Impact of Pharmaceutical Marketing Mix Model Strategies on Anti-Diabetic Drug

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Abstract— As the pharmaceutical companies are competing with each other for their branded product containing same drug, they are adopting different marketing mix model elements. Present study is undertaken to examine and evaluate the impact of marketing mix strategies. Physician was presented a questionnaire containing 10 different promotional methods, adopted by pharmaceutical companies. The response was recorded and compared. Results revealed that Cost of Product, Internet, Books & Journals, Technology Utilization were the most important factors. Study has provided a clear insight into the impact of pharmaceutical marketing mix promotional factors. Pharmaceuticals companies should adapt their marketing mix model strategies as per physician response.

Key words: Physician, Impact, Pharmaceutical, Type-2 Diabetes, Marketing Mix Model, Chi-Square Method

I. INTRODUCTION

The pharmaceutical industry is responsible for the development, production and marketing of medications. Thus, its immense importance as a global sector is evident. The total level of pharmaceutical revenue worldwide has reached nearly one trillion U.S dollars. North America is responsible for largest portion, generating more than 40 percent of these revenues. This is mostly due to the leading role of U.S pharmaceutical industry.

The statistics depicts the worldwide revenue of the pharmaceutical market from 2001-2013. In 2001, worldwide revenue was around 390.2 billion U.S dollars. Ten years later, the figure stood at almost one trillion U.S dollars.

After china Indian pharmaceutical companies is fastest and biggest in the world. This industry rank 14\textsuperscript{th} in terms of value and 3\textsuperscript{rd} in terms of volume globally. In India, domestic pharmaceutical companies are growing at very fast rate, they became leaders in many therapies in domestic market as well as they became strong exporter of the drugs globally.

India is a diabetic capital of the world with world’s largest diabetic population of around 30millions. These figures are expected to rise about 80millions by 2030 [WHO ESTIMATE, 2004 under “Diabetics Action Now” program]. The increase in the number of diabetics shall inevitably lead to a rise in the number of cardiovascular patients in the future because over 80percent of diabetic became cardiovascular patients and also majority of diabetics also need cardiovascular drug. During the course of their treatment for diabetics. Thus, cardiovascular and diabetology are among the fastest growing segments in the Indian Pharmaceuticals.

II. LITERATURE REVIEW

In “Impact of Pharmaceutical Marketing Communication Strategies on Prescription practices of Physicians” by Aditya Khajuria, Vijay Khajuria [1], in this study the impact of marketing promotional strategies on prescribing of physicians were studied. A questionnaire which includes eight major marketing communication modes comprised of 17 factors was administrated to physicians. They conclude that the pharmaceutical companies should understand physician’s prescription practices and mold and adapt their marketing communication strategy as per their requirements.

In “Use of the 4Ps Model to Examine Differences between Generic and Brand Marketing Strategies” by Yu-ping Lee, Dr. Shih-I Cheng, Dr. Ching-Yaw Chen [13]. This study consequently used the 4Ps perspective to analyze differences in the marketing strategies employed by generic and branded products. In summary, branded products typically adopt integrated marketing communications strategies to establish brand value and respond to encroachments by competitors and imitators. Low cost is always an overriding concern in the case of generic products.

In “Statistical Analysis of Adverse Events in Randomized Clinical Trials using SAS”-by Dongsun Cao, NC Xiaomin He [2]. They focused on how to apply statistical methods to assess adverse events using SAS. The paper also introduces the commonly used chi-square test and Fisher’s exact test. The application of statistical methods depends on study designs, data type and investigation purpose. Several clinical trial examples—such as dose-response studies, cross-over trials, are analyzed using SAS for illustration purposes.

III. THEORETICAL PERSPECTIVE

To understand the impact of marketing strategies on the physicians and their preference about various marketing mix model four major modes where studied. Factors which are important and applicable where selected from the four major modes. Some of the factor was better customer supply chain, technology utilization, cost of product, quality of product, etc. In the total 10 factors were chosen, which are relevant and included the major marketing mix model element.

In case of pharmaceutical sector, customers for the company were physician because their prescription was important. The marketing mix model consist of four major modes

- Product Strategy
- Price Strategy
- Place Strategy
- Promotional Strategy

This factor are explained below-

A. Product Strategy

Product strategies include product mix decisions, product line decisions, product attribute decisions, brand decisions, label decisions, and new product decisions, etc.
B. Price Strategy
Price strategies include pricing methods, new product positioning, price adjustments, discounts, payment deadlines, and credit term decisions. Increasing competition in recent years has resulted in very little differentiation between products; as a result, price changes have remained the sale effective means of attracting customers.

C. Place Strategy
Place strategies include decisions concerning distribution, agent type, storage, and transportation systems. Kotler (1991) suggests that place includes various activities performed by a company in order to put its products in the hands of target customers.

D. Promotion Strategy
In 1998 the US American Association of Advertising Agencies (4A) first defined integrated marketing communications as “a type of marketing communications planning concept,” and emphasizes the added value brought by this form of comprehensive planning. This comprehensive planning can be used to assess the strategic roles of all kinds of communications methods, including advertising, direct marketing, and public relations, and integrate these methods in order to provide clear and consistent communications, and enhance the impact of a marketing plan.

