

Impact of Different Issues on Various 'Over the Counter' Drugs in Pharmaceutical Sector of Rural West Bengal: An Empirical Study

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Article History

Received: 13.11.2017

Accepted: 18.11.2017

Published: 30.11.2017

DOI:

10.36347/sjahss.2017.v05i11.023



Abstract: Medicines are one of the most essential necessities today right along with food, clothing and shelter. The pharmaceutical industry is one of the most influential industries of India today as because the products of this sector is critical to the common people. The absence of medications can be even fatal to the patients so there is a huge potential in the market for this segment of products. Medications can be classified broadly under Over the Counter Drugs and Prescription drugs. Over the Counter drugs are generally obtained by the patients without a doctor's prescription. As for Prescription Drugs, as per the namesake, these medications can only be obtained by the patients with a doctor's prescription. So, it can be safely assumed that the therapeutic index of the Over the Counter Drugs is higher than that of Prescription drugs. This, in turn, reduces the chances of prominent side effects that might prove to be fatal for the patients and because of this reason they are sold without consulting a doctor previously. These medications are used mainly in case of very common diseases like common flu, dysentery, inflammation due to an injury, etc. This paper delves into the present pharmaceutical Over the Counter (OTC) Drugs market and tries to point out the factors that directly or indirectly influence the market. The segmented market that has been taken under consideration is the rural market as because the majority of the Indian population resides in the rural parts of India. However, the healthcare infrastructure is quite underdeveloped in the rural regions and the people solely depend on these OTC drugs for their therapy. The findings emphasizes the role and impact of doctors, patients, pharmacists and present economic scenario related issues on various OTC drugs in pharmaceutical sector of rural West Bengal. This paper also helps to pinpoint the industrial and societal implications.

Keywords: Over the Counter Drugs, Pharmaceutical Sector, and Rural West Bengal, Industrial and Societal Implications

INTRODUCTION

The population of India is on an exponential rise due to the increasing globalisation and urbanisation. Along with it, a trend is being observed of that of various new strains of bacteria and viruses, which are evolving at a rapid pace in order to cause havoc in the general masses. Medicines and therapy are the only solutions to tackle this problem as of now. Medications are generally classified under over the counter drugs and prescription drugs. Prescription drugs are the kinds of medicines that can only be brought if and only if they are prescribed by a doctor. However, Over the Counter drugs, commonly known as OTC medications are the type of drugs that can be bought by the patients without the doctor's prescription. OTC drugs provide relief to patients suffering from very common ailments like dysentery, common cold, fever, gastric distress,

inflammation due to an injury, etc. According to a study, an astonishing fact was revealed that only 36 doctors are available to serve one lakh of the Indian population as compared to 130 in China. The rural areas are especially hit as the number of medically trained professionals is next to nil. As a result, many epidemics spread out from the rural areas and it becomes very hard to control them [1]. As per WHO standards, 1:1000 is the standard doctor patient ratio. However, as per the recent statistics submitted to the Lok Sabha in the year 2017, it is evident that the doctor patient ratio in India is 0.62:1000 under the assumption that all these doctors are active in their practice [2]. Under such dire circumstances, the healthcare burden needs to be shared until and unless the healthcare infrastructure is developed further. The OTC drugs can serve as a boon to the common people of India when doctors are not

available in the rural regions. These drugs if consumed under the right circumstances could lead to providing relief to the patients until and unless consulting a doctor becomes feasible to the patients. Over the Counter drugs are especially important as it will not be possible for the doctors to cater to the needs of each and every patient. If the patients can learn the proper way of using these Over the Counter drugs, then it may reduce a lot of burden from the medical professionals. There is no proper protocol for selling OTC drugs in India. As a result, the Central Drugs Standard Control Organisation (CDSCO) is likely to bring about a change in this aspect. This organisation aims at introducing a separate schedule for OTC drugs in the Constitution of India. This will help the pharmacists to identify the OTC drugs with more clarity and then sell them accordingly. This will further move on to solve the disputes which arises due to these ambiguous problems. India is a developing country and the majority of the population resides in the rural and semi-rural belt of India wherein the healthcare infrastructure is lagging behind on certain aspects. As a result, the people are deprived from getting the basic healthcare rights. If the pharmacists can share a bit of the healthcare burden from that of the doctors, then this problem can be solved for the time being. OTC drugs can become the first line of therapy for the patients who reside in the rural belt. This paper aims at highlighting these issues and tries to come up with a plausible solution which may prove to be beneficial to the patients in the long run. This will also buy the government some time to look into this matter seriously and develop means to tackle this issue from the very core.

