

## A Study on the Myths and Misconceptions of Diabetes Mellitus among Diabetic Patients Attending Tertiary Care Institute of Ahmedabad City, Gujarat

Akshadha Easwar\*, Aditya Gaudani\*, Aarohi Gandhi\*, Milav Patel\*, Donald S. Christian\*\*

### Abstract :

India is the diabetic capital of the world with the highest number of diabetics in the world. Diabetes is a disease, which in spite of its raging prevalence, is associated with a lot of myths. **Objectives :** To study various myths and misconceptions among diabetics in the study area, finding out if the prevalence of these misconceptions was associated with the socio-demographic profile. **Methodology :** The study was conducted in the months of May – June 2018, among diabetic patients (N=139) attending the medicine O.P.D of a tertiary care institute of Ahmedabad. A self- made questionnaire was finalized for the assessment, it consisted of 39 questions. The questionnaire consisted of two parts: 1) preliminary socio-demographic data and 2) general knowledge about the myths and facts of diabetes. **Results:** Most people, 108 (77.69%) believed that a high intake of sugar and sweets causes diabetes. 99 (71.22%) had the misconception that mental stress causes diabetes. Maximum participants knew the correct responses to some other myths associated with diabetes; like diabetes can occur in lean and thin individuals, diabetes is not contagious; people with diabetes can lead a normal life, etc. **Conclusion :** Majority of the diabetic patients in the study were aware about certain well-known facts of diabetes mellitus. However, many patients had certain specific misconceptions as well.

**Key Words:** Awareness, Diabetes, Knowledge, Myths

### Introduction :

Diabetes mellitus is the commonest metabolic disorder affecting populations in all geographical regions of the world. The prevalence of diabetes is influenced by genetic, ethnic and socioeconomic factors. The World Health Organization (WHO) has projected that the prevalence of diabetes is increasing, in epidemic proportions, especially in developing countries, fuelled by obesity and unhealthy lifestyle. Diabetes is expected to affect around 592 million by 2035. <sup>(1)</sup> India is the diabetic capital of the world with the highest number of diabetics in the world. According to the International Diabetes Federation, as of 2017; out of the 425 million people with diabetes in the world, over 72 million are from India. <sup>(2)</sup>

Diabetes is a disease, which in spite of its raging prevalence, is associated with a lot of myths in the minds of the people, whether they have it or not. Myths are shared stories that arise and live for generations,

initially in oral tradition, but eventually taking new life with the help of literature created by poets, historians and journalists. A misconception is an idea that is wrong because it is based on a failure to understand a situation. There are numerous myths regarding diabetes out of which many were never true in the first place and a lot more have been debunked by years of careful research by various institutes, diabetic associations and research organizations. A very common myth associated with diabetes is that high sugar intake can cause diabetes and that people with diabetes cannot eat sugar and sweets. However, sugar in any volume cannot cause diabetes and sugar is not banned from any modern diabetes meal planning. <sup>(3-5)</sup> Another common misbelief is that mental stress causes diabetes. New research shows that extreme forms of mental illness, like depression, anxiety and childhood trauma and abuse can be a risk factor, but mental stress has not been proven to cause diabetes; however, it can lead to hormonal imbalance and hyperglycaemia in a person who is already a diabetic. <sup>(5)</sup> Indian populations also have strong cultural influences that affect health seeking behaviour; people believe that diabetics must have a special diet, spiritual and herbal treatment

\* Undergraduate medical students, GCS Medical College, Ahmedabad

\*\* Assistant Professor, Community Medicine Department, GCS Medical College, Ahmedabad

**Correspondence :** Dr Donald S Christian

**E-mail :** donald\_christian2002@yahoo.com

modalities are an effective permanent cure for diabetes and insulin is dangerous and damages the body.

A study conducted among diabetics and non-diabetics in a teaching hospital in Delhi in 2008 by Rai M and Kishore J found out that the most common myth was that eating more sugar causes diabetes.<sup>(6)</sup> The study concluded that the prevalence of these myths led to poor health seeking behaviour and poor compliance with treatment. A similar Karachi based study, conducted in 2005 by Nisar N. et al found out that people believed diabetes to be contagious, and that spiritual treatment could be a permanent cure for diabetes.<sup>(7)</sup> Compelling evidence from various prospective cohort studies and randomized clinical trials have demonstrated that type 2 diabetes can be prevented largely through moderate diet and lifestyle modifications. Maintaining a healthy body weight and avoiding weight gain during adulthood is the cornerstone in the prevention of type II diabetes mellitus.<sup>(8)</sup> If knowledge about this important lifestyle-related disorder is introduced early into the education curriculum, the disease can be delayed or prevented.<sup>(9,10)</sup> Keeping this background in mind, this study was conducted with the objective of studying various myths and misconceptions among diabetics in the study area, their associations with socio-demographic factors and also making recommendations.

