TUBERCULOSIS & DIABETIC PATIENTS ARE SURVIVING WITH PHARMACEUTICAL MEDICINES

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ABSTRACT

Today Healthcare and Pharmaceutical Industries are two distinct industries, but they are interdependent and are subject to similar trends. The pharmaceutical industry is different from other industries, because it is vital for the provision of health care and does the long-term improvement in the standard of living of masses. This paper mainly focuses on how this pharmaceutical medicine helps the communicable and non-communicable disease patients to survive with their diseases. Among the communicable diseases TB is the major health problem in India, It kills 1person every two minute and 750 people per day and among the non-communicable diseases Diabetes is a potential epidemic in India; around 67 million individuals are currently diagnosed with the disease especially in Tamil Nadu 1 out of every 10 people is diagnosed as diabetic, in urban areas every 2 person aware of their disease and in rural areas the ratio was 1:1. It is a micro study conducted in Chennai, the capital city of Tamilnadu…

Keywords: Communicable and Non-Communicable disease, Tuberculosis, Diabetes, Pharmaceutical Medicines

INTRODUCTION

Health is an important resource for an economies development. Pharmaceutical Industries are performing a great role in producing lifesaving drugs (medicines). Medicine is a remedy to all diseases; but it becomes remedy only when it is used by the patients. A strong public health infrastructure like medicine provides the capacity to prepare for and respond to both acute (emergency) and chronic (ongoing) threats to the nation's health. Government imposed numerous policies and programmes to achieve good health but without medicine it becomes impossible. The progress attained through medicines is directly visible by examining from the past to the present condition of communicable and non-communicable diseases. Hence in order to assess Communicable disease TB and Non-Communicable disease Diabetes has been selected for the study. Consequently an opinion survey was conducted in and around Chennai city where people from other rural parts of Tamil Nadu emanate for treatment. The objective and aim of the study is to find out how the medicines become a necessary one for the Tuberculosis and Diabetes Patients to survive with their diseases.

DIABETES

Pharmaceutical Medicines provide some restricted sovereignty in the life of diseased patients. In the early era, our country is afraid off the outbreak of new Communicable diseases but today for time-being it changed into Non-Communicable diseases. Among the various non-communicable diseases diabetes shows a highest growth rate in India. Diabetes is a disease which can be controlled by medicine but not curable. Diabetes affects all age group which disrupts the family income and the whole economy as patients need to take medicine for their whole life. Children are prone to Type I diabetes which shows an emotional impact on the family as it can be controlled only through the insulin treatment which is costly. Patient's age act as the deciding factor for number of years of taking medicines as it is the only remedy for survival.

TUBERCULOSIS

Tuberculosis is a disease, one among the Communicable diseases which can be spread easily to the community. Tuberculosis is curable if it is identified in the initial stage by taking regular medicine. Irregular medication by the patients will grasp them into incurable disease. At this juncture the affected patients have

to spend more money on their medicines. Tuberculosis patients in the Low income groups are most affected with the high medicine price, due to the patients' unaffordability to buy medicines regularly and severity of the communicable disease, government took necessary steps to control the spreading of disease by providing free medicines to the needy patients which helps them to survive with the disease. On the whole our country is travelling in a downward trend of tuberculosis disease with the help of pharmaceutical medicines and government intervention.

Control of Communicable Diseases

According to a 2009 WHO report, 6 out of every 10 deaths in the world are due to non-communicable conditions and 3 to communicable diseases. India is the country with the highest burden of TB. The estimated TB prevalence figure for 2013 is given as 2.6 million. It is estimated that about 40% of the Indian population is infected with TB bacteria, the vast majority of whom have latent rather than active TB. The statistics giving an overall retreatment success rate of only 71% there would seem to be considerable scope for improving the drug regimes that are provided for the retreatment of TB. Despite high disease burden, health system constraints and shortage of funds, country has achieved noteworthy successes in Communicable diseases and it has achieved only through Pharmaceutical medicines. People affected with TB in different age groups in India are given below:

TB affected patients in different Age groups

Age Group (Yrs)	Infected (%)
0-4	1.0
5-9	6.4
10-14	15.4
15-24	31.9
25-34	47.3
35-44	54.8
45-54	60.7
55 and above	62.1
Average Percentage	34.4

Source: Diseases-TB/Medindiawww.medindia.net/health statistics

India accounts for nearly one-third of the global burden of TB. About 10 lakh are new smear positive highly infectious cases and about 5 lakh deaths occur due to tuberculosis (Government of India 2003a).This continued burden of disease is particularly tragic because TB is nearly 100% curable. Besides, control of TB with multidrug regimens has been cited as one of the five highly cost-effective interventions (World Bank 1993). Drug resistance in sputum-positive patients treated with short course chemotherapy has been shown to be low (2.1%) 2001. Untreated patients can infect 10–15persons each year; poorly treated patients develop drug resistant and potentially incurable TB. TB control national programme, conducted by the Government, but TB patients were not accurately diagnosed, and most patients did not attain their complete treatment. This led to the Revised National Tuberculosis Control Programme (RNTCP) being started on a pilot basis in 1993. RNTCP provided medicine to the TB patients properly and it leads to number of deaths due to TB have declined from over 5 lakh to about 4 lakh per year—in registered patients, the death rate has declined seven-fold.,