LITERATURE REVIEW

A detailed study was done regarding the OTC Pharmaceutical market of the Rural West Bengal. Some astonishing facts came up during this study. It is said that the majority of the Indian population resides in the rural belt. However, the healthcare of these parts of India is underdeveloped. As a result, the common people have to face many problems with regards to any kind of quality healthcare services that they have a right to receive. They have to traverse hundreds of kilometres to order to receive proper medical attention. Moreover, the doctor patient ratio is very poor especially in the rural belt. It is about 0.62:1000 [2]. OTC Drugs or Over the Counter Medications is one of the most frequently used drugs. They are a classification of medicines which can be bought without a prescription from a doctor. The common people and especially the younger generation find it cumbersome to visit a doctor for simple ailments like fever, headache, etc. As a result, there is a tendency amongst the population to self-medicate. Analgesics and Antipyretics are the most common OTC drugs that are used currently. A study conducted in Bangalore, India, shows that majority of the sample population was aware of the OTC drugs and

self-medication was practiced amongst them. The study was carried out amongst the first year medical students. 82.6% of the sample population had prior knowledge of OTC drugs. The most common source for gathering knowledge about the OTC drugs are from media advertisements (32.3%) and from text books and journals. 81.5 % of the population was aware of referring to the labels of the medications in order to get the right procedure of self-medicating so that no harm is inflicted amongst them in the near future [3]. People residing in the rural regions often have to travel to the cities to seek proper treatment. The number of government hospitals is very less and as a result the number of beds in a hospital is limited. The probability of availing a facility in a government hospital and to avail quality healthcare services from the government hospitals proves to be too cumbersome for the patients. Thus, the patients have to seek treatment from private hospitals as because the disease has to be treated. The costs involved in these situations are huge and most of the people do not have health insurances. This in turn leads to great monetary burden for the patient as well as his family leading them to a state of de-motivation which leads them to self-medicate instead of consulting a doctor. In case of emergencies, the mortality rate is observed to be increasing at a rapid pace as the diagnosis of the particular disease or disorder is not done at the proper time. Hence, by the time the patient receives the required treatment from the medical professionals, it often becomes too late for the patient. In case of government hospitals and local nursing homes, nosocomial infections are a major threat affecting the patients. This is a major challenge that the authorities need to overcome due to inadequate cleanliness being maintained in the various healthcare centres. Highly communicable diseases such as Tuberculosis, Pneumonia, Cholera, etc, have a chance to infect the population who are in contact with these healthcare centres. A detailed project was conducted in West Bengal which aimed at finding out the Unqualified Medical Practitioners, referred to as the UMP's(Unregistered Medical Practitioners) as compared to the Registered Medical Practitioners (RMP's) in the rural regions of West Bengal. This study was conducted through 150+ villages across West Bengal. An astonishing fact was revealed that the UMP's(Unregistered Medical Practitioners) are present in the rural districts where they can dispense medicines to the needful. These UMP's(Unregistered Medical Practitioners) especially give OTC drugs in order to increase the pharmacist's sale in those areas in order to increase their profit. Some instances showcase the fact that even though the patient do not need to take a particular OTC drugs, especially the antibiotics, but the UMP's(Unregistered Medical Practitioners) do give the medications to the drugs to the patients in order to improve the sales of the pharmacists shops. Also, on the other hand, these people are not suitable to diagnose

