

# The Impact of Pharmaceutical Promotion Strategies on Prescribing Behavior of Physicians A Developing Country Experience: Case of Addis Ababa, Ethiopia

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## **Abstract**

The population growth and economic development of Ethiopia contribute for huge demand to health care services in general and pharmaceutical products in particular. There are various local and global players in Ethiopian pharmaceutical industry where the competition is becoming stiff in the country. The major factors affecting selection of a specific brand of pharmaceutical product is affected by physicians' prescription behavior. Numbers of firms have yet to understand and revise the impact of this in their firms. This study was conducted to explore the impact of pharmaceutical promotion strategies on prescribing behavior of physicians and determine the convinced promotional tools that are most effective in influencing the prescribing behavior. A Cross-sectional survey strategy was used to collect data through self-administered questionnaire from physicians in Addis Ababa. Simple random sampling method was applied to select respondents and a complete 270 questionnaire was found from population of 934 physicians. The data quality was assured before data collection through pilot testing and expert evaluation; data representativeness through KMO, and reliability of the constructs through sample Cronbach alpha tests were measured. Factor analysis was used for data reduction, ANOVA, F-test, and Independent-Sample t-test has been applied to test the hypothesis of the research. The finding shows that sales promotion has been perceived to be the most influencing factor and personal selling has been revealed to be the second most important factor. The advertizing, sales promotion and promotional strategies have also been perceived as the third, fourth and fifth important influencing factors respectively. Public relation is perceived as the least important factor. The pharmaceutical companies in Ethiopia need to apply aggressively Sales Promotion as their marketing communication strategy and invest less on public relation.

**Keywords:** Physician prescribing behavior, Advertizing, Personal selling, Public relation and Sales promotion.

## **Introduction**

### **The Promotion Practices In Pharmaceuticals**

The impact of drug manufacturers' commercial activities on drug choice has been recognized (Arora and Taneja, 2006). Pharmaceutical marketing is unique as the decision making of buying the medicine lies in the hands of the intermediate customer (i.e., doctors) rather than final consumer (i.e., patients). Thus pharmaceutical companies

attempt to influence the customer doctors rather than the patients. Thus doctors are the most important players in the pharmaceutical marketing system. Doctors write the prescriptions that determine which drugs (brands) will be used by the patient. Thus influencing the doctor is a key to boost pharmaceutical sales. Pharmaceutical companies endeavor to influence prescription pattern of doctors in favor of their brands by offering various kinds of promotional inputs such as samples, gifts and sponsorships etc (Arora and Taneja, 2006). Usual marketing practices done by companies include providing valuable gifts, arranging overseas travel with family and providing tickets for membership for social activities to Doctors (Jayakumar, 2008). It has been suggested that the doctor's prescribing behavior may vary from country to country and thus national studies are needed (Dorfman and Cather, 2012) to understand physicians prescribing behaviors in different countries.

In Ethiopia the same drug molecules are sold under different brand names by different pharmaceuticals. To persuade the physicians to prescribe their brands pharmaceuticals engage in marketing techniques including giving samples, gifts, brochures, booklets, etc. To date, no empirical work has been presented to the academic community about the impact of pharmaceutical promotion strategies on prescribing behavior in Ethiopia as a whole. Therefore, the research in this thesis is mainly concerned with the influence of pharmaceutical promotion strategies on the prescription behavior of doctors in Addis Ababa.

Pharmaceutical sector plays a crucial role in the country's economy and it also ensures the welfare of its citizens. The pharmaceutical industries are spending large sums of money on marketing than innovation, research and development (Manchanda et al., 2005). The marketing efforts of pharmaceutical companies are directed towards physicians (drug prescribers) who are important decision makers about medicines and encompass personal selling through medical sales representatives, sampling, physician meetings and events; and advertisements in medical journals.

According to revised document that contains list of human pharmaceutical suppliers issued by Food, Medicine, Healthcare Administration and Control Authority of Ethiopia- FMHACA (2014), there are a total of 254 pharmaceutical supplier companies in Addis Ababa currently which comprise Manufacturers, Importers and Wholesalers. Most of these companies promote their products in different brand names with almost similar kind of promotional tools. Determining the most effective way of promotion is crucial to pharmaceutical companies to direct their promotional effort appropriately. Thus, pharmaceutical company managers/marketing managers are grappling with the following

1. What is the impact of the different kinds of promotional strategies on the prescribing behavior of physicians?
2. Which promotional tools are more effective to influence the prescribing behavior of physicians?

