



A STUDY OF BUYING BEHAVIOURAL PATTERN OF GENERIC DRUGS AND BRANDED DRUGS

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ABSTRACT

The pharmaceutical industry in India is dominated by physicians and patients. They have a lot of options for treatments and surgeries. This calls for a higher dependence on scenario-based planning, a more intense focus on obtaining productivity benefits from sales and marketing expenditures, and demonstrating the worth of medications. Consumers are increasingly being marketed to and sold prescription medications using conventional marketing strategies like advertising and promotion. As a result, branding will have more of an impact on how patients and doctors behave and think. The pharmaceutical industry in India is dominated by physicians and patients. They have a lot of options for treatments and surgeries. In order to achieve this, scenario-based planning must be used more frequently, productivity gains from sales and marketing expenditures must be prioritised more intensely.

Keywords: Generic drugs, Branded drugs, Behavioural pattern, Promotion

INTRODUCTION

Pharmaceutical Branding

Traditionally, brands and branding were subject to constant revision and re-definition. There are a variety of ways to describe a brand. When it comes to brands, the American Marketing Association says that they are anything that is used to distinguish one seller's products and services from those of their competitors (Kotler, 2000). According to de Chematony and DallGlmo (1999), a brand is a cluster of functional and emotional values that guarantees stake holders a specific experience, the product's promises is what brands are all about in their most basic form (Blackett, 2004).

Over time, the idea of branding has evolved. To achieve short-term goals, previous branding models focused on building the brand rather than creating a positive image of the company (Aaker and Joachimstaler, 2000). From products and services to corporations and even nations, the modern notion of branding may be applied (Clifton, 2004). One way to describe branding is to call it "a significant challenge in product planning" (Kotler, 2000). Its capacity to gain an exclusive, positive, and conspicuous connotation in the minds of awide number of customers is what makes a brand valuable (Kapferer, 1997). The consumer's perception of the brand's worth is influenced by four factors: brand awareness, perceived quality, trust and image.

Pharmaceutical Value Chain

Each phase in the global pharmaceutical industry's value chain is outlined in the following table.

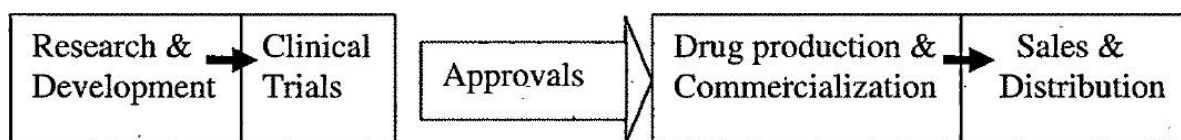


Figure 1: Pharmaceutical Value Chain

(Source: Pharma Industry in India, EVALUESERVE, 2001)

Sample Population Determination

Out of the overall population of about 2500 doctors surrounding the designated cities in Telangana, 1 percent of the doctors (i.e. 25) were selected as the sample for the study. Patients and pharmacists were sampled in the same way.

Sample Frame

The Indian Medical Association's local brand provided the list of physicians from which the sample frame was drawn. The list of members of the local Medical Representative Association was utilized as a frame work for the sample of medical representative. Similarly, pharmacists were able to frame their samples in the same way. Some personal recommendations were used to choose patients.

Sample Size

Convenience sampling and judgement sampling methods were used to pick representatives from the four categories of respondents, namely doctors, pharmacists, medical reps, and patients. In light of the enormous number of responders, a random sample of one percent was chosen from each of the four groups. As a result, a random sample of 250 doctors, pharmacists, medical representatives, and patients was selected.

Administration of Questionnaires

Sequential data collecting was devised. To begin, physicians were approached and asked to complete the survey on their own. Ahmadabad, Baroda, Surat, Pune, and Mumbai were among the Telangana cities chosen for data collecting. These cities were chosen because of the potential for business they have within the states in which they are located. Phase two of the study involved surveying pharmacists as well as medical professionals and patients to see what they thought about the topic.