any underlying sickness within the patients. Thus, these conditions remain untreated for a long time leading the patient to arrive at a critical condition [5]. In order to further increase the profits of the pharmacist's shops, the UMP's (Unregistered Medical Practitioners) prescribe the highly expensive drugs to the patients. The patients, who are lacking in their literacy, have no choice but to buy such expensive drugs from the pharmacies. This might prove as a hindrance in the proper treatment of the patients as wrong therapy may prove to be detrimental to the current condition of the patient. Commonly the analgesic drugs and antipyretics are categorised under the list of drugs that can be purchased without a doctor's permission. However, certain antibiotics are also sold under this banner to treat certain superficial to moderate infections. The study was conducted in the Hassan district of Karnataka. An open ended questionnaire was prepared and 160 government doctors were randomly selected as the sample population. 53% of the doctors were reported to self-medicate themselves with antibiotics. 73.3% of the population said that the major problems from which they had been suffering and for which they were inclined to self-medicate were mainly respiratory problems. This may encapsulate problems like common cold and sore throats. The most common antibiotic that was used amongst the sample population was amoxicillin (40%). However, there is a critical concern that was pointed out in this study. Only 26.8% of the sample population completed the full course of the antibiotics. This is a shocking discovery as this indicates prevalence in the rise of antibiotic resistance which is a growing concern in the society [4]. This study looks at the use of the Over the Counter medicines in the urban population. The respondents of this study were the pharmacists and the shopkeepers as well as the patients. It was seen that out of the number of Over the Counter drugs sold by the pharmacists, 56.7 percent of the drugs are analgesics, 15.8 per cent are antibiotics, 5.6 per cent are tranquilizers, 8.6 per cent are antihistamines, 4.7 per cent are antipyretics, 2.3 per cent are vitamins, 3.9 per cent are herbal concoctions, and the rest 2.3 per cent forms other miscellaneous drugs. The choice of deciding the type of Over the Counter drugs that is to be given to the patients is determined either by the consumer itself (73.2 %) or by the pharmacist or shopkeeper present at that time (26.7%). The pharmacists analysed the safety profile of the drugs that are dispensed on a daily basis and it was found out that though the medications like analgesics, antipyretics, antihistamines, etc are safe to use but a consultation of a medical practitioner becomes mandatory from time to time in order to detect an underlying cause if there is. Also, the clinical conditions of the consumers should be obtained by the pharmacists before dispensing Over the Counter medications in order to detect any possible side effects of a particular medication that the patient may develop. Also, it was

seen that the consumers purchase Over the Counter drugs based on their brand names. The marketing of this category of drugs is very important for this very purpose as marketing these drugs can position the product in the minds of the people. In most of the cases, the consumer is not aware of the ingredients used in the particular medication. The study has helped to substantiate the fact that there is an increasing trend of the irrational use of Over the Counter medications as many of the medicines are not used according to their intended action [6]. This study had a focal point on assessing the safety and efficacy level of the people purchasing OTC drugs. The study was carried out in the provinces of Kerala. The study was carried out over a period of 8 months and a structured questionnaire was used to collect quantitative data. It was gathered from the study that most of the customers who went for OTC drugs were motivated to purchase them based on some previous prescription of the same ailment that they were facing currently. The choice of the OTC medication was also influenced by the previous usage of the same drug (50.39 %) and recommendations by the pharmacists present at that particular time (23.41%). Common people do have a tendency of stocking drugs in their homes for very common diseases. Amongst these medications, 62.3 per cent of the medications accounted for pain killers, 59.12 per cent were for cough remedies followed by anti-pyretic or fever medications which comprises of 46.82 per cent of the total sample population. OTC drugs needs to be taken in the right manner. As a result, the companies which market these products use a drug label to list out the procedure of using the drugs as well as whether the patients should expect any side effects to that particular medication. 77 per cent of the total sample population said that they follow the given instructions listed on the label before consuming the medications or even administering the medications to any of their family members. 6.74 per cent of the sample population said that they rarely follow the given instructions before taking the medications and 1.19 per cent said that they never follow the instructions. 5.95 per cent reported to have abused the drugs in any manner as in taking the drugs with alcohol or with any other medications that is not suitable to be taken with that particular drug. 4.76 per cent of the population also reported an over dose of the particular drug. The patients and the customers were very aware of the fact that the continuous use of the medications can be held responsible for developing a kind of dependency or addiction which may be very harmful in the long run. Also, in case of antibiotics, irrational use can lead to developing a resistance against that particular bacterial strain [7]. People residing in the rural regions lead a very sedentary lifestyle. They find it cumbersome to travel to cities often for seeking treatment. So, until and unless the ailment becomes too problematic for the patient so much so that it cannot be ignored any further, the patients do not seek any