The World Health Organization (WHO) defines pharmaceutical promotion as “all information and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, or use of medicinal drugs”.

According to Food, Medicine and Health Care Administration and Control Authority of Ethiopia (FMHACA, 2013), 'Pharmaceutical promotion includes any representation such as sound, word, sign, image, electronics or other means whatever, for the purpose of promoting directly or indirectly the prescription, sale or dispensing of any pharmaceuticals. The authority also defines “pharmaceuticals as any substance used in the diagnosis, treatment, mitigation or prevention of a disease in human and includes narcotic drugs, psychotropic substances and precursor chemicals, traditional medicines, complementary or alternative medicine; poisons, blood products, vaccine, radioactive pharmaceuticals, cosmetics and sanitary items and medical instruments.”

Promotional strategy is the design, planning, implementation and controlling of integrated communication activities. The pharmaceutical marketing communications comprise advertizing, personal selling, public relations and sales promotion as well as web communications collectively constituting the promotion mix. This mix serves triple purpose: (1) to provide information, (2) to persuade, and (3) to remind (Sherlock, 2010). Marketing communication is a management concept that is designed to make all aspects of marketing communication such as advertising, sales promotion, public relations, and direct marketing work together as a united force, rather than permitting each to work in isolation. It is the communication between the buyer and seller in order to let the buyer get known with your product with the main goal to sell the product.

Billions of Dollars is spent by pharmaceuticals to promote their products. The main communications tools used are public relations, personal selling, advertisement and sales promotions. Each communication mixes has its benefits and can be used in different ways to get in contact with the target audiences.

Broadcast advertizing of prescription drugs directly to consumers is prohibited in Ethiopia except ORS, oral contraceptives, condoms, vaccines, vitamins, medicated and non medicated cosmetics, sanitary and beautifying agents like tooth paste, diapers and modes, and disinfectants (FMHACA, 2013). Pharmaceutical advertizing is directed

to the prescriber, not the final consumer; the target audience is identifiable; the company image is important; scientific journal reputation is key and rational appeals dominate the prescription decision of physicians (Dogramatzi, 2002). Moreover, (SHARMA, 2012) found that presenting good quality literature and journals are preferable promotional tools as compared to organization of free camps, personal gifts, medicine samples or any other incentive.

A study have found no significant difference between government doctors and private doctors, and also no significant difference between medical representatives and sales managers (Siddiqi et al., 2011)

Shamimulhaq et al. (2014) examined factors influencing the prescription behavior of physicians and concluded that the way sales person promotes their brands by using different promotional tools is the most influential than any others.

In a rare qualitative study by Jones et al. (2001) indicates that perceptions of the factors influence the decisions to start prescribing new drugs, including attitudes to drug information sources. Commercial sources of information, in particular pharmaceutical representatives, were an important information source for both consultants and GPs.

Taneja (2008) revealed that perceived personal selling to be the most important factor with the highest explained variance of 14.636 %. On the contrary other research found that drug representatives did not affect the prescription behavior of physicians while text books are the most frequent sources of information in prescribing decisions of physicians (Al Zahrani, 2014)

MIKHAEL et al. (2014) Found that there is no significant difference among physicians who directly trust the information from drug companies and MRs from those who don't trust unless check the data by themselves using suitable reference books or journals.

Public relations are used for long-term strategic image building, developing creditability and raising the organization's profile, to enhance other marketing activities. It is a planned element of the wider promotional mix, working in synergy with the others.

Khajuria et al. (2013), evaluate the impact of these pharmaceutical promotional strategies on prescribing of drugs by physicians. The results revealed that publicity like seminars, publications, and reputation of company and advertizing like brochures and booklets were the most important factors considered by the physicians while prescribing of drugs. The image of the producing pharmaceutical company is another important factor in terms of priority in what regards the intention of the physicians to prescribe a certain product (Ion, 2013).

According to Narendran and Narendranathan (2013) pharmaceutical marketing influences the choice of brands

by a physician. Public relation, especially the rapport with the doctor, was the most effective strategy while advertisements in journals and direct mailers were the least effective strategies. Personal selling by sales persons and giving letter pads and even samples were rated less effective strategies.

