

Diabetes: A Fact and Figure in World as well as Civil Hospital Malegaon

Prof. Momin Mubasshera Nasreen

Assistant Professor, Department of Mathematics M.G.V.'s Arts, Commerce and Science College Malegaon City (India)

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*Corresponding Author

Email: drarifanjum[at]gmail.com

ABSTRACT

Diabetes is undoubtedly one of the most challenging health problems in 21st century. Diabetes is a developmental issue, and it is a threat to the health and economic propriety of nations. The number of peoples aged 20 to 79 years with diabetes in the world in 2017 is estimated to be 425 million⁵. India leads the world with largest number of diabetes patients and become "Diabetic Capital of the World"¹⁰. A statistic of diabetes patients in Civil Hospital Malegaon City (Nashik) is discussed. The following result and discussion highlights how diabetes has expanded throughout world with its gender distribution, age group and cause.

1. Introduction

Diabetes is recognized as a group of heterogeneous disorders with the common elements of hyperglycemia and glucose intolerance, due to insulin deficiency, impaired effectiveness of insulin action, or both⁴. Diabetes mellitus is classified on the basis of an etiology and clinical presentation of the disorder into three main types.

- I. **Type 1 Diabetes:** Type 1 diabetes is sometime called insulin dependent, immune-mediated or juvenile-onset diabetes. It is caused by destruction of the insulin-producing cells of pancreas.⁴ The initial symptoms of this disease includes excessive excretion of urine, thirst, constant hunger, weight loss, vision changes and fatigue¹⁰.
- II. **Type 2 Diabetes:** Type 2 diabetes is characterized by insulin resistance of relative insulin, deficiency, either of which may be presented at the time that diabetes becomes clinically manifest⁴. Initial symptoms of this includes constant hunger, a lack of energy, fatigue, weight loss, frequent urination, dry mouth, itchy skin and blurry vision¹⁰.
- III. **Gestational Diabetes Mellitus (GDM):** GDM is a glucose intolerance of varying degrees of severity which starts or is first recognized during pregnancy.⁴

2. Diabetes Complications

In virtually every high income country, diabetes is ranked among the leading causes of blindness, renal failure and lower

limb amputation⁴. Diabetes is also now one of the leading causes of death, largely because of a markedly increased risk of coronary heart disease and stroke (Cardiovascular disease)⁴. The major chronic complications of disease are

- > Cardiovascular Disease
- > Nephropathy
- > Neuropathy
- > Amputations
- > Retinopathy⁴

3. Result and Discussion

I. Diabetes in World:

Diabetes poses one of the greatest challenges to the health care system of world wide. In 2011 the 366 million people have diabetes all across the world¹. In 2017 it was estimated that there were 425 million peoples with diabetes globally, accounting for 10% of the adult population aged between 20 and 79⁵. 80% of peoples with diabetes live in low and middle income countries¹. In 2011 diabetes cause 4.5 million deaths all over the world¹. Table 1 represents the 10 highest rank country of the world having largest number of diabetes patients. This table 1 shows that day by day there is tremendous increase in the patients of diabetes. The rank of India in 2007, 2011 and 2017 is one and second respectively because lack of information and knowledge about diabetes^{1, 2, 3}. Diabetes in India has a long history since ancient time. It has been mentioned that Lord Shiva has dictated a formulation for the treatment of *prameha* to his son Lord Ganesha¹⁰.

Table 1: Top 10 Countries/Territories for number of peoples with Diabetes (20-79 years) in 2007, 2011 and 2017

2007 ³			2011 ¹			2017 ²		
Rank	Country	Persons in millions	Rank	Country	Persons in millions	Rank	Country	Persons in millions
1	India	40.9	1	China	90.0	1	China	114.4
2	China	39.8	2	India	61.3	2	India	72.9
3	United States of America	19.2	3	United State of America	23.7	3	United States of America	30.2
4	Russian Federation	9.6	4	Russian Federation	12.6	4	Brazil	12.5
5	Germany	7.4	5	Brazil	12.4	5	Mexico	12.0
6	Japan	7.0	6	Japan	10.7	6	Indonesia	10.3

7	Pakistan	6.9	7	Mexico	10.3	7	Russian	8.5
8	Brazil	6.9	8	Bangladesh	8.4	8	Egypt	8.2
9	Mexico	6.1	9	Egypt	7.3	9	Germany	7.5
10	Egypt	4.4	10	Indonesia	7.3	10	Pakistan	7.5

The following graph show the increase of diabetes patients of top 10 ranked countries in the year 2007, 2011, 2017 respectively^{1,2,3}. This graphical representation shows a huge increase in the patients of the countries which has a large

population. Hence China, India and United States of America have the highest percentage of diabetes patients all over the world and there is no end to this increase.