Data Compilation

The outcomes of the study were compiled using appropriate tabular forms and variety of statistical methods. Based on the statistical analysis, the interpretation and findings were formed.

Data Interpretation and Analysis

The data obtained will be analysed in the next chapter. Analysis was carried out using a variety of methods including the Mean, Standard Deviation, Analysis of Variance (ANOVA), and Factor Analysis.

Bivariate Analysis

ANOVA (Analysis of Variance) was performed to measure the variability in the responses of the group of participants. Two or more populations are subjected to an analysis of variance (ANOVA) (Malhotra, 2005). Assuming that all means are equal, this is known as the "null

hypothesis." Metric data on an interval or ratio scale must constitute the dependent variable, and one or more independent variables must be presented (categorical or non-metric). Categories of uncorrelated variables are referred to as factors. ANOVA uses the F statistic to determine if the null hypothesis that the category mean is equal in the population is true.

Multivariate Analysis

Variable inter-dependence may be investigated using factor analysis, and the inter-dependence approach. Several underlying components are used to explore and describe interactions among a large number of connected variables, and this is known as a data reduction approach. Ethical medication consumers' overall purchasing behaviour and brand sustainability were studied using Factor Analysis in this study. Finally, the findings from both analyses were reviewed with a select group of physicists familiar with the researcher to double-check the study's conclusions.

RESULTS AND DISCUSSIONS

Sources of Information for Prescribing Medicines

In the cities selected, most doctors have a wide range of opinions and strongly support the practice of receiving regular updates on promotional schemes and samples from medical representatives. Many doctors believe that having a medical representative regularly visit to ensure that a certain drug brand's legitimacy and efficacy is a good idea, although this isn't universally held by doctors in the selected cities. Doctors in each of the places chose have a wide range of opinions, but they all agree that having a medical representative come regularly helps me decide on a preferred brand of medicine for a certain ailment. There is a wide range of views among doctors in the cities picked, but they all strongly advocate that they read any written promotional material from medication firms extensively. There is a wide range of opinions among physicians in each of the chosen cities, and many of them strongly like to stay current on their field's advancements by consulting medical periodicals. While the doctors in each city are divided on this issue, they all strongly support viewing medication advertising along side medical journal articles.

Prescription Behavior

In their responses to questions on their prescribing practices, doctors in all of the selected cities express a wide range of opinions, with the majority favouring cost comparisons among similar effectiveness medicines when writing prescriptions. On the question of whether or not they initially read medical literature when they aren't sure about an aspect of drug therapy before issuing a prescription, they slightly supported the statement but had a mixed attitude. A majority of them seem to agree, but they differ on whether the ultimate choice of brands is determined by their frequent requests to prescribe a specific group of brands. There is some agreement, but a wide range of opinions, on the assertion that physicians occasionally consult with colleagues when determining which drugs to provide to patients with a given ailment. However, when asked

whether they favour prescription drug brands that are well-promoted, respondents had a mixed response.

Prescription Behavior	Hyderabad	Warangal	Ghaziabad	Karimnagar	Nalgonda	Total
When I prescribe, I compare the costs of different medicine brands which have the same efficacy						
Strongly Disagree	6.0	0.0	0.0	6.0	0.0	2.4
Disagree	16.0	6.0	15.0	0.0	0.0	7.5
Neither agree nor disagree	10.0	35.0	15.0	10.0	30.0	20.0
Agree	39.0	39.0	35.0	49.0	30.0	38.4
Strongly	29.0	20.0	35.0	35.0	40.0	31.8

Table No 1: Prescription Behaviour

Cautiousness about fixed set of medicinal brands

To the question of whether or not they often give patients a preset set of pharmaceutical brands for a certain ailment, respondents generally agreed with the statement, but their views were only slightly divergent. Respondents were marginally favoured in all of the selected cities, but their opinions on the final choice of drug brands for a given ailment are based on gifts, samples, advertising schemes and frequent visits by medical personnel were marginally varied.