#### **Research Design:**

The research design was cross-sectional survey strategy conducted through self-administered questionnaire to some selected physicians in Addis Ababa. Simple random sampling method was used for sampling of respondent population. According to African Health Workforce Observatory (AHWO) (June, 2010) report, there are a total of 934 physicians in Addis Ababa. From these 396 are general practitioners and 538 are specialists working in public and private health institutions. A selected sample of 270 physicians was taken from all types of physicians working in different health institutions of Addis Ababa. Primary source of information was collected by using a questionnaire administered to a selected sample. Secondary sources of information were used for questionnaire preparation and for other relevant references.

#### **Data collection methods and procedure:**

Data was obtained by using a self-administered questionnaire to a sample, which was prepared from literature and previous studies. A well-structured schedule was developed for conducting this study. Liker scale with 5 anchored levels has been used.

#### **Validity and reliability issues:**

A Cronbach's Alpha value 0.767 suggests consistency of data. Thus, it shows reliability of the data. According to Taneja and Kaushik (2007), Cronbach's Alpha values higher than 0.6 show data reliability. This threshold is, also applied by many researchers such as Zachry et al. (2003). Concerning validity, the results are likely to apply to other physicians in Ethiopia as the socio-cultural context and the drug promotional strategies exhibit similarity all over Ethiopia.

#### **Data analysis methods:**

Factor analysis method has been applied for data reduction and results of total variance explained and rotated component matrix has been used. ANOVA and F-test and Independent-Samples t test was used for hypothesis testing to see the relationship between factors and demographic variables. The data have been statistically analyzed on the basis of responses provided by respondents by using SPSS software program for data recording, calculating percentages, frequencies and factor analysis method. The data was analyzed using SPSS version 20 for windows throughout the study.

## Descriptive Statistics

### Demographic Characteristics:

This section reports descriptive statistics on respondent's

demographic characteristics, i.e., distribution by age, gender, marital status, educational qualification, ownership of the institution and practicing area/region.

**Table 1: Distribution of respondents by age**

Age Group	Frequency	Percent
up to 35 years	170	62.96
36 to 45 years	51	18.89
46 to 55 years	30	11.11
56 or above	19	7.04
Total	270	100.0
Highest Qualification	Frequency	Percent
GP	184	68.15
Specialist	86	31.85
Gender/Sex	Frequency	Percent
Male	192	71.11
Female	78	28.89
Marital Status	Frequency	Percent
Married	133	49.26
Single	137	50.74
Ownership of the Institution	Frequency	Percent
Government	138	51.11
Private	132	48.89

Physicians from all age groups participated in the questionnaire survey. It is apparent from Table 1 that majority of physicians belong to the age group of up to 35 (62.96%) years. This also indicates that majority of the physicians currently practicing in Addis Ababa are young.

The majority of physicians (68.15%) who participated in this study were GPs (General Practitioners). It can be said that a majority of physicians in Addis Ababa is general practitioners; majority of respondents (71.11%) who participated in the questionnaire survey were Male. It can be conclude that majority of physicians in Addis Ababa is Male.

Most of the respondents (50.74%) were single. Married physicians were (49.26%).

Most of the respondents were practicing in government

institution (51.11%). It also indicates that the difference of the percentage of private practitioners and government practitioners are very small, which is only (2.22%). Therefore, it can be said that almost equal number of physicians are practicing in government and private owned health institution in Addis Ababa.

### Factor Analysis

As an assessment of suitability of the data for factor analysis, the reliability of data and the sample adequacy for factor analysis should be tested. Cronbach's Alpha was used to test the consistency of data it was above .76 for all factors. According to Taneja and Kaushik (2007), Cronbach's Alpha values greater than 0.6 show data reliability. Bartlett's test of sphericity and KMO was used to check the Sample Adequacy for factor analysis.

**Table 2: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			<b>0.735</b>
Bartlett's Test of	Sphericity	Approx. Chi-Square	1295.00
		df	190
		Sig.	0.000

Measure of Sample Adequacy such as Bartlett's Test of Sphericity (approx. Chi-Square is 1295.00, degree of freedom is 190, and significance is 0.000) and KMO value (0.735) as can be seen in Table 2. It shows that the data was based on a sample adequate for factor analysis.