Management of Non-Communicable Diseases

The phase of development of the medical sciences has been characterized by a remarkable increase in the acquisition of knowledge about the biochemical and physiological basis of disease, information that combined with some remarkable developments in the pharmaceutical industry has led to a situation in which few non-communicable diseases exist for which there is no treatment and many although not curable can be controlled over long periods of time. Modern cardiology, cancer and diabetes are the good examples of Non-Communicable diseases which can be survived to some extent with medicines. According to the study on Diabetes states that around 150 million people are affected with diabetes worldwide and that number is

expected to double by 2025. Furthermore diabetes is associated with greatly increased risk of cardiovascular disease and hypertension.

Diabetes Global Data (in millions)

Country	Population Diabetes	Percentage of overall Population
India	85.9	7.10
China	60.9	4.50
United States	38.8	12.30
Brazil	14.3	6.00
Pakistan	13.9	7.60
Mexico	11..3	10.10
Indonesia	10.9	4.60
Germany	9.8	12.00
Japan	9.3	7.30
Bangladesh	9.3	6.10

Source: International Diabetic Foundation Annual Report, 2013 and WHO Data

India has more diabetics than any other country in the world, according to the International Diabetes Foundation. The disease affects 85.9 million Indians, which shows 7.10% of India's Population. An estimate shows that nearly 1 million Indians die due to Diabetes every year. Additionally, a study by the American Diabetes Association reports that India will see the greatest increase in people diagnosed with diabetes by 2030. But this prediction can be changed with creating awareness among people because diabetes has become common today. Tremendous progress has been made in managing diabetes and its complications. Because of public health efforts, higher percentages of people with diabetes are monitoring their blood sugar daily and receiving proper medication, through the health professionals. Diabetes is a disease cannot be cured but it can be controlled and survived with medicines. Pharmaceutical medicines play a lead role in the life of diabetic patients.

While communicable diseases are slowly getting controlled in low and middle income countries (LMIC) such as India, there is a significant increase in the burden of non-communicable diseases. But the patients affected with diabetes and TB are surviving with the medicines which provide long life to the infected patients.

OBJECTIVE

1. To find out whether the Pharmaceutical Medicines helps to survive with Communicable TB and Non-Communicable Diabetes diseases.
2. To elucidate the necessity of medicine to the patients by evaluating the number of years taking medicines.

METHODOLOGY

The study entirely based on Primary and Secondary sources of data collected from various books, National & international Journals, publications from various websites which focused on TB & Diabetes Disease Patients are surviving with Pharmaceutical Medicines.

RESEARCH DESIGN

The collected primary and secondary data are nicely presented in the form of tables. The Primary data analysed through the Kruskal-Wallis or H-Test used to validate the hypothesis.

LITERARY REVIEW:

Luce (1998) has stated that, there is no doubt that introduction of effective antibiotics against tuberculosis since the middle of last century has resulted in an improvement in the quality of life of tuberculosis patients.

Lopez, Alan (2006) has said pharmaceutical industry recognizes the increasing burden of Non-communicable diseases (NCD's) on patients and health systems around the world. In the fight to improve the health and quality of life of all patients, the pharmaceutical industry is committed to continuing partnerships to tackle these complex issues including extensive investment in R&D programs dedicated to

the development of new NCD preventive and treatment products. Both prevention and treatment play an important role in increasing our ability to tackle NCDs.

A CROSS SECTION ANALYSIS OF THE PRIMARY DATA

At the outset, for the sake of convenience in the analysis, both the patients (TB & Diabetes) were categorised into two groups. The sample size drawn for each disease is 500 for TB and 500 for Diabetes. Age Group has been divided into four as Children, Youngsters, Middle Age, and Old Age. The above categorization is used for the analysis and proved with the particular statistical tools.

Necessity of Medicine

Both the patients are surviving with the medicine shows the necessity of medicine. The following table represents how long the patients are taking Medicines; it is evident that the table shows 16.8% of Diabetes patients are taking medicine for the period of less than 2 Years. 17.2% are for 2 years, 18.0 for 2-5 Years, 21.2% for 5 years and 26.8% for More than 5 Years. Diabetic once detected Patients has to continue their medicine lifelong with food control. On the other hand 41.2% of Tuberculosis patients are taking medicines for more than 5 Years, 19.2% for 2-5 Years, 13.2% for 5 Years, 12.4% for 2 Years and 14% for Less than 2 Years. Unlike diabetes, TB patients diagnosed in the early stage can be cured completely by taking medicine regularly up to 2 years. It is inferred from the above table that patients once diagnosed with Diabetes or TB can survive or cured only with the Pharmaceutical Medicine.

