6th International Conference on Recent Development in Engineering Science, Humanities and Management
National Institute of Technical Teachers Training & Research, Chandigarh, India (ESHM-17)
14th May 2017, www.conferenceworld.in ISBN: 978-93-86171-36-8

PHYSICIAN BEHAVIOUR TOWARDS MARKETING OF PHARMACEUTICAL PRODUCTS

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ABSTRACT

Understanding physician behaviour is always critical for marketers of pharmaceutical companies.. These days different brands are in the field, increasing the size of the market. In this competition medical practitioner and physician are the key customers for this industry. Thus they are the prime focus for the marketing strategy. Product, price and promotion are the key ingredients where the marketing strategy revolves and pharmaceutical companies are preparing marketing instruments to draw attention of physicians to prescribe their brands. In this study, the researcher studied the factors influencing the prescription behavior of the physician. In the study, the regression analysis has been used to conclude the results .Research is based on panel data and is of quantitative in nature. Cluster sampling has been selected for the study. There are few factors which influence the behavior of physician for prescription such as research molecule, brand prescription, promotional tools and drug samples. Presciption is highly influenced on the way the salesperson promotes his brand. The main conclusion of this study is that the factors such as drug sample, new research molecule and promotion tool have an influence of physician prescription behavior.

***Keywords**: Brand prescription, Drug samples, Physician, Physician prescription behavior, Promotional tools*

I. INTRODUCTION

It is assessed that India's $12 billion drug market is growing 14 percent annually and companies are hoping to triple sales forces by 2020 to acquire this growing market as per figures given by government of India [1].

Likewise other business arena, the primary intent of pharmaceutical marketing is to enhance the prudence of the organization while focusing the demand of the consumers. Different organizations provide various choice of brand to their customers consistent with their needs. Whereas in pharmaceutical marketing the customer and people who are the consumers falls in two distinctive classes [2]-[3].

In order to cure disease people often buy products but which brand people should buy is decided by the physician. The marketing strategies are thus framed in order to influence the choice of physician to prescribe particular brand to the consumer which is well served by the Medical representatives (MRs). The special methods are offered to physician through the organization sales force. Unlike other commercial organization the products in

ISBN: 978-93-86171-36-8

pharmaceuticals are precise which requires sales promotion within framework and accurate technique for product information with specialist who have better point to point information towards illness and equipment (WHO Technical Report series, No. 722, 1985, p. 43).

The pharmaceutical enterprises spend around one third of their revenue on the marketing of the pharmaceutical drugs. The MRs are the employees of the pharmaceutical companies who promote the various drugs of the doctors to the physician. There is a relationship between MRs of the company and physicians. The promotion work is mainly handled by the sales team of the company. The MR is the ones who meet doctors of their assigned territory and generate revenue. Physician who met MRs frequently were like to prescribe medications that are not clinically indicated [4] and to trust less on data from published research findings when a new medication becomes accessible [4].

The Physician Prescription Behavior (PPB) depends on five factors:

1. New Research Molecules (NRM)
2. Brand prescription (BP)
3. Promotional Tools (PT)
4. Drugs sample (DS)

The objective of this paper is to study factors influencing the prescription behavior of the physician.

1.1 Previous Research

Theodorou et al., 2009 stated that clinical effectiveness is an important factor in prescription in Greece and Cyprus [5]. The main source of drug information for physicians are peer reviewed medical journals, medical textbooks, proceedings of conference and pharmaceutical sales representatives. Another research was conducted in Denmark which conclude that price plays as an important dimension in prescribing drug and above all pharmaceutical Industry, MRs highly influenced physician behavior [2

The complexity of interrelated factors influences Family Physicians (FPs) preference of drugs wherein CME programmes and detailing proved not to be effective in effected the FPs [6].

Kotwani et al., 2010 explained the effect of MRs and deficient knowledge in physicians working in government hospitals which led to prescribe antibiotics in Delhi [7].

Past studies have proved that the physicians' prescribing behavior can be altered and multiple determinants are involved in physicians' decision to alter their prescribing habits. (Hartzema et al., 1983) established non medical determinants as important determinants of total prescribing volume among physicians [8].

Girdharwal & Singh, 2007 investigated physician needs and wants from pharmaceutical company. The study concluded that physicians have accepted internet as mode of information providing but they have not accepted it as medium of communication and promotion of medicines. A medical representative is still considered by huge majority as a better medium of communication and promotion by the physicians [9].

Pharmaceutical companies usually take drug sample as a marketing technique. There is little knowledge about how availability of drug samples effect prescribing behavior of physician. In this research of self reported doctor actions, abstaining price to the one was most effective motivator for the prescription behavior of physician to use drug samples. The advantages of drug samples make physicians mind to review that they would prescribe or

ISBN: 978-93-86171-36-8

recommend medicine that is different from their medication choice [3]-[10] and the effect of drug samples in prescribing behavior of physicians for therapy of hypertension. This research focused need for research to rule out the impact of drug samples on prescribing habits [11]-[12]-[13].

The medical sales representative does many ethical activities from pharmaceutical enterprise to medical practitioners. Small incentives like sponsor dinners, pens , writing pads , soaps, hand rubs , sponsorship to conferences and some other activities performed by physicians. Some medical practitioners consider this gift as unethical hindrance while prescribing treatments. A physician agrees that such activities by pharmaceutical enterprises are their direct or indirect need for drug prescription [14]-[15]. .

The influence of propagative tools by pharma enterprises has great influence on prescribing behavior of physicians. The general propagative tools are small gifts, sponsored CMEs etc. This has more impact than scientific propagative tools for physicians contrast with consultant [16].Medical practitioner's intent on gifts and other things made available by the pharmaceutical enterprise for grant and sponsorship at the beginning of the careers [17].