IV. CHI-SQUARE (X2) STATISTICAL METHOD
A chi-square test (also called chi squared test or 2 test) is any statistical hypothesis test in which the sampling distribution of the test statistic is a chi-square distribution when the null hypothesis is true, or asymptotically true. This means that the sampling distribution (if the null hypothesis is true) can be made to approximate a chi-square distribution as closely as desired when the sample size is large enough. The test statistic is:

\[ X^2 = \sum_{i=1}^{K} \left( \frac{o_i - E_i}{E_i} \right) \]

where,
\[ o = \text{the observed frequency in the } i^{th} \text{ cell of the table,} \]
\[ E = \text{the expected frequency in the } i^{th} \text{ cell of the table} \]

The degrees of freedom are: \( r \times c - (r-1)(c-1) \)

where,
\[ r = \text{number of rows,} \]
\[ c = \text{number of column} \]

V. RESEARCH METHODOLOGY
This study was undertaken in an around Indore region in 2015. Data source was primary, a detailed questionnaire were prepared and presented to physicians. Questionnaires, consisting of set of questions designed according to objective were used as a research instrument. Closed ended questions were used, where the respondent had to select the option available. Physician were surveyed, data was collected through a self administrated questionnaire which covered the different aspects of marketing mix model. The effectiveness of strategies was marked in a 5 points Likert scale ranging from “Not At All Important Effective” [score=1] to “Very Important “ [score=5], The responses were used and compiled. Ranking of various marketing mix elements in terms of their importance has been done.

VI. STATISTICAL DATA COLLECTION

A. Primary Data
Primary data is basically fresh data collected directly from the target respondents; it was collected through Questionnaire. Primary data was selected from the sample by a self-administrated questionnaire.

1) Sample Size
Sample size: 100
Sample Area: INDORE
Sample Unit: Physician’s

VII. STATISTICAL ANALYSIS
Response of physicians where compared by using Chi – Square statistical analysis method. P-value less than 0.01 were considered as significant.

VIII. RESULT
Physicians responded to the questionnaire. As their responses where recorded using 5 points Likert scale ranging from “Not At All Important Effective” [score=1] to “Very Important “ [score=5] , final mean score was calculated using excel. Results obtained from the responses of physicians revealed that cost of product, technology utilization, internet, publications featuring products books and journals ere the most important factor considered by the physicians. While R&D, information about product, publicity, were least important factors (TABLE 1).

<table>
<thead>
<tr>
<th>Item</th>
<th>Marketing Mix Category</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cost of Product</td>
<td>Price</td>
</tr>
<tr>
<td>2</td>
<td>Information of product</td>
<td>Promotional</td>
</tr>
<tr>
<td>3</td>
<td>Persuade to Purchase</td>
<td>Promotional</td>
</tr>
<tr>
<td>4</td>
<td>Customer Supply Chain</td>
<td>Place</td>
</tr>
<tr>
<td>5</td>
<td>Technology Utilization</td>
<td>Promotional</td>
</tr>
<tr>
<td>6</td>
<td>Average Quality of Drug</td>
<td>Product</td>
</tr>
<tr>
<td>7</td>
<td>To Expand market size</td>
<td>B2B strategy</td>
</tr>
<tr>
<td>8</td>
<td>R&amp;D Is Weakness Of Pharmaceutical</td>
<td>Product</td>
</tr>
<tr>
<td>9</td>
<td>Publicity is weakness of Pharmaceuticals</td>
<td>Promotional</td>
</tr>
<tr>
<td>10</td>
<td>Internet, Books &amp; Journals</td>
<td>Promotional</td>
</tr>
</tbody>
</table>

Table 1: Impact of Marketing Mix Promotional Strategy on Physician.

IX. DISCUSSION
As the pharmaceutical companies competing with each other for their drug used in type-2 diabetics they adopt different marketing mix elements. In this study, impact of these factor as studied on response of physicians. Cost of product, technology utilization, internet, publications featuring products books and journals are the most important factor considered by the physicians. Due to increase in cost of drugs physician influence their decision while prescribing.
Pharmaceutical companies are using B2B (business to business) strategy to expand their market size, medical representative more focused on persuade to purchase rather to provide information regarding drugs. Such factors are considered least important by the physicians. In terms of promotion brand or drug publicity is going in a good way but research and development is still being the major weakness of pharmaceutical sector.

Therefore, company has to launch such drugs for type-2 diabetics that are less costly as compared to its competitors. Also, some focus should be given to publications, brochures and booklets promoting company product. Pharmaceutical company must have to try to understand what are the physicians need and to study their prescription practices so that they can adapt and mould their marketing mix communication strategy as per their requirements the companies have to allocate the marketing mi communications budget over the four major modes thus, it is very important he company on understand importance of various marketing elements, so that they can allocate budget and also focuses on the right elements in order to get maximum benefit and sells.

X. CONCLUSION

In the present study, the impact of marketing mix promotional strategies or responses of physicians were studied. Physicians were self-administered through a detailed questionnaire based on four major marketing mix modes comprised of 10 factors cost of product, technology utilization, internet, publications featuring products books and journals are the most important factor considered by the physicians. While R&D, information about product, publicity, were least important factors. Therefore Pharmaceutical Company must have to try to understand what the physicians need is and to study their prescription practices so that they can adapt and mould their marketing mix communication strategy as per their requirements.

REFERENCES