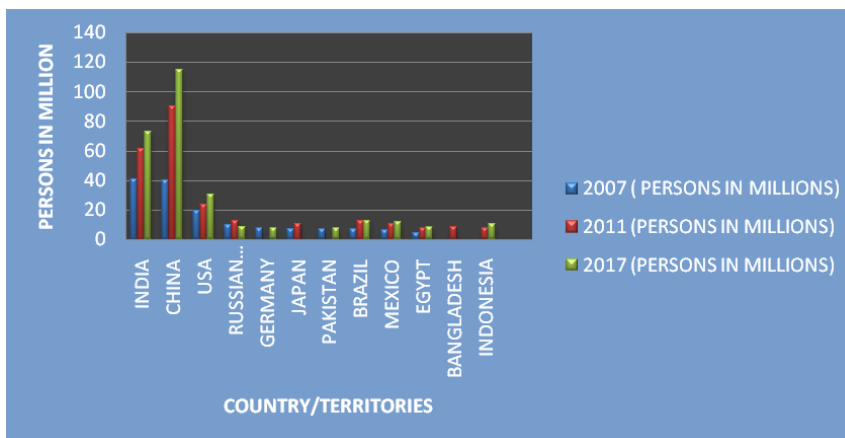


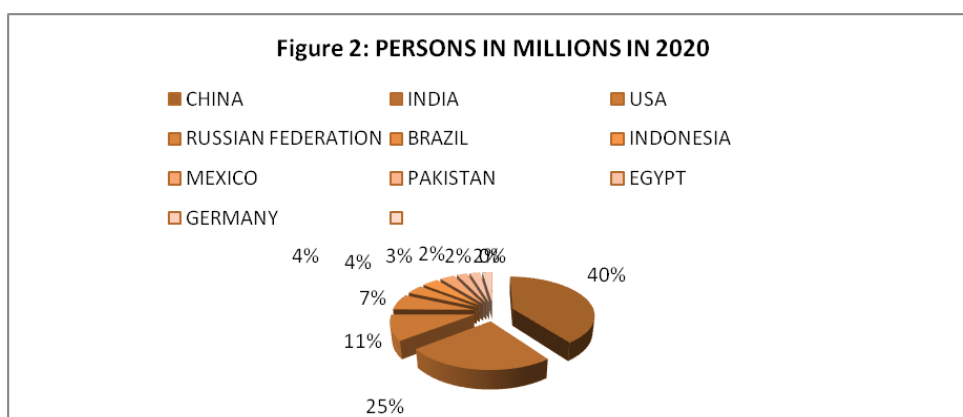
Figure 1: number of Diabetic patients (20-79 years) of top 10 countries in 2007, 2011 and 2017

Table 2: top 10 countries/territories for number of peoples with diabetes in 2020

2020		
Rank	Country	Persons in Millions
1	China	129.66
2	India	79.79
3	United States of America	34.44
4	Russian Federation	21.4
5	Brazil	12.55
6	Indonesia	12.41
7	Mexico	11.14
8	Pakistan	8.08
9	Egypt	7.74
10	Germany	7.59

Table 2 shows that the rank of China, India and United States of America are first, second and third respectively. This representation shows that all nation rich or poor are suffering

the impact of the diabetes epidemic¹. The 40% and 25% of diabetes patients are from China and India. While 11% of diabetes patients are from United States of America.



II. Diabetes Patients in Malegaon:

It is now recognized that diabetes patients imposes a large economic burden on the individual, national healthcare system of countries¹. The increase of diabetes patients in India is very much high. Hence study area Malegaon is selected. Population selected contains all Diabetes patients of the Malegaon city. The Sample set consists of all the Diabetes patients of civil

