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Over-The-Counter Vs Prescription Medications-A Case Analysis On Customer Perceptions.

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ABSTRACT

The purpose of the current study is to find the factors determining consumer buying behaviour of drugs through doctor's prescription and OTC. The data has been collected from 300 respondents of Tiruchirapalli district and the collected data has been analyzed through descriptive and inferential statistics. The chi-square test revealed that there is a significant difference among the respondents in ranking their preferences for the purchase of drugs to various diseases through prescription and OTC. The regression analysis also measures the impact of various factors determining the buying behavior of customers through OTC and prescription. 64.4% of the customers and 52.8% of the customers were satisfied by purchasing the drugs through OTC and prescription respectively.

Keywords: Drugs, consumer behaviour, OTC, Prescription, doctor.

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INTRODUCTION

Every day people around the globe act differently, with respect to their health-related practices by means of self-care. In some cases, they go for self-medication also. Self-medication means usage of medicines by the individual own initiative or by means of the advice of the pharmacist and purchase of drugs through Over the Counter (OTC), World Health Organization guidelines, 2000.

The current study is important because Indian pharmaceuticals market is the 3rd largest in terms of volume and 13th largest in terms of value. Branded generics conquered the market for 70 to 80 percent. The Indian Pharmaceutical industry is expected to grow by fifteen percent by 2020 with a market size of US\$ 20 billion.

A number of studies conclude that the methods of treatment for various ailments are two dimensional, the first is self-medication and the second is seeking the guidance of a qualified medical practitioner. In self-medication, the ailment is judged by the patient themselves or seeks the help of a pharmacist in a drug store and take medicines based on their judgment of the ailment and the medicine for the same. In the second method, a qualified medical practitioner is always approached and diagnosis is made by the practitioner and drugs prescribed by them are taken for the ailment. The first one is referred to as OTC drugs and the second one is referred to as the prescription drugs. Research studies have indicated that self-medication is a common practice among the people in the developing countries. This is mainly because of two factors namely the lack of availability of professional healthcare facilities and high expenses involved in availing professional healthcare. So people obviously go for self-medication for their ailments.

But self-medication and OTC drugs have its own inbuilt hazards. The hazards include a wrong understanding of the ailment, wrong representation of the ailment to the pharmacist, wrong judgment of the pharmacist about the ailment and not dispensing the right medicines and dosages for the ailment. This may result either in other complications or delay in recovery from the ailment.

On the other side, prescription drugs are always backed by professional expertise and diagnosis. The drugs are sold by the pharmacy only based on prescription by a medical practitioner after proper diagnosis of the ailment. The medical practitioner interacts with the patient verifies the vital parameters relevant to the ailment through a check up, applies his professional skills and expertise and recommends drugs after diagnosis. In this model, the uncertainties regarding the ailments in the OTC drugs are completely eliminated. But globally, there is a practice of purchasing OTC drugs for some minor elements and some countries like U.S and Europe have listed drugs which are to be sold over the counter for some ailments and permitted to be sold in Super Markets, Gas Stations, and General Stores etc.,

LITERATURE REVIEW

Self-Medication means usage of medicines by a patient by their own initiative or on the advice of pharmacist instead of consulting a medical practitioner. Self-Medication is done by purchasing drugs over the counter (OTC) without a prescription from the doctor. Self-Medication is fairly common practices those both positive and negative aspects.

A number of studies reveal the problems of self-medication and OTC drugs. A study which [12] concluded that Over-the-counter (OTC) medicines are increasingly used for self-medication and it analyzed the perception of the general public towards OTC drugs. A study by [8] concentrated on number of factors including the nature of disease analysed consumer's decision towards OTC drugs. Another study which scrutinized [5] the socio economic factors, particularly age group of the customers is a major impacting factor and the younger people have a different perspective towards prescribed drugs and/or over-the-counter painkillers. [7] There are various drugs which have been shifted from prescribed mode to OTC.

There exist plenty of research articles and literatures [1] regarding the perception of older adults towards OTC drugs. Self-medication and OTC drugs purchase is a universal phenomenon and the socio-economic factor is also an important dimension that influences the purchase intention of OTC drugs. A study by [6] emphasized that majority of previous studies have analysed the problems of using OTC drug used in

Germany. [3] also analyzed the usage pattern of drugs for pain medications among patients through survey method. [9] Elucidated the purchase behavior of customer which varies with drugs and more than 100000 OTC products in convenience stores, gas stations, and supermarkets.

There also exists number of previous literature in understanding [4] the efficacy of over-the-counter drugs and the conclusions were made by using various statistical techniques. The studies related to the factors determining the best practices of the sale of drugs through OTC have gained attention [10].

Self-medication practices among older consumers [2] and socioeconomic differences of consumers [11] is a major factor in determining the overall use of prescription and OTC drugs among adolescents.

PROBLEM STATEMENT AND METHODOLOGY

The study is an attempt to create awareness about the indiscriminate purchase of Drugs for different ailments and also the factors that influence the purchase behavior of over-the-counter drugs versus prescription drugs. The scope and objectives of the current study includes:

- To study the buying patterns of drugs by the consumer for various health problems directly from the pharmacy and based on a prescription from a doctor.
- To compare the percentage and rank the buying pattern and misuse level of the customer over the counter across a spectrum of health problems.