### Extraction of factors

Principal component analysis was used for extracting factors and six factors were retained depending on eigenvalues and variance explained. Eigenvalue represents

the total variance explained by each factor. The standard practice normally used is that factors with an Eigenvalue of one or more should be extracted. Six factors having eigen values more than one (a factor must explain at least as much of the variance if not more, than a single original variable). Thus, six factors have been extracted. The total variance explained by extracted six factors was 66.528%. The results were obtained through rotations with Varimax and the factor loadings greater than 0.40 were retained.

**Table 3: Total Variance Explained**

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.173	25.863	25.863	5.173	25.863	25.863	2.962	<b>14.811</b>	14.811
2	2.465	12.324	38.187	2.465	12.324	38.187	2.729	<b>13.645</b>	28.456
3	2.034	10.170	48.357	2.034	10.170	48.357	2.341	<b>11.707</b>	40.162
4	1.435	7.177	55.534	1.435	7.177	55.534	2.123	<b>10.617</b>	50.780
5	1.144	5.720	61.255	1.144	5.720	61.255	1.658	<b>8.289</b>	59.069
6	1.055	5.274	66.528	1.055	5.274	66.528	1.492	<b>7.460</b>	66.528

Extraction Method: principal Component analysis

**Table 4: Rotated Component Matrix**

		Component/Factor					
		1	2	3	4	5	6
	<b>Promotional tools and approaches</b>						
1	Academic product literature/updates	.152	.027	.176	.059	<b>.821</b>	-.019
2	Accuracy & reliability of sales representative	<b>.500</b>	.492	-.026	-.113	.414	.024
3	Detailing ability of sales representative	<b>.761</b>	.195	.124	-.061	.208	.139
4	Directories having medicine details	<b>.786</b>	.007	-.037	-.012	.176	-.030
5	Exhibits in conference	<b>.745</b>	.013	.022	.216	.034	.217
6	Free Physician Sample	<b>.494</b>	.442	.318	.207	-.162	-.329
7	Low value gifts with brand name ( Pen, guan)	-.055	.499	.055	<b>.552</b>	-.024	-.293
8	Medical textbook as gift	.113	.054	<b>.706</b>	.201	.298	-.235
9	Publications in journals and magazines	.021	-.214	<b>.591</b>	.329	.371	.006
10	Personality of medical sales representative	.175	<b>.752</b>	.015	.045	-.060	.091
11	Product brochures and booklets	<b>.434</b>	.102	.287	.399	-.115	.097
12	Product knowledge of sales representative	<b>.481</b>	.430	.240	-.013	-.127	.168
13	New product launch parties	.238	.237	.072	-.022	.054	<b>.774</b>
14	Promotion by Mail/Web/SMS/Telephone	.071	.077	<b>.823</b>	-.051	.085	.095
15	Product poster posted in front of you	.042	.303	<b>.670</b>	.126	-.267	.285
16	Regular visit of medical sales representative	.132	<b>.584</b>	.071	.216	-.166	.579
17	Relationship with medical sales representative	.029	<b>.772</b>	.109	.164	.088	.301
18	Reputation of a pharmaceutical company	-.163	.199	-.003	<b>.705</b>	.265	.013
19	Sponsorship of medical conferences	.252	.041	.217	<b>.781</b>	-.036	.088
20	Training program given by the company	.233	-.249	.075	.446	<b>.513</b>	.071

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 23 iterations.

### Naming of factors

After factors have been extracted, the next task of the researcher was to interpret and label of factors. This is done by the process of identifying the factors that are associated with which of the original variables. The rotated component matrix is used for this analysis. The rotated component

matrix gives the researcher the loadings of each variable on each of the extracted factors with loadings having values between 0 and 1. Values close to 1 represent high loadings and those values close to 0, represent low loadings. The objective of this activity is to find out high loading of each pharmaceutical promotional tool or approach (variable) on each extracted factor.