Cautiousness about fixed set of Medicinal brands	Hyderabad	Warangal	Ghaziabad	Karimnagar	Nalgonda	Total
I normally prescribe my patients the pre-determined set of medicine brands for a specific disease						
Strongly Disagree	0.0	0.0	0.0	0.0	10.0	2.0
Disagree	6.0	6.0	6.0	10.0	10.0	7.4
Neither agree nor Disagree	29.0	25.0	10.0	25.0	16.0	21.1

Table No 2: Cautiousness about affixed set of medicinal brands

Response from doctors: Bivariate and Multivariate Analysis

To conduct a multivariate ANOVA, six composite variables and twenty-five individual variables were employed (VI to V25). Factor analysis made use of twenty-seven distinct variables, including six composite variables (V6-V27), in addition to the six composite variables.

Demographic profile of the patients (Age profile of the patients)

Most patients (48.4 %) were older than 31, 39.3 % between the ages of 22 and 31, 11.33 % were between the ages of 18 to 21 years old, and just 1.3 % were younger than 18.

Gender of the patients

37.2 percent of male patients and 62.8 percent of female patients were polled across all cities.

The patients' credentials

There were 47.8 percent under-graduates, 33.6 percent graduates, and 17.4 percent of postgraduates in the cities that had been considered for the study.

The patient's family size

There were 28.1 % married families with two or more children, 25.7 % joint families, and 21.5 % single-parent households surveyed in the chosen cities. The demographics of the patients' incomes 66.8 % of patients questioned had an annual income of less than Rs. 60,000, 18.8 % had an income of between Rs. 60,000 and Rs. 1,50,000 per year and the rest had an income of over Rs. 1,50,000 per year in all of the selected cities.

ANOVA for years of age categories and four variables composite

There are 4 and 245 degrees of freedom and the F statistic value (0.717) for the first composite variable is less than the critical value (2.37), as can be shown from the ANOVA. As a result, we may accept the null hypothesis that the category means are equal. A doctor's prescription decisions are influenced significantly by the patient's age. $\alpha=0.05$, the second composite variable's F statistic (4.238) exceeds the crucial value (2.37) of 4 and 245 degrees of freedom. Thus, the null hypothesis that the category means are equal is discarded. In other words, the age of the patient has no major influence on the prescription cost. The third composite variable's F statistic (0.645) is smaller than the critical value (2.37) for 4 and 245 degrees of freedom for $\alpha = 0.05$, according to the results. As a result, we may accept the null hypothesis that the category means are equal. In other words, a patient's age has a substantial effect on the reasons for the expense of the prescription. $\alpha = 0.05$, 4 and 245 degrees of freedom, the value of F statistic (5.840) exceeds the crucial value (2.37) for $\alpha = 0.05$ for the fourth composite variable. Thus, the null hypothesis that the category means are equal is discarded. This indicates that the patient's

age does not affect the features that are perceived while purchasing generic or ethical pharmaceuticals online.

According to the findings, it can be extrapolate that a person's age does not have a substantial influence on the cost of a doctor's prescription or the features that a person considers when purchasing generic or ethical pharmaceuticals. As a result, the doctor's prescription behaviour is influenced significantly by the patient's age, as well as the reasons for prescription costs. As a result of their results, doctors use age as a factor when prescribing medications, such as dose strength and the number of pills in a particular treatment plan. ANOVA for the sexes and four composite factors; that $\alpha = 0.05$ and 4 and 245 degrees of freedom, the first composite variable's F statistic value (1.379) is less than the crucial value (3.48). As a result, we may accept the null hypothesis that the category means are equal. This suggests that the doctor's prescribing behaviour is significantly influenced by the patient's gender. There are 4 and 245 degrees of freedom in the second composite variable, and the F statistic value (1.032) is below the critical threshold (3.48). The null hypothesis that the category mean is equal is accepted. This suggests that the doctor's prescription costs are influenced significantly by the patient's gender. The third composite variable's F statistic (4.173) is more than the crucial value (3.48) for 4 and 245 degrees of freedom at $\alpha = 0.05$. Thus, the null hypothesis that the category means are equal is discarded. This suggests that the causes behind the high cost of a prescription are independent of the patient's gender. There are 4 and 245 degrees of freedom in the fourth composite variable respectively, and the F statistic (0.025) is smaller than the critical value (3.48) at $\alpha = 0.05$. As a result, we may accept the null hypothesis is that the category means are equal. This suggests that the gender of the patient has a considerable influence on the features that are perceived while purchasing generic or ethical medicines.