The current study is based on the MBA project for a period of two months (i.e.) March – April 2016. The data related to the study is collected through structured questionnaires from customers who are visiting the pharmacy stores of Tiruchirappalli. The sampling framework for the current study is based on the consumer's who were purchasing drugs from various pharmacies at Tiruchirappalli and the sample size is 300 customers. The collected data has been analyzed using the software statistical package for the social science (SPSS) version 16.0 and various statistical tools like descriptive statistics, Friedman means rank test, One-way ANOVA and regression analysis has been used for analysing the data.

DEMOGRAPHIC PROFILE OF RESPONDENTS

Among the respondents 54.7% were in the age group between 25 to 44 years, 24.7% of the respondents were in the age group between 16 to 24, 12.0% of the respondents were in the age group between 45 to 64 years, and 8.7% of the respondents were above 65 years of age. Among 300 respondents 56% of the respondents were male and 44% of the respondents were female. 43.3% of the respondents were holding under graduation degree, 25.3% of the respondents possessed post graduation degree. 43.3% of respondents were holding job in private sector salaried class and 20.0% of respondents are earning less than Rs.10000 per month, 38.0% of respondents are earning between Rs.10000 to Rs.20000 per month

MAJOR RESULTS AND DISCUSSIONS

The data collected from 300 customers were analyzed and the major results were given below:

Table 1: Friedman Mean rank test for various diseases and customer drug purchase pattern

Various diseases	Through OTC			Through the Prescription		
	Mean Rank	Rank	Std. Deviation	Mean Rank	Rank	Std. Deviation
for Fever	7.07	2	1.50019	12.26	17	1.52627
for headache	6.65	1	1.43527	13.42	19	1.40749
for dysentery	8.00	4	1.47607	11.92	14	1.30393
for vomiting	8.27	6	1.42361	12.16	16	1.32977
for back pain	9.39	8	1.33606	11.61	13	1.25290

for sprain	8.26	5	1.36660	12.00	15	1.31454
for cold cough	7.62	3	1.44564	13.66	20	1.47293
for body pain	8.50	7	1.44434	12.64	18	1.32775
for joint pain	10.21	9	1.39236	10.82	12	1.30614
for stomachache	10.75	10	1.72104	10.05	11	1.01331
for blood pressure	12.10	12	1.08727	8.85	4	.72849
for diabetes	12.65	16	1.06026	8.91	7	.69156
for asthma	12.42	13	1.14358	8.82	3	.81650
for thyroid	12.50	14	1.13179	8.88	5	.69578
for typhoid	12.81	19	4.09778	8.48	1	.69370
for chickenpox	12.99	20	.95634	8.95	8	.83227
for viral fever	11.86	11	1.19327	8.65	2	.69447
for vertigos	12.68	17	1.12409	9.68	10	.83453
for osteoporosis	12.51	15	1.07158	8.90	6	.78707
for anemia	12.74	18	.89202	9.35	9	.81323
Chi-Square 689.887; df:19; Asymp. Sig. :0.000				Chi-Square: 457.765; df: 19; Asymp. Sig. : 0.000		

From the above table, it is concluded through the Fried mean rank test, the customer's perception for drug purchase through OTC is for a headache, since its mean rank is 6.65 .The second important disease is fever and the mean rank is 7.07 .The cold cough with a mean rank of 7.62, dysentery with a mean rank of 8.00, sprain with a mean rank of 8.26 has been ranked third, fourth and fifth respective positions in drug purchase through OTC. It is also worthy to note that Chi-square value (689.887) is significant and hence it is concluded that there is a significant difference in the respondents preference in ranking their preferences for the purchase of drugs to diseases through OTC.

It is concluded through the Fried mean rank test, the customer's perception for drug purchase through the Prescription is for typhoid, since its mean rank is 8.48. The second important disease where drugs are purchased is viral fever and the mean rank is 8.65. The diseases asthma with a mean rank of 8.82, blood pressure with a mean rank of 8.85, thyroid with a mean rank of 8.88 has been ranked third, fourth and fifth in drug purchase through the Prescription. It is also important to make a note that Chi-square value (457.765) is significant and hence, it is concluded that there is a significant difference among the respondents in ranking their preferences for the purchase of drugs to various diseases through the Prescription.

Then regression analysis was carried out to find the impact of independent variables determining the reasons for OTC Drug purchase by the consumers towards the dependent variable customer's satisfaction. All the hypothesized relationship between independent and dependent variable was found to be significant which is presented in table.2 (2a &2b).