**Table 5: Naming of Factors**

Factor Name	Item No.	Promotional tools and approaches	Factor Loading
Sales Promotion (F1)	4	Directories having medicine details	0.786
	3	Detailing ability of sales representative	0.762
	5	Exhibits in conference	0.745
	2	Accuracy & reliability of sales representative	0.500
	6	Free Physician Sample	0.494
	12	Product knowledge of sales representative	0.481
	11	Product brochures and booklets	0.434
Personal Selling ( F2)	17	Relationship with medical sales representative	0.772
	10	Personality of medical sales representative	0.752
	16	Regular visit of medical sales representative	0.584
Advertizing (F3)	14	Promotion by Mail/Web/SMS/Telephone	0.823
	8	Medical textbook as gift	0.706
	15	Product poster posted in front of you	0.670
	9	Publications in journals and magazines	0.591
Image (F4)	19	Sponsorship of medical conferences	0.781
	18	Reputation of a pharmaceutical company	0.705
	7	Low value gifts with brand name ( Pen, guan)	0.552
Educational Promotional Tools (F5)	1	Academic product literature/updates	0.821
	20	Training program given by the company	0.513
Public Relations ( F6)	13	New product launch parties	0.774

The first factor is Sales Promotion. The rotated matrix has disclosed that respondents have perceived this factor to be the most important factor (set of promotional tools which fall under the factor) with the highest explained variance of (14.811%) . The second factor is Personal selling with the rotated matrix has revealed that personal selling to be the second most important communication strategy in pharmaceutical sales with explained variance (13.645%). The third factor is advertising which accounts for (11.707%) of explained variance. Four types of promotional tools were loaded on to this factor. The fourth factor is image and collectively accounts for (10.617) explained variance. This

factor constitutes low value gifts, sponsorship in medical conferences and using the advantage of the reputation of a pharmaceutical company during pharmaceutical marketing communication. The fifth is Educational Promotional Tools with explained variance of (8.289). Two types of promotional tools were loaded on to this factor. Educational promotional tools targeted towards physicians i.e. presenting academic product literature/updates and giving training to physicians by the pharmaceutical company were loaded high on this factor. The six is Public Relations (PR) which accounts for (7.460%) of explained variance.

**Table 6: ANOVA and F -Test between Age and Factors**

		Sum of Squares	Df	Mean Square	F	Sig.
Sales Promotion Personal Selling	Between Groups	2.127	3	.709	.705	.550
	Within Groups	166.873	166	1.005		
	Between Groups	6.198	3	2.066	2.107	.101
	Within Groups	162.802	166	.981		
Advertizing	Between Groups	1.618	3	.539	.535	.659
	Within Groups	167.382	166	1.008		
Image	Between Groups	9.148	3	3.049	3.167	<b>.026</b>
	Within Groups	159.852	166	.963		
Educational promotional tools	Between Groups	3.053	3	1.018	1.018	.386
	Within Groups	165.947	166	1.000		
Public relations	Between Groups	3.930	3	1.310	1.317	.270
	Within Groups	165.070	166	.994		

**Table 7: Multiple comparisons Dependent Variable: Sales promotion**

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
up to 35 years	36 to 45 years	.41888026*	.19771782	<b>.036</b>	.0285146	.8092460
	46 to 55 years	.43939679	.24429910	.074	-.0429370	.9217306
	56 or above	.64402795*	.29874198	<b>.033</b>	.0542044	1.2338515
36 to 45 years	up to 35 years	-.41888026*	.19771782	<b>.036</b>	-.8092460	-.0285146
	46 to 55 years	.02051653	.28420949	.943	-.5406147	.5816477
	56 or above	.22514769	.33217429	.499	-.4306832	.8809786
46 to 55 years	up to 35 years	-.43939679	.24429910	.074	-.9217306	.0429370
	36 to 45 years	-.02051653	.28420949	.943	-.5816477	.5406147
	56 or above	.20463116	.36184178	.572	-.5097740	.9190363
56 or above	up to 35 years	-.64402795*	.29874198	<b>.033</b>	-1.2338515	-.0542044
	36 to 45 years	-.22514769	.33217429	.499	-.8809786	.4306832
	46 to 55 years	-.20463116	.36184178	.572	-.9190363	.5097740

\*. The mean difference is significant at the 0.05 level.

### Relationship between Qualification and Factors

To compare two groups' mean scores on the same variable, independent-sample t test was used. The variable qualification consists of two groups such as general practitioners and specialists. Table shows that H (2) is rejected in the case of Images and educational promotional tools as significance value under t-test for Equality of means

is (0.002) which is less than (0.05) on the two promotional strategies. Therefore, it can be said that the perception of physicians towards various kinds of promotional tools under sales promotion and promotional tools is dependent of their qualification. And at the same time the perception of physicians towards various kinds of promotional tools listed under the rest of marketing communication strategies is independent of their qualification.