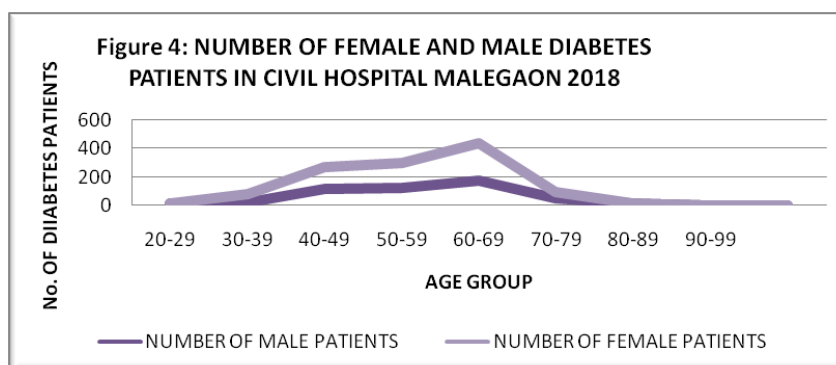
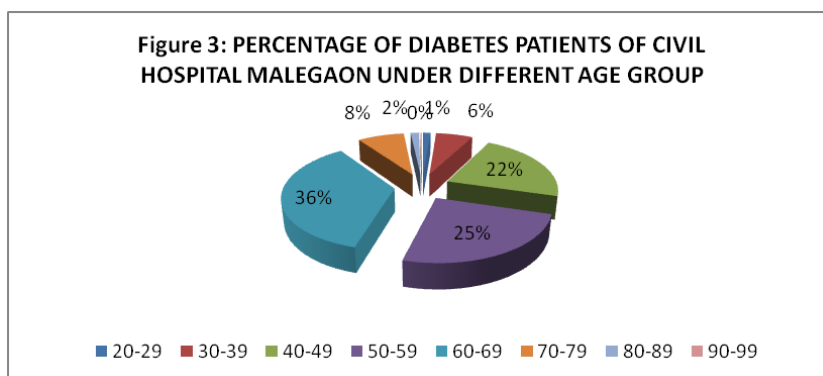
hospital of Malegaon city. Data set contains 1223 Diabetes patients that are in the year 2018 consulting doctors of civil hospital. The Data gathered is as per the best accuracy and measurement tools of the statistics. Data of diabetes patients are collected from the confirm Diagnosis Register of civil hospital Malegaon of year 2018.

Table 3: NUMBER OF DIABETES PATIENTS OF CIVIL HOSPITAL MALEGAON IN 2018

Age Group	Number of Male Patients	Number of Female Patients	Total Number of Patients
20-29	12	4	16
30-39	22	56	78
40-49	114	154	268
50-59	122	180	302
60-69	176	264	440
70-79	48	50	98
80-89	14	4	18
90-99	2	1	3
Total	510	713	1223

After the Data has been collected the arrangement of Data is done with the help of method of preparation of frequency table for the grouped Data. For making the frequency table the class width is taken as 10 years. The Table 3 consists of all Diabetes patients from age group 20-90. Below 20 year Diabetes patients are also noticed in the selected Data. In age group 20-29 the total Diabetes patients are 16 but in this frequency of Male Patients are greater than Female patients. But in all the other age group the frequency of Female patient is very much high and dangerous as compared to the Male patients. The frequency of Diabetes patients is highest at age group 60-69 in the civil hospital of Malegaon city. Figure 3

highlights that from sample of total 1223 Diabetes patients 36% patients is of group 60-69 which is the greatest proportion among all the age groups. Also from the sample size 58.29% are Female patients and 41.70% are Male patients. This describes health condition of women's of the Malegaon city is at risk. For improving the health condition of women's the government should take necessary action. The distribution table shows that largest numbers of diabetes patients are of age group 60-69, 50-59, 40-49 respectively. Also if we consider this distribution in gender then occurrence of Diabetes in Female is very much high as compared to the Male patients.



4. Causes of Diabetes in Malegaon

Following are the risk factors that play an important role in development of Diabetes.

1. Being 45 or older (45+)
2. Stressful Life
3. Power loom industry
4. Being over weight
5. Unhealthy eating habits
6. Shortage of education programs
7. Smoking and excessive alcohol consumption and use of tobacco

5. Conclusion

It is now recognized that both developed and developing countries presently face the greatest burden of Diabetes³. However, many government and public health planner still remains largely unaware of the current magnitude, more importantly the future potential for increase in Diabetes and its serious complications in their own countries³. It is predicated that in 2020 Diabetes may afflict up to 79.79 million individual in India, while China 129.66 million and United States of America 34.44 million will also see significant increase in those affected by the disease⁹. In Malegaon Civil hospital out of 1223 Diabetes patients 255 Patients are Male while 356 are Female. Also the largest numbers of patients are of age group 60-69, 50-59 and 40-49 respectively.

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