Table 2: Regression analysis for Variables determining the reasons for OTC Drug purchase by the consumers

2.a Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	0.802 ^a	0.644	0.639	0.73891	133.299	0.000 ^a
a. Predictors: (Constant), Pharmacist is a source of advice ,Minor problems can be solved easily ,Cannot afford to go doctor ,As Effective as Doctor prescription						

2.b Coefficients								
Reasons for OTC Drug purchase		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.696	.147	-	4.747	.000		
	Pharmacist is a source of advice	.427	.047	.419	9.097	.000	.568	1.759
	Minor problems can be solved easily	.254	.039	.301	6.537	.000	.570	1.756
	Cannot afford to go doctor.	.303	.042	.321	7.176	.000	.603	1.660
	As Effective as Doctor prescription	.117	.043	.116	2.724	.007	.666	1.502
Dependent Variable: OTC Satisfaction								

In the regression analysis, all the factors determining the reasons for Drug purchase through OTC are significantly influencing the customer satisfaction. R value represents the simple correlation between the factors. The correlation value indicates a quite high degree of correlation between factors determining the reasons for Drug purchase through OTC and customer satisfaction ($r = 0.802$). The R^2 column indicates how much of the total variation in the dependent variable (customer satisfaction) can be explained by the independent variable (reasons for Drug purchase through OTC) and here it is ($R^2 = 64.4\%$) a good influence. Four factors of Pharmacist is a source of advice, Minor problems can be solved easily, cannot afford to go the doctor and as effective as Doctor's prescription towards customer satisfaction have been explained in the model with much more statistical significance. Beta coefficients for the regression model provide necessary information to predict the level of customer satisfaction through OTC purchase. In the regression model in the table.2, Pharmacist is a source of advice ($B = 0.427$, $\text{Sig.} < .001$) and Minor problems can be solved easily ($B = 0.254$, $\text{Sig.} < .001$), Cannot afford to go doctor ($B = .303$, $\text{Sig.} < .001$) are the major contributing factors. The regression model fit is,

customer satisfaction through OTC purchase = Constant+(0.427)Pharmacist is a source of advice +(0.254) Minor problems can be solved easily +(0.303) Cannot afford to go, doctor, +(0.117) As Effective as Doctor prescription

Table 3: Regression analysis for factors determining the reasons for prescription based drugs Drug purchase by the consumers

3.a Model Summary						
Model	R	R Square	Adjusted Square	Std. Error of the Estimate	F	Sig.
1	.727 ^a	.528	.513	.47633	35.474	.000 ^a
a. Predictors: (Constant), Good value is transferred from doctor, Perfectly safe to life ,Very important to solve all medical problems, Doctor's advice is advisable						

3.b Coefficients								
Reasons for prescription drugs		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.473	.101		4.692	.000		
	Good value is transferred from doctor	.168	.053	.189	3.184	.002	.470	2.126
	Perfectly safe to life	.078	.038	.102	2.050	.041	.664	1.506

	Very imperative to solve all medical problems	.300	.047	.342	6.332	.000	.566	1.768
	Doctor's advice is desirable	.254	.041	.321	6.193	.000	.616	1.623
a. Dependent Variable: Prescription Satisfaction								

In the regression analysis, all the factors determining the reasons for Drug purchase through doctor's prescription significantly influence the customer satisfaction. The correlation value indicates a quite high degree of correlation between factors determining the reasons for Drug purchase through OTC and customer satisfaction ($r = .727a$). The R^2 column indicates how much of the total variation in the dependent variable (customer satisfaction) can be explained by the independent variable (reasons for Drug purchase by prescription) and here it is ($R^2 = 64.4\%$) a good influence. Beta coefficients for the regression model provide necessary information to predict the level of customer satisfaction through purchase by prescription. In the regression model in the table.2, Good value is transferred from doctor ($B = 0.168$, Sig. $< .001$), Very important to solve all medical problems ($B = 0.300$, Sig. $< .001$), Doctor's advice is advisable ($B = 0.254$, Sig. $< .001$) are the major contributing factors shown in table 3(3a & 3b)

The regression model fit is,

Customer satisfaction through OTC purchase=

Constant + (0.168) Good value is transferred from doctor + (0.078) perfectly safe to life + (0.300) Very important to solve all medical problems+ (0.254) Doctor's advice is advisable

Variance inflation factors (VIF) in table 2 and 3 confirms the measure of variances estimated by regression coefficient for determining the consumer behavior for the purchase of drugs through OTC and based on prescription based are not linearly related. The VIF in table 2 and 3 confirms the standard of between 1 and 10. So it is concluded that there is no multi-collinearity.

CONCLUSION

Even though the OTC and prescription based customer perception has been researched widely researched, it is essential to study for the Indian pharmaceutical industry because of the following reasons:

- Huge market potential
- Huge population
- Unexplored rural markets
- Regulatory measure

India currently ranks eleventh place in OTC market and it estimated that it reach eighth of ninth place in five years. Most of the customers are aware that the medicines are conveniently available in pharmacy for the minor disease. The current study concludes that 64.4% agree about their purchase in OTC and they considered pharmacist as a source of advice. The Organization of Pharmaceutical Producers of India (OPPI) is also working for developing guidelines and regulation for self-medication. Even future research could be carried out comparing consumer behavior for herbal, allopath and ayurveda drugs. The study can also extend towards urban and rural consumers.

The research based study and decisions [13] are considered to be important because the perception of customers towards prescribed drugs and OTC drugs are analyzed. This study is very useful to government policy makers, Pharmaceutical Company, the general public and the Doctors.

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