doctor's advice. They keep treating the symptoms with OTC drugs. In the end, this practice may prove fatal to the patient. As for example, in case of chest pain which is medically referred to as angina, there is an OTC drug called Sorbitrate. But the chest pain of the patient might be a symptom for a Heart attack (Myocardial Infarction). If the patient tries to treat it by Sorbitrate without visiting the hospital, it may be fatal to the patient. Sometimes the patients also develop a physical dependence towards the OTC drugs which is more commonly referred to as addiction. As for example, an OTC drug for Disprin is used as a pain killer or analgesic in case of headaches. However, if a patient continues to use these drugs even at the slightest of pains over a long period of time, they may develop an addiction for these drugs. After a certain time, the body will develop resistance to these drugs and they will cease to be of any utility to the patient. Pharmacists form a very important part in dispensing OTC drugs. This study focuses on the practice of the community pharmacists. This study categorically analyses the various facilities and services being provided by the community pharmacists. The study was carried in the state of Kerala over a period of 6 months. The pharmacists who participated in the study were randomly selected. The study was restricted in the urban areas. A study was carried out on the type of pharmacy. 93.65 per cent of the pharmacies were found to be independent pharmacies. 1.58 per cent was chain pharmacies, 1.58 per cent were hospital attached community pharmacies and the last 3.17 per cent of the pharmacies were society owned pharmacies. It was seen that a majority of the pharmacists were diploma holders with an average working time of about 10 hours. They receive an average salary of Rs. 8,000. For critical drugs, for example, narcotics, the medicines were not dispensed without the help of a prescription. However, sufficient measures were not taken for purchase of the medicines with the same prescription again and again. No medical history of the patients were recorded and stored for future use. 5.29 per cent of the total sample population hinted at providing patient counselling during the time of giving the medication. Adverse Drug Reaction of certain OTC's was not notified to the patients at the time of purchasing [8]. Due to the fact that no documentation is maintained in the pharmacies, no proper counselling can be given to the patients in case they need them. As already pointed out facts and figures revealed earlier, the doctors are overburdened so it is up to the pharmacists to properly counsel the patients on the course of medications that they should receive. They could be of immense help to the patients in case of OTC medications that they might take to treat superficial wounds or ailments that do not require the supervision of the doctors immediately. All of the issues and challenges highlighted in the above pages give a view on the overall condition of the Over the Counter drug market in India. It focuses on three players who

are responsible for marketing this kind of drugs in the market: Doctors, Pharmacists and the end users or customers. Thus, in order to find out the impact of these challenges, geographical segmentation needs to be done to study each of these problems in details.

Issue of Over the Counter Drugs in Rural India

Segmentation of the market is done on a geographical basis. Generally, the market is divided into rural and urban. This study will solely focus on the issues and challenges dealt by the common population with regards to Over the Counter Medications. The study was restricted to the rural region as compared to the urban regions. 400 respondents were selected amongst the medical or nursing fraternity. According to the study, the major ailments that warranted self-medication were headache, cough and cold, fever, generalised weakness, acidity, dysmenorrhoea and sleep disturbances. The drugs are obtained through various sources amongst which majority of them are obtained from various pharmacies. Some of them are also obtained from various friends and family members and other sources include other healthcare communities and health centres. In most pharmacies, the drugs are obtained by buying the drug through the usage of the brand names, asking the pharmacist itself to give the medicine based on the symptoms and also from showing the old prescriptions of the doctors to the pharmacists. The reasons stated by the respondents for not going to consult the doctors prior to self-medication includes the time consumption which will be very difficult to invest at a given time due to the busy schedule of the people. Along with these, the consultation fees and most common ailments like common cold, etc, forms most common reasons for not visiting the doctors. This further raises complications amongst the patients if there is an underlying critical illness which is not diagnosed at the proper time which may further lead the patient to a lethal condition [9]. In the rural regions, an increasing number of fake medical professionals are seen to serve the population. Many of the pharmacies being run in these regions lack a proper pharmacist license. Anybody with an inadequate medical background runs these stores with a basic knowledge about medicines. However, in case of certain diseases and disorders which are very uncommon, the pharmacists fail to assist the patients with the right drug, which might consequently prove to be fatal for the patient. The people living in the rural areas live a sedentary lifestyle. They live within the boundaries of their respective villages and seldom travel to anywhere else. Only in case of certain emergencies, they choose to travel to a good hospital to receive treatment. But, in most of the cases it becomes too late for the patient as diagnosis was done at the proper time. Most of the diseases become chronic and it often proves fatal for the patient. Thus, many diseases like cardiovascular disorders, cancer, nephritic disorders,

diabetes, etc, are claiming the lives of many innocent people across the villages. Price is a very important factor as most of the population cannot afford to receive treatment from the private hospitals and nursing homes. The price is being regulated by public hospitals where the common people can receive treatment without worrying about the costs. But the beds in such places are limited and it is very difficult to get hold of them at the time of requirement. The resourced in such hospitals are overburdened which leads to a fall in the quality of the services.

Objectives

- To dig out the various issues of the ‘Over the Counter’ drugs that is affecting the rural mass of India.
- To understand the role of doctors, patients, pharmacists and present economic scenario in

the creation of the issues of the ‘Over the Counter’ market.

- To find out the extent of the impact of the issues on various OTC drugs in pharmaceutical sector of rural West Bengal.