Inference

Gender categories of the patient, i.e. male and female, have a substantial influence on the doctor's prescribing behaviour, the doctor's cost of prescribing, and the features perceived while purchasing generic or ethical pharmaceuticals. To be sure, medication costs are not much affected by the patient's gender. The outcomes from this study show that female patients have higher confidence in the doctor's prescription and instructions and less understanding about the drug's efficacy than male patients.

ANOVA with four composite variables and four types of schooling

F statistic (0.282) for the first composite variable at $\alpha = 0.05$ is less than the threshold value (2.60) for 3 and 246 degrees of freedom in the ANOVA ($\alpha = 0.05$). To conclude, it can be said that the degree of education of the patient does affect how much medication the doctor will prescribe. For 3 and 246 degrees of freedom, the F statistic value (0.314) for the second composite variable is less than the critical value (2.60). Accordingly, we may reject the null hypothesis that the category means are not different from each other. There is a strong correlation between the patient's educational level and the cost of the doctor's prescriptions. There are 3 and 246 degrees of freedom in the third composite variable, and the F statistic (0.581) is less than the critical value (2.60). As a result, we may accept the null hypothesis that the category means are equal. As a result, the patient's degree of knowledge has a considerable bearing on there as the high cost of

their prescription. F statistic (1.107) for the fourth composite variable is below the crucial value (2.60) for $\alpha=0.05$ for three and 246 levels of freedom. As a result, we may accept the null hypothesis that the category means are equal. There is a correlation between the patient's educational level and the features they notice while purchasing generic or ethical pharmaceuticals. As a result, it can be deduced that the doctor's prescribing behaviour, the doctor's prescription cost, the attributes perceived when purchasing generic or ethical drugs, and the reasons for the prescription cost are all influenced by the patient's educational level, such as undergrad or postgrad. The above findings suggest that patient education does have a significant impact on their understanding of doctor prescription behaviour, the rationale for prescription fees, their curiosity about the efficacy of the drug, and their knowledge of alternative medications to consider as a possible treatment option. ANOVA, the different family sizes and four composite factors are compared. Using the ANOVA it can be observed that the first composite variable's F statistic value (6.474) at $\alpha = 0.05$ is larger than the crucial value (2.21). In this case, then null hypothesis of equal category means has been ruled out as a possibility. This indicates that the doctor's prescribing behavior is un-affected by the patient's family size. There are 5 and 244 degrees of freedom in the second composite variable, and the F statistic value (3.686) is over the threshold value (2.21) ($\alpha = 0.05$). Thus, the null hypothesis that the category means are equal is discarded. This means that the doctor's prescription costs are unaffected by the patient's family size. The third composite variable's F statistic (0.725) falls below the crucial value (2.21) for 5 and 244 degrees of freedom for $\alpha = 0.05$. As a result, we may accept the null hypothesis that the category means are equal. Patients' family size does affect prescription costs, as can be shown here. The F statistic (7.577) for the fourth composite variable exceeds the crucial value (2.21) for $\alpha = 0.05$ for degrees of freedom 5 and 244. Thus, the null hypothesis that the category means are equal is discarded. This indicates that the size of the patient's family has no bearing on the perceived qualities of generic or ethical medications purchased.