**Table 8: Independent Samples Test between Qualification and Factors**

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Sales Promotion	Equal variances assumed	.027	.870	-.676	168	.500	-.11146261	.16500545
Personal Selling	Equal variances assumed	.149	.700	1.138	168	.257	.18727771	.16459643
Advertizing	Equal variances assumed	2.654	.105	-.215	168	.830	-.03545528	.16520674
Image	Equal variances assumed	19.916	.000	3.116	168	<b>.002</b>	.50065558	.16065102
	Equal Variance not assumed			3.983	167.957	<b>.000</b>	.50065558	
Educational promotional tools	Equal variances assumed	3.512	.063	3.440	168	<b>.001</b>	.54929697	.15970209
	Equal Variance not assumed			3.797	133.173	<b>.000</b>	.54929697	
Public relations	Equal variances assumed	.022	.883	-1.075	168	.284	-.17694474	.16466446

It is also shown that the perception of general practitioners (GPs) and specialists for both sales promotion and promotional tools is significantly different. That means the significance level (p-value, 0.000) for both promotional strategies signifies that the probability that there is equal perception between general practitioners (GPs) and specialists is very small. Hence, it can be said that qualification of physicians influences the importance assigned especially to sales promotions and promotional tools. But the perception is different for both promotional strategies between general practitioners and specialists.

#### **Relationship between Ownership of the institution and Factors**

Table below clearly indicates that H (5) is rejected in the case of personal selling and promotional tools, as significance value is less than (0.05). Thus, ownership of the institution in which physicians are employed influence the importance attached especially to personal selling and promotional tools. For further analysis, it is important to look the t-test for equality of means. Consequently, it is understandable that there is a significance difference between the perception of government serving and private serving physicians with respect to personal selling and promotional tools since the p-values are (0.007) and (0.006) respectively.

**Table 9: Independent Samples Test between Ownership of institution and Factors**

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Sales Promotion	Equal variances assumed	3.348	.069	-1.242	168	.216	-.19023780	.15318995
Personal Selling	Equal variance as	.001	.977	-2.750	168	.007	-.41397933	.15054058
	Equal var. not as.			-2.752	167.929	.007	-.41397933	.15044531
Advertizing	Equal variances as.	.208	.649	-.619	168	.537	-.09517284	.15371618
Image	Equal variances as.	9.447	.002	1.739	168	.084	.26524621	.15252474
Educational promotional tools	Equal var. assum.	.584	.446	2.790	168	.006	.41975641	.15044533
	Equal var. not ass.			2.798	167.209	.006	.41975641	.15003343
Public relations	Equal variances as.	.002	.961	-.631	168	.529	-.09704142	.15370922

### Summary And Conclusions

The main purposes of this study were to explore the impact of pharmaceutical promotion strategies on prescribing behavior of physicians and determine promotional tools which are effective in influencing the prescribing behavior of physicians.

Factor analysis results show that physicians perceive different kinds of promotional tools under six factors i.e. Sales Promotion, personal selling, advertizing, sales promotion, educational tools and public relations.

The Sales Promotion strategy has been perceived to be the most important factor that influences physicians most while prescribing products of a particular company. Different scholars at different places and times have found either personal selling or sales promotion is the most important strategy to influence prescription behavior of physicians. The result of this study clearly revealed that a combination of Promotion strategy is the best way to influence physicians. This is a key contribution of this study, which will inform sales promotion practices.

The personal selling strategy has been perceived to be the second most important factor. It was found that perception of doctors towards this factor is independent of age, qualification, gender and marital status. Ownership of the

institution and practicing area of physicians in which they are employed influence the importance given to personal selling. Differences in life style of patients in the two demographic variables may provide a potential explanation for the greater importance accorded to personal selling.

The advertizing strategy has been perceived to be the third important influencing factor. The study indicates that perception of physicians on advertizing do not differ by demographic category. This suggested that pharmaceutical companies should design a single more effective way of advertizing targeting all physicians.

The sales promotion strategy has been perceived the fourth important factor in pharmaceutical promotion. Offering educational promotional tools has been the next important factor of pharmaceutical communication strategy.