Thomson et al. (1994) explored the attitudes of New Zealand general practitioners to pharmaceutical representatives. The major finding of the study was that the provision of practical prescribing advice by representatives and gifts relevant to medicine were seen as desirable activities by many respondents [18].

II. MATERIAL AND METHODS

2.1 Survey design

The study was a cross-sectional survey that used a 14 –item, 2 page, and anonymous, self –administered questionnaire. The questionnaire was advanced based on literature review [19] and deliberation between two authors (A, DK). The questionnaire sought attributes of the physicians and factors influencing their prescription behavior. Pilot study on 30 respondents was done to check its reliability and validity.

Characteristics of the respondents. We asked questions regarding sex, years in practice, specialty, type of organization, family income, education/training, use of personal computers.

Factors influencing prescription behavior. Questions were asked regarding the factors which influence prescription behavior. The factors are new research molecule, personal gifts, brand prescription and drug samples.

Prescribing behaviors. Physicians were asked about ten questions relating to prescribing behavior.

2.2 Survey Sample

The target population was physicians who are practicing government hospitals in India. Random sampling was not possible in our case because lack of full data of all the physicians in India. We included Government hospitals of Chandigarh which are PGIMER, Government Muti specialty hospital

Sector 16, Government medical college and hospital sector 32 and Civil Hospital 22 and other hospitals in Chandigarh and Mohali. We have not included the physicians who were retired, on leave or working in Administrative roles. The sample size was 470 respondents.

ISBN: 978-93-86171-36-8

2.3 Survey Administration

The survey was administered from April to August 2016. On the top of the questionnaire, the purpose of the study was given. The questionnaire was included in the study only when it was returned by deadline (August 30, 2016). The data was entered side by side into Microsoft Excel.

2.4 Statistical Analysis

Regression analysis and factor analysis were selected to find out solutions of objectives of research. The relationship between dependent and independent variables was found out by statistical tool known as regression technique. In the research, impact of different factors on physician prescription behavior was presented. Scientific package for the Social Sciences (SPSS) Software was used to find out the relationship between dependent and dependent variable.

2.5 Model Equation

PPB= α + β1 NRM + β2 BP + β3 PT + β4 DS *e*

Here, the PPB stands for physician prescription behavior, NRM stands for new research molecules which are introduced for first time in India, BP stands for branded drugs, PT stands for promotional tools which is gifts, DS stands for drug samples given by MRs to physicians during their sales meeting with doctor and e stands for error term.

2.6 Model Hypothesis

$H_{0\,1}$: New research molecule is significant to physician prescription behavior.

$H_{0\,2}$: Branded prescription behavior is significant to physician prescription behavior.

$H_{0\,3}$: Promotion tool is significant to physician prescription behavior.

$H_{0\,4}$: Drug sample is significant to physician prescription behavior.

Here, the PPB stands for physician prescription behavior, NRM stands for new research molecules which are introduced for first time in India, BP stands for branded

III. RESULTS AND DISCUSSION

Table I: Model summary for dependent variable and independent variable

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.316[c]	.100	.094	.48246

Source: Results of Regression analysis using SPSS

c. Predictors: (Constant), DS, NRM, PT

ISBN: 978-93-86171-36-8

As per above Table I, it is concluded that R shows that relationship exist in the selected variables. R square shows the degree of change occurs in dependent variable with impact of independent variable and so adjusted R square i.e. 0.94 depicts magnitude of the relationship.

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Table II : ANOVA[c] for dependent and independent variable

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	12.004	3	4.001	17.189	.000[d]
	Residual	108.471	466	.233		
	Total	120.474	469			

Source: Results of Regression analysis using SPSS

Table II depicts that model is significant because sig value is < 0.05.

Table III: Values of coefficients for independent variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	2.559	.089		28.823	.000
	Drug samples	.075	.018	.191	4.219	.000
	New Research Molecule	.092	.019	.207	4.705	.000
	Promotional tool	.043	.018	.108	2.384	.018

Source: Results of Regression analysis using SPSS

The value of t stats in Table III. represents the significantly difference to its variables or to its variable in the model.

Table IV : Value of Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
3	Brand prescription	.078[d]	1.737	.083	.080	.966
a. Dependent Variable: PPB						
d. Predictors in the Model: (Constant), DS, NRM, PT						

Source: Results of Regression analysis using SPSS

ISBN: 978-93-86171-36-8

Value of drug sample, new research molecule and promotional tool are below 0.05, which shows that every variable has a significant impact on physician prescription behavior. However as per Table IV, the figure of brand prescription is more than 0.05 which shows that this variable has no effect on physician prescription behavior.

IV. IMPLICATIONS AND CONCLUSIONS

The focus of research is to find out when physician prescribe a medicine, whether the factors like new research molecule (NRM), branded prescription (BP), and Promotional tool (PT) or Drug sample (DS) influence his prescribing behavior. The independent variables in the study are new research molecule (NRM), brand prescription, promotional tools and Drug sample. The dependent variable in the study is physician prescription behavior. The sample size of the study was 470 respondents. Regression technique was used to find out the influence of factors on physician behavior. The study concluded that drug samples, new research molecule and drug samples effect the physician prescription behavior. Brand prescription has no effect of physician behavior. The reason of such result is that Brand prescription is much costlier than the generic products so it has less influence on physician prescription behavior.The sample size of the study was small and study was limited to small geographical area. The study does not include the factors like personality of MR and peer group advice on the physician prescribing behavior. The study of this factor could provide a wider outlook of the study. However, these are the areas which can be taken for further research.

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