Inference

It can be concluded that the patient's marital status, as well as the number of children they have, a substantial influence on the cost of their prescriptions. However, the doctor's prescription behavior, the doctor's prescription cost, or the features perceived while buying generic or ethical pharmaceuticals are unaffected by the patient's family size. Patients with big families are more likely to be wary of the doctor's prescription costs than those with smaller families, according to the findings of this research.

ANOVA for the four composite variables and the various income groups

F statistic (4.210) for the first composite variable at $\alpha = 0.05$ exceeds the threshold value (2.37) for both 4 and 245 degrees of freedom. In this case, the null hypothesis of equal category means has been ruled out as a possibility. This indicates that the doctor's prescribing behavior is unaffected by the patient's socioeconomic status.

In the second composite variable, the F statistic value (4.986) is more than the crucial value (2.37) for four and 245 degrees of freedom. Thus, the null hypothesis that the category means are equal is discarded. To put it another way, a doctor's prescription cost is not influenced by a patient's

financial level. In the third composite variable, the F statistic (13.105) is more than the critical value (2.37) for both 4 and 245 degrees of freedom ($\alpha = 0.05$).

CONCLUSION

1. Response of the doctors

The process of consultation

According to the study's findings, medical professionals typically read medical journals in addition to watching medication advertising to stay current on new drug advances. When recommending a brand of medication for a certain condition, they are typically logical and cautious. Prior to prescribing, they typically prefer to hear the patient's personal perspective on their condition rather than resorting to published research regarding the brand of medicine's efficacy.

Sources of information

To evaluate the effectiveness of a particular drug brand, doctors frequently consult several sources of data. They occasionally confer with other doctors to choose the best brand of medication for a particular ailment. The study suggests that the doctors adopt different approach for gathering information about the medicine brands for a specific disease due to different educational background.

Relationship with the medical representatives and pharmacists

They think that having a relationship with medical representatives and pharmacists not only enables them to choose a preferred set of medication brands but also gives them confidence in the effectiveness of medications. According to the study, regular visits from medical personnel and pharmacists assist prescribers in selecting a pre-selected group of medication brands for a given ailment.

Preference of medicine brands

The study implies that when prescription medications for a certain ailment, clinicians may occasionally examine the costs of drug brands with the same efficacy. People like pharma company brands that frequently offer gifts, samples, and marketing initiatives. These results were further confirmed by asking doctors about their preferences for brand-name medications. For prescribing a particular set of medication brands for a particular ailment, the main preference criteria were things like the drug's efficacy, affordability, cost, and reputation of the drug maker.

Implications

The doctors need to be rational and cautious while prescribing a set of medicine brands for a specific disease by referring to multiple sources of information including other practitioners to check the efficacy of the medicine brand. Doctors should consider the impact of promotions on prescription decisions and its impact on the cost of patient treatment.

2. Response of the patients

Relationship with the medical practitioner

The study suggests that the patients always give priority to the doctor's advice over home treatment. One of the major reasons for visiting the doctor, suggested in the study, is the seasonal illness like fever, cold etc. Most patients normally inquire about the reputation and background of the doctor before visiting them (62.8 percent) and normally prefer their family doctor for the treatment. Patients normally seek information about the experience of the doctor, while visiting for the first time. The study finding regarding the major cause for dis-satisfaction among the patients with the present doctor was that the prescribed medicines were not effective.

Perception about the prescription behaviour of the doctor

The doctor identifies type of prescription like the dosage strength and the set of drugs based on the age of the patient, as suggested by the study. This means that the prescription cost for the younger patient may relatively vary compared to the older patients. The study also suggests that the female patients have relatively more faith on the doctor's prescription and guidelines and have relatively less knowledge about the efficacy of the drug compare to the male patients. The patients with higher education have a better understanding about the prescription behaviour of doctor. The doctors normally differ in their prescription approach and tend to stress more for a revisit by the younger patients than the older ones. The patients with relatively larger family size may be visiting doctor more regularly than the patients with smaller family size. As the patient with larger family size visit frequently to the doctor, there is relatively greater possibility to develop trust over the treatment and its price worthiness.

