such as Goodman and Gilman and Martindale. Furthermore, physicians compare the efficacy, safety, and dosage convenience of the latest molecules with existing ones. If they notice a significant difference in the merit of the new molecule based on these factors, they may prescribe it, provided the cost is affordable for their patients.

It is worth noting that general practitioners tend to be primarily concerned about the price of medicines, while consultants or specialists may not prioritize price as much, as they believe their patients will honor their prescriptions regardless of cost considerations. For all the existing medicines, Doctors rely heavily on factors like quality, price, quality coupled with economical price, and relationship with the sales force Doctor also respond favorably to the sales promotional activities done by pharmaceutical companies.

The survey results showed that doctors prioritize the quality of medicines when it comes to prescription decisions for both existing and the latest molecules. They do not prescribe medicines that have low prices but lack quality. In addition, for existing molecules, the factors influencing prescription decisions are quality, price, relationship with the sales force, and uniqueness of the molecule. For the latest molecules, factors such as the latest research, clinical trials, efficacy, safety, dosage convenience, and the need-benefit ratio play a crucial role in prescription decisions. The study also found that the relationship with the sales force takes a backseat when it comes to prescribing new molecules.

VIII. CONCLUSIONS

The study concludes that doctors give utmost importance to the quality of medicines when it comes to prescription decisions. They do not compromise on the quality of medicines, even if it means prescribing medicines at a higher price. For existing molecules, the factors influencing prescription decisions are quality, price, relationship with the sales force, and uniqueness of the molecule. For the latest molecules, factors such as the latest research, clinical trials, efficacy, safety, dosage convenience, and the need-benefit ratio play a crucial role in prescription decisions. The study suggests that pharmaceutical companies should focus on producing high-quality medicines and invest in research and development to meet doctors' and patients' needs.

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