### Recommendations

- The pharmaceutical companies should focus on using Sales Promotion in the form of free sample drugs, providing branded articles and gifts as marketing communications to effectively influence physicians prescribing behavior. Thus, the companies have to allocate budgets on Sales Promotion to achieve their marketing and sales objectives.

- Medical sales representatives of pharmaceutical companies should be provided with appropriate training that would enable Reps to act in such a way that the communication is desirable and appreciable by physicians.
- Physicians should give due attention to hear the medical sales representative ideas that may help to develop their professional competency in using and prescribing proper pharmaceuticals to appropriate treatment and examination of their patients.

### References

- AL ZAHRANI, H. S. 2014. The impact of pharmaceutical promotions on primary health care physician's prescribing behaviour in KAMC in central region. *International Journal of Medical Science and Public Health*, 3, 358-361.
- ARORA, U. & TANEJA, G. 2006. An analytical study of physicians behaviour towards marketing of pharmaceutical products. *Indian Journal of Marketing*, 36.
- DORFMAN, M. S. & CATHER, D. 2012. *Introduction to risk management and insurance*, Pearson Higher Ed.
- HMHACA 2014. *List of human pharmaceutical suppliers Addis Ababa*,: Healthcare Administration and Control Authority of Ethiopia
- ION, L. M. 2013. *QUALITATIVE STUDY ON PHYSICIANS' MOTIVATIONS AND DRUG PRESCRIBING BEHAVIOUR*. CES Working Papers, 29-40.
- JAYAKUMAR, P. 2008. Drug firms may stop freebies to doctors. *Business standard*. Available from URL: <http://www.businessstandard.com/india/storypage.php>.
- JAYAKUMAR, P. 2008. Drug firms may stop freebies to doctors. *Business standard*. Available from URL: <http://www.businessstandard.com/india/storypage.php>.
- KHAJURIA, D. K., DISHA, C., RAZDAN, R., MAHAPATRA, D. R. & BHAT, M. R. 2013. Comparative Evaluation of Zoledronic Acid, Alfacalcidol and Propranolol in Pharmacological Correction of Experimental Osteoporosis. *Latin American Journal of Pharmacy*, 32, 968-976.
- MANCHANDA, P., WITTINK, D. R., CHING, A., CLEANTHOUS, P., DING, M., DONG, X. J., LEEFLANG, P. S., MISRA, S., MIZIK, N. & NARAYANAN, S. 2005. Understanding firm, physician and consumer choice behavior in the pharmaceutical industry. *Marketing Letters*, 16, 293-308.
- MIKHAEL, E. M., ALHILALI, N., AL MUTAWALLI, B. Z. & TOMA, N. M. 2014. THE RELIABILITY AND ACCURACY OF MEDICAL AND PHARMACEUTICAL INFORMATION THAT WERE GIVEN BY DRUG COMPANIES THROUGH MEDICAL REPRESENTATIVES TO IRAQI PHYSICIANS. *Age (years)*, 45, 8.89.
- NARENDRAN, R. & NARENDRANATHAN, M. 2013. Influence of pharmaceutical marketing on prescription practices of physicians.
- SAUNDERS, M. N., SAUNDERS, M., LEWIS, P. & THORNHILL, A. 2011. *Research methods for business students*, 5/e, Pearson Education India.
- SHAMIMULHAQ, S., RAHEEM, A. R., NAWAZ, A., KHOSO, I. & VISHNU, P. 2014. Factors Influencing Prescription Behavior of Physicians. *The Pharma Innovation Journal*, ISSN, 2277-7695.
- SHARMA, L. K. 2012. A BEHAVIORAL STUDY OF PHYSICIANS TOWARDS MARKETING OF PHARMACEUTICAL PRODUCTS IN INDIAN MARKET. *Zenith International Journal of Business Economics & Management Research*, 2.
- SHERLOCK, P. 2010. *Pharmaceutical Marketing: A Comparison of Different Markets*.
- SIDDIQI, A., HUSSAIN, S., PARVEEN, G., MALIK, F., YASIN, F., AKRAM, T. S., HAMEED, A., RIAZ, H., SHAH, P. A. & SAEED, T. 2011. Relevant influence of promotional tools by pharmaceutical industry on prescribing behaviors of doctors: A cross-sectional survey in Pakistan. *African Journal of Pharmacy and Pharmacology*, 5, 1623-1632.