Hypothesis

H₁: There is no significant difference between ‘Rural Economic Scenario’ and ‘OTC Pharmaceutical Market of Rural West Bengal’.

H₂: There is no significant difference between ‘Doctor’s Intention’ and ‘OTC Pharmaceutical Market of Rural West Bengal’.

H₃: There is no significant difference between ‘Patient’s Awareness & Lifestyle’ and ‘OTC Pharmaceutical Market of Rural West Bengal’.

H₄: There is no significant difference between ‘Pharmacist’s Credibility & Intention’ and ‘OTC Pharmaceutical Market of Rural West Bengal’.

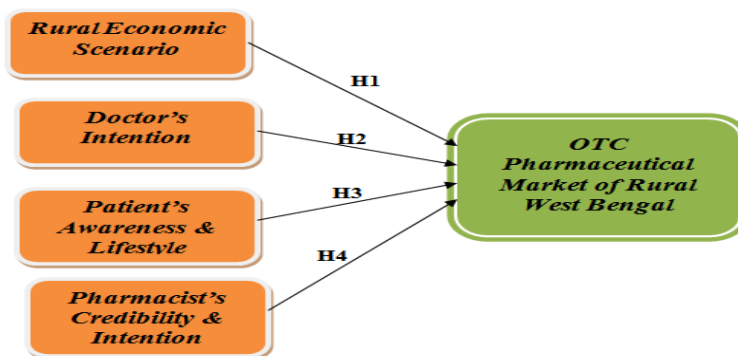


Fig-1: Hypothesized Research Model

RESEARCH METHODOLOGY

Here, both exploratory and conclusive research design have been used in this study. Exploratory research was executed by collecting secondary data through literature survey with ‘insight stimulating’ examples. Conclusive research was executed by testing hypotheses with the help of primary data. For collecting primary data, structure questionnaires were distributed to 400 respondents and 15 different variables were selected under 4 factors to test the influences of different issues on various ‘Over the Counter’ drugs in pharmaceutical sector of rural West Bengal. The survey

period of this study was 10th June, 2017 to 25th September, 2017. The questionnaire responses were counted by assigning the following weights (5-point Likert Scale: Very satisfied-5, Satisfied-4, Neutral-3, Dissatisfied-4, Very Dissatisfied-5) depending on the preference level of the respondents. ‘Two-Stage Cluster Sampling’ was used as the Sampling Technique. Here the sample areas were selected by clustering method as dividing rural West Bengal to many clusters.

RESULT & ANALYSIS

Table-1: Reliability Statistics

Cronbach's Alpha	N of Items
.798	15

As Cronbach Alpha value is greater than 0.70, the reliability is high between different variables on 5-point Likert Scale.

Table-2: Model Summary (Regression Model: OTC Pharmaceutical Market of Rural West Bengal as Dependent variable)

R	R Square	Adjusted R Square	Std. Error of the Estimate	F-Value	Sig.
.754 ^a	.569	.564	.470	119.577	<.000 ^a
a. Predictors: (Constant), Pharmacist's Credibility & Intention, Rural Economic Scenario, Doctor's Intention, Patient's Awareness & Lifestyle					
b. Dependent Variable: OTC Pharmaceutical Market					

As ANOVA Value (F-value) which is less than 0.001 is significant and model summary indicates a good R-Square value, it can be summarized that the

regression model is best fitted to describe the dependent variable by the help of independent variables.

Table-3: Model Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t-Value	Sig.
		B	Std. Error	Beta		
1	(Constant)	.454	.159		2.848	.005*(S)
	Rural Economic Scenario	.149	.023	.226	6.477	.000*(S)
	Doctor's Intention	.219	.029	.267	7.496	.000*(S)
	Patient's Awareness & Lifestyle	.283	.033	.322	8.592	.000*(S)
	Pharmacist's Credibility & Intention	.293	.028	.402	10.608	.000*(S)

a. Dependent Variable: OTC Pharmaceutical Market

*(S): Significant at 1% level

The above table shows that all independent variables are significant for the model.

Model Specification

The Multiple Linear Regression Model is specified below:

$$*Y \text{ (OTC Pharmaceutical Market)} = .454 + .149*(\text{Rural Economic Scenario}) + .219*(\text{Doctor's Intention}) + .283*(\text{Patient's Awareness \& Lifestyle}) + .293*(\text{Pharmacist's Credibility \& Intention}).$$

Hypothesis Testing & Findings

H₁: There is no significant difference between 'Rural Economic Scenario' and 'OTC Pharmaceutical Market of Rural West Bengal'.