Relationship with the local retail pharmacists

The study finding suggests that most of the retail pharmacists do dispense substitute medicine brands in case the prescribed medicine is unavailable. Patients, after receiving the prescription slip from the doctor, sometimes inquire about the medicines from their known pharmacist to get their opinion about the prescribed drug efficacy.

Perception about the prescription cost of the doctor

Major finding of the study was that the patients are normally price conscious for the prescribed medicines. The patients, who are having relatively larger number of members in the family, are tend to be comparatively more cautious about the prescription cost of the doctor than the patients with smaller family size. The prescription cost for the younger patient may relatively vary compared to the older patients. Patients with older age have relatively more rational approach of thinking towards the prescription cost than the younger ones. The doctors are relatively more cautious about the cost of medicine brands prescribed to the patients with relatively less income for a specific illness. Doctors need to display relatively higher moral and professional obligation while treating the patients with relatively less income. The study suggests that the patients believe that the treatment cost is mainly because of the location and ambience of the place where doctor sits.

Rationale for the prescription fees of the doctor

The study suggests that the patients with relatively higher level of education will be able to understand better about the complexities of the prescription approach of a doctor and tend to be more rational thinkers regarding the prescription fee of the doctor and the prescription cost to them. Patients pay the prescription fee, as asked by the doctor, with an expectation that the prescribed medicines are effective and there is no other equally qualified or effective doctor near-by.

Knowledge about the efficacy of medicines

The study suggests that the younger patients relatively relying more on the medicines for relief from the illness whereas older ones believe that illness will take its own time but medicines will restrict the aggravation of a disease. Patients with low income are relatively less exposed and are not aware about the efficacy of medicine brands as they rely less on medicine treatment than on homely treatments for normal illness.

Knowledge of the substitute medicine brands

With higher level of education of the patient, the possibility of substitution of medicine brand mentioned in the prescription is relatively higher as the study suggests. They normally stick to the medicines prescribed by the doctor. Sometimes they do ask for the substitute medicines having same efficacy and relatively more cost effective, in case the prescribed one is not available with the known pharmacist.

3. Response of the pharmacists

Stock management at the stores

The study suggests that all the pharmacists carry the stock for vitamins and nutritional care products, and alternative medicines in their stores. Pharmacists keep higher quantity in their stores for alternative medicines. Among the product categories carried by the pharmacists, vitamins and nutritional care products contributes relatively higher proportion in the monthly income and alternative medicines are relatively fast moving products from the store counter of the pharmacist as suggested by the study. Most of the pharmacists procure stock on cash (49.8%). Pharmacists with relatively better education can more effectively track their stock of medicine brands based on the margins offered, fast and slow moving trends. Pharmacists with better education are more likely to look at the shelf life of specific medicine brands while deciding on the stock levels. Pharmacists with higher experience are relatively more cautious in tracking the fast or slow moving trends of the medicine brands and tracking the shelf life of specific medicine brand while deciding the stock level.

Stock of medicine brands

The study suggests that the education level of the pharmacist had significant influence on the understanding of the specialty and preferences of the doctor, stock movement of the specific set of medicine brands, promotional schemes and trade discounts offered on the medicines, cost of treatment and the dynamics in keeping the generic version of the specific set of branded medicines. Higher the education better is the understanding of the pharmacist about the rationale of medicine brands prescribed by the doctor for a specific disease as suggested by the study. Pharmacists carry a range of medicines for a specific disease. These generic medicines fetch better margins and sales volume to the

pharmacist. They prefer those medicine brands which offer gifts, promotional schemes, trade discounts and relatively better margins while deciding on the range of medicine brands for a specific disease.

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