Period of medicine taken by the Patients

S.No	No of Years Taking Medicine	Diabetes	%	Tuberculosis	%
1	Less than 2 Years	84	16.8	70	14
2	2 Years	86	17.2	62	12.4
3	2-5 Years	90	18.0	96	19.2
4	5 Years	106	21.2	66	13.2
5	More than 5 Years	134	26.8	206	41.2
	Total	**500**	**100**	**500**	**100**

Source: Primary data

Number of Years taking Medicines by Different Age Groups

Patients with different age group are surviving with medicines are tabulated with the data on the age wise distribution of TB and Diabetes patients. It is very mournful by seeing the table that all groups of people are affected with both the diseases. From the raw data it is observed that Diabetes patients are high at old age with 43.4% and next comes middle age group constituting 30.8%. Major Reasons for diabetes are stress, negligence of health requirements, no proper exercise, genetic, and affected with other diseases also leads to increase the diabetes disease. The youngsters show a lower percentage of 11.2% respectively. The children constitute 14.6% which is higher than youngsters mostly as they are in type I diabetes stage. On the other hand, Tuberculosis patients are very high at Middle age with 46.0% and next comes old age group with 34.2%. These groups are affected due to their of job stress, life style, bad habits etc., The other groups Youngsters with 11.4% and Children with 8.4% respectively because of spread of TB Disease. Though there are many reasons associated in the spread of TB disease, it is important that Tuberculosis spreads through air i.e., bacteria are released into the air while coughing or sneezing by an infected person who is not taking tuberculosis medication. Untreated and poorly treated patients develop drug resistant which leads to potentially incurable TB patients in the society.

Age wise distribution of both the patients

S.No	Age Group	Diabetes	%	Tuberculosis	%
1	Children	73	14.6	42	8.4
2	Youngsters	56	11.2	57	11.4
3	Middle age	154	30.8	230	46.0
4	Old age	217	43.4	171	34.2
	Total	**500**	**100**	**500**	**100**

Source: Primary data

Kruskal-Wallis or H-Test shows that calculated value is greater than the table value. Hence there is significant relationship between different Age group and number of years taking medicines.

H - Test for number of years taking medicines by different Age groups.

Test	Calculated Value	Significance Difference	Table value (0.05)
H-Test (Diabetes)	9.47	3	7.81
H-Test (TB)	10.01	3	7.81

From the statistical analysis it is ascertained that Age of the patient is an impact factor on deciding the period of medication. As the age increases number of years taking medicine will also increase.

As the necessity of medicine is proved through the number of years taking medicine by the patients, it is really dependent on the age of the patient. These variables are interrelated with each other to prove that medicine helps both (Diabetes and TB) patients to survive with their disease.

Health status of the patients & necessity of medicine to the patients

Once the person affected with the disease cannot be declared as an unhealthy person because today patients affected with TB and Diabetes diseases also lives a long life with the help of medicine as it is proved with the above variables. According to the collected sample referred in the below table states that 263 (52.6%) of the diabetes patients and 229 (45.8%) of the tuberculosis patients confirmed that their present health status is Good. Though diabetic patients once affected with the disease they cannot proceed their remaining life without medicine whereas TB patients in the primary stage of disease can be cured with regular medication in this situation 52.6% and 45.8% patients are presenting a good health status means it is only because of medicine.

Present Health status of the patients

S.No	Health Status	Diabetes	%	Tuberculosis	%
1	Good	263	52.6	229	45.8
2	Excellent	83	16.6	148	29.6
3	Bad	154	30.8	123	24.6
	Total	500	100	500	100

Source: Primary data

The affected patients are purchasing medicine for time being because diseases will constantly reduce the working capacity of the affected patients and herald them to do less work which turns their family into poverty. On the whole reduced workforce will slowly affects the whole economy. To avoid this situation both diabetes and tuberculosis patients has to continue their medicine to live a healthy life. The word healthy life mentioned here is to specifies that an individual affected with the disease may easily contract other co-diseases, thereby medicine becomes a necessary one for the survival of both the patients.

CONCLUSIONS

Conclusions are drawn based on the observations made from the cross section analysis of the primary data. These conclusions help us to understand that how TB and Diabetes disease patients are surviving with the pharmaceutical medicines. Taking into consideration that a sample is representative of the population, the conclusions arrived at from the analysis of the primary data collected from the sample size can be applied to the population as a whole. Hence in this study the characteristics exhibited by the sample that is the TB patients and the diabetes patients can be applicable to the population. Therefore the conclusion arrived from this sample study will help the authorities to take necessary decisions regarding Communicable disease TB and Non-Communicable disease Diabetes on the whole.

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