From the t (6.477) and P values (which is less than 0.01), it is observed that 'Rural Economic Scenario' is significant explanatory variable for 'OTC Pharmaceutical Market of Rural West Bengal'. Also it has positive coefficient (+0.149) in the regression. Thus, 'Rural Economic Scenario' is positively related with 'OTC Pharmaceutical Market of Rural West Bengal'. It establishes a relationship between the two factors of rural economic scenario with that of the OTC market of rural West Bengal. The more positive influence has a good impact for the pharmaceutical industry as the increment in various problems can

increase the sale of drugs. It might be referred to as inversely proportional effects between the two.

H₂: There is no significant difference between 'Doctor's Intention' and 'OTC Pharmaceutical Market of Rural West Bengal'.

From the t-value (7.496) and P values (<0.001), it is observed that 'Doctor's Intention' is significant explanatory variable for 'OTC Pharmaceutical Market of Rural West Bengal'. Also it has positive coefficient (+0.219) in the regression. Thus, 'Doctor's Intention' is positively related with 'OTC Pharmaceutical Market of Rural West Bengal'. Doctors are the customers for the pharmaceutical market as they influence the patients to take a particular kind of drug. Even for OTC medications, the patients follow the doctor's prescription from their previous visit if the concern is pertaining to the same previous problem [7]. Thus, the doctors can cause the demand for a particular drug to shoot up or to crash down depending on the medications they prescribe.

H₃: There is no significant difference between 'Patient's Awareness & Lifestyle' and 'OTC Pharmaceutical Market of Rural West Bengal'.

From the t-value (8.592) and P values (<0.001), it is observed that 'Patient's Awareness &

Lifestyle' is significant explanatory variable for 'OTC Pharmaceutical Market of Rural West Bengal'. Also it has positive coefficient (+0.283) in the regression. Thus, 'Patient's Awareness & Lifestyle' is positively related with 'OTC Pharmaceutical Market of Rural West Bengal'. Patient awareness and lifestyle is playing a pivotal role in creating the recent trends of evolution of the various diseases and disorders. The people are increasingly becoming dependable on the medications more and more on a number of accounts. The quality of food intake, the number of times meals are being taken by a person, gap time between the meals, etc. are the crucial factors that are decreasing the immunity level of the community. This further aggravates the health of the people thus manifesting it as various diseases in the patients who have decreased immunity.

H₄: There is no significant difference between 'Pharmacist's Credibility & Intention' and 'OTC Pharmaceutical Market of Rural West Bengal'.

From the t-value (10.608) and P values (<0.001), it is observed that 'Pharmacist's Credibility &

Intention' is significant explanatory variable for 'OTC Pharmaceutical Market of Rural West Bengal'. Also it has positive coefficient (+0.293) in the regression. Thus, 'Pharmacist's Credibility & Intention' is positively related with 'OTC Pharmaceutical Market of Rural West Bengal'. Especially in case of OTC medications, most of the patients tend to prefer asking the pharmacist as opposed to visiting a doctor for saving time and money [6]. They form an interface between the doctors and the patients. As a result, they can advise the patients for the use of some particular drugs or against the use of some particular drugs. This ultimately leads to a boost in the pharmaceutical industry as the sales shoots up drastically.

Multicollinearity Assessment

As per Zuur *et al.* [10], VIF values (variance inflation factor) which indicate multicollinearity, must be less than 3 for acceptability range. Here, it has been clarified through the following tables (Table No. 4) that all VIF values are within the range which proves that the variables are multicollinearity-free.

Table-4: Collinearity Statistics when 'OTC Pharmaceutical Market' as dependent variable

	Collinearity Statistics	
	Tolerance	VIF
Rural Economic Scenario	.980	1.021
Doctor's Intention	.938	1.066
Patient's Awareness & Lifestyle	.847	1.181
Pharmacist's Credibility & Intention	.827	1.209

Implications of the Study

The implications of this study can be divided into two parts: the societal implications and the industrial implications. Both of the implications have their pros and cons which have been described in details in the following pages.

- **Industrial Implications**

As it has been already established in the previous pages, the four factors selected for the study that is, Rural Economic Scenario, Doctor's intention, Patient's awareness and lifestyle and Pharmacists Credibility and Intention positively influence the OTC Pharmaceutical market of the rural West Bengal. The sale of the various drugs because of the increasing trend of the people suffering from various diseases is on a rise. Because of the increasing number of common diseases like Common cold, Swine flu, Gastric problems, etc, people are forced to rely on OTC drugs on short term notice. If the sales increase, the productivity of the industry shoots up, thus marking a good position of the industry in the global market [11]. Doctor's intentions also matter a lot as most of the people follow the earlier prescriptions of the doctors in order to immediately treat their ailments. As a result, it

is in the hands of the doctors to suggest a particular kind of brand drug to boost up their sales. This strategy on the industrial front can work miracles if implemented properly as it gives a backhand support to the patients to follow the instructions of a doctor. The patient's lifestyle also positively influences the OTC market of the rural West Bengal. One simple example is that of the altering food habits of the population where instead of healthy and nutritious food, too much of junk food is consumed. This is mainly observed in the younger and working generation. This may be so because of their weird working hours. However, this leads to increased gastric distress, thus, creating dependence for the OTC drugs like Omez D, Rantac, Zintac, etc. This generates a healthy amount of income for the company. Pharmacist's credibility and intention also does influence the patient's choice in medications. The common people do seek the advice from the pharmacists for treating some superficial problems such as stomach pain, headache, cough and cold, etc.

- **Societal Implications**

Although it is established that the factors stated above positively influence the OTC market of the rural West Bengal, it cannot be neglected that in the same

manner these four factors negatively influence the society. The pharmaceutical industry relies on the common ailments to increase their productivity, consequently, increasing their profit. However, the hard truth is underestimated that with the increase the number of ailments, the health of the common population is being affected drastically. The younger generation who is more in contact with these OTC medications is the major workforce of the country. If their health is affected, it will prove to be a major hindrance in the economy of the country in the long run. Doctor's opinion influences the patient's in buying the OTC medications. However, just for the sake of increasing the profits of a pharmaceutical industry, the fact cannot be ignored that India is a developing nation and the majority of the people residing in the rural belts are not from a strong background. Too much expensive medications may be hard for them to obtain in a daily basis. Thus, because of these reasons, if the diseases are not ruptured from the core, it can lead to a major illness in the long run. Patients are not aware of a majority of the drugs. They depend on the doctors or the pharmacists for getting a medication for the disease they are suffering from. They have no choice but to follow their advice because of their odd lifestyle. In the long run, this may become a major issue as the younger generation will be more prone to acquiring such kinds of diseases thus, decreasing their individual productivity drastically. It should not be forgotten that Human Resources is one of the major factors that determines that whether a company will do good or whether the company will perform badly [12]. Finally, the pharmacist's credibility and knowledge can have some negative impacts on the societal front. If the pharmacists advise the patients in taking a wrong medication due to a lack in their knowledge, it may prove to be detrimental to the health of the patient. On top of this, counselling of the patients should be done by the pharmacists in order to determine any kinds of allergies are present or not so that the problem of the patients is resolved and not escalated. Thus, it can be inferred from the findings of the study that the four factors selected for the study does positive implicates the industrial aspects. However, the fact cannot be ignored that at the same time, it also has a negative impact on the society.

CONCLUSION

The Indian Pharmaceutical Industry is one of the most growing sectors as because of the fact that medicines are a necessity nowadays. Patients when inflicted with a disease have no choice but to buy medicines that can cure them. However, because of various factors like lower doctor to patient ratio, lessened consultation time given by doctors and many other factors described in the paper, the patients are finding it increasingly difficult to consult a doctor. This is the case especially in the rural regions of West

Bengal wherein the samples for this study has been collected. Thus, there is a increasing reliance on the drugs that can be obtained without a doctor's prescription, otherwise known as the OTC or Over the Counter Drugs. This newfound trend has its pros as well as its cons. The advantages of this newfound trend are that the OTC drugs market is booming due to its increased sales over the past few years. On the other hand, the disadvantage is that this trend of self-medication slows down the process of the disease manifestation at the proper time. By the time the disease is diagnosed by the doctors, it is often too late for the patients. These diseases mainly afflict the younger population and if their health is not optimal, the productivity of the country as well as the GDP of the country could be hit in the long run. The first half of the paper deals with exploratory type of research whereas the second half of the research paper used conclusive research design wherein a conclusion was reached. The sample size determined for this paper for collecting data was about 400 which were divided in the rural regions of West Bengal which was geographically segmented. This paper pinpoints four factors through clustering which directly affects the OTC Pharmaceutical Market of West Bengal. These four factors were Rural Economic Scenario, Doctor's Intention, Patient's Awareness and Lifestyle and Pharmacist's Credibility and Intention. Through multiple collinear regression analysis, it was established that all the four factors mentioned above have a positive effect on the Pharmaceutical OTC market of West Bengal. This is beneficial for the pharmaceutical industry as the sale of the drugs can lead to a rise of the profitability of the pharmaceutical industry. This will help to position the products in the minds of the customers, thus, building a large customer base. However, from the societal perspective, this phenomenon has a negative implication as it has a detrimental effect on the health of the younger generation of India. It is already established through calculations that the factors are not inter-related in any manner. This paper highlights the various issues of the OTC Pharmaceutical market in rural West Bengal. OTC drugs forms the first line of therapy for any disease. The market cannot be saturated with these products as because they are essential commodities for a person. Self-medication with OTC drugs is becoming very common. On top of this, as of now, the pharmacists do not have a special schedule for this type of drugs under the Constitution of India. Thus, it gives rise to many confusions pertaining to these kinds of drugs. While the practice of Self-medication can prove to be a boon for the pharmaceutical industry in the short run due to the increased selling of the OTC drugs, it may be a curse for the population as a whole in the long run. So the government may develop certain rules and regulations for using OTC drugs so that they are not misused in any manner. If the pharmacists are trained in documenting the medicines that the patients are buying,

they will be able to advice the patients to consult a doctor in case he or she suspects the patient to have an underlying disease. Equilibrium has to be maintained between the industry as well as the society. The task at hand will be very difficult to achieve but it is not impossible if the proper resources are pooled in the right place and at the right time.

REFERENCES

1. Bansal S. WHO report sounds alarm on ‘doctors’ in India. The Hindu. 2016 Jul;18.
2. Government of India. Less than one doctor for 1000 population in India: Government tells Lok Sabha. 2017.
3. Rekha K, Richa PK, Babu S, Rao M. A phytochemistry of the genus premna: a review. Inter J Pharma Chem Sci. 2015;4(3):317-25.
4. Nalini GK. Self-medication among allopathic medical doctors in Karnataka, India. BJMP. 2010 Jun;3(2):325.
5. Chandra S. Unqualified Medical Practitioners in India, the legal, medical and social dimensions of their practice. *A report of Centre for Public Affairs and Critical Theory-C-Pact, Shiv Nadar University.* 2016;73-74.
6. Shroti R, Nayak N, Rajput MS. A study on over the counter drugs in retail pharmacies in Indore city. Pharm Lett. 2011;3:133-8.
7. Abraham BT, Sreeja PA, Sarju D, San S. Study on Self Medication Patterns and Perspectives of Over-the-Counter (OTC) Drugs. 2015.
8. Renuka KP, Joseph S. Study on working of community pharmacies in three major cities of Kerala, India. *Asian Journal of Phrmaceutical and Health Sciences.* 2013;719-725.
9. Parikh D, Sattigeri BM, Kumar A, Brahmhatt S. A survey study on use of over the counter (OTC) drugs among medical students, nursing and clerical staff of a tertiary care teaching rural hospital. *International Journal of Research in Medical Sciences.* 2017 Jan 26;1(2):83-6.
10. Zuur AF, Ieno EN, Elphick CS. A protocol for data exploration to avoid common statistical problems. *Methods in Ecology and Evolution.* 2010 Mar 1;1(1):3-14.
11. Tannoury M, Attieh Z. The Impact of Emerging Markets on the Pharmaceutical Industry. *Current Therapeutic Research.* 2017 Apr 18.
12. Cole MA, Neumayer E. The impact of poor health on total factor productivity. *The Journal of Development Studies.* 2006 Aug 1;42(6):918-38.

Annexure: 1

Factors	Questions on different Items
Rural Economic Scenario	(q1): You face difficulties for low doctor to patient ratio.
	(q2): You get lesser consultation time from doctors.
	(q3): High cost is involved to consult doctors.
Doctor’s Intention	(q4): Fake unauthorized doctors run their pharmacy through OTC drugs.
	(q5): Doctors are having profit making intention through OTC drugs.
Patient’s Awareness & Lifestyle	(q6): You practice irrational use of drugs.
	(q7): You are not aware about ingredients of drugs.
	(q8): Lack of education of the patients affects the OTC market.
	(q9): Sedentary lifestyle influences the OTC market.
Pharmacist’s Credibility & Intention	(q10): Addiction or physical dependence influences the OTC market.
	(q11): Proper documentations are not maintained by Pharmacists.
	(q12): De-motivated Pharmacists for getting inadequate facilities influence the OTC market.
	(q13): Lack of education of the Pharmacist affects the OTC market.
	(q14): Community Pharmacy practices are absent.
	(q15): Improper counseling by the Pharmacist affects the OTC market.