### **Methodology :**

The study was conducted in the months of May – June 2018, among diabetic patients attending the medicine O.P.D. of a tertiary care institute of Ahmedabad city. All participants were explained about the purpose of the study and prior informed verbal consent was taken. The study included adult diabetic patients, above 30 years of age, and excluded paediatric and adult diabetic patients below 30 years, and those who did not provide consent to participate in the study, concluding a total of 139 study subjects. Keeping the limited resources and the timeframe in mind, the subjects were selected by purposive sampling technique. Necessary permission was obtained from the medicine department before starting the study. A self- made questionnaire was finalized for the assessment, it consisted of 39 questions. The questionnaire consisted of two parts: 1) preliminary socio-demographic data and 2) general knowledge about the myths and facts of diabetes. The

demographic information included the age, gender, religion, education and socioeconomic status. Many misbeliefs and facts, which were prevalent in the society, according to personal experience of doctors in the area, and various research articles were included in the questionnaire. Out of the 39 questions, 31 questions tested the knowledge and awareness about diabetes, while the rest were for socio-demographic analysis. Chi square test was used as a test of significance and a p-value of < 0.05 was considered as the level of significance. Data entry was done using MS Excel and analysed using IBM SPSS Software (Evaluation version) (SPSS Inc. USA).

### **Results :**

Out of the 139 study participants, 63(45.3%) were females and 76(54.7%) were males. All the participants were of the age 30 years or more (minimum age = 30 years, maximum age = 87 years), with a mean age of 52.85 years (SD=11.48 years).A 118,(84.9%) were Hindus and 21 (15.1%) were from other religions. Maximum participants, 87 (62.6%) belonged to class I and II according to modified Prasad's criteria. Also, most participants, 93 (66.9%) had an education level of less than graduation. Table 1 shows the education profile and socioeconomic classification of the participants.

A 108 (77.6%) of them believed that a high intake of sugar and sweets causes diabetes. The study also showed that 99 (71.2%) had the misconception that mental stress causes diabetes. People who thought that diabetes can be cured by herbal medicine,(57, 41%), were almost equal to those who were aware that herbal medicine cannot cure diabetes, (58,41.7%).A few less than half of the people had the misconception that insulin damages the kidneys, (63, 45.3%), and that insulin is more harmful than oral anti-diabetics, (62, 44.6%).Majority of the respondents (94, 67.6%) were aware of the fact that diabetes cannot occur or worsen due to past sins, even though a substantial percentage of people, (33, 23.7%) did seem to think that this myth is true.

Maximum participants knew the correct responses to some other myths associated with diabetes, like diabetes can occur in lean and thin individuals, diabetes is not contagious, people with diabetes can get married, have children and lead a normal life in

**Table 1 : Distribution of socioeconomic class and the education profiles of the study participants (N=139)**

<b>Socioeconomic Class</b>		
<b>Class*</b>	<b>Frequency</b>	<b>Percentage</b>
Upper class	58	41.7
Upper middle class	29	20.9
Middle class	22	15.8
Lower middle class	22	15.8
Lower class	8	5.8
<b>Educational Profile</b>		
<b>Level of education*</b>	<b>Frequency</b>	<b>Percentage</b>
Illiterate	18	12.9
Primary	45	32.4
Secondary	16	11.5
Higher secondary	14	10.1
Graduate	22	15.8
Post-graduate	24	17.3

\*according to modified Prasad's criteria

**Table 2 : The distribution of correct responses to some common myths about Diabetes given by study participants**

<b>Question</b>	<b>Frequency of correct responses (in %)</b>
Can a person with diabetes get married and have children?	82.7
Is diabetes contagious?	78.4
Can diabetes be cured by spiritual treatment?	72.7
Is it true that even if you have uncontrolled sugar levels, no complications will occur?	70.5
Can a person with diabetes lead a normal life?	68.3
Can you stop your medicine if blood sugar levels come back to normal?	61.2
Should a diabetic reduce their total calorie intake?	59
Is diabetes a disease of old age?	55.4
Can diabetes occur in lean and thin individuals?	51.1

**Table 3 : Association between socio-demographic characteristics of the participants and common myths about Diabetes prevalent among them**

Responses for attributes - YES		Does high intake of sugar and sweets cause diabetes? (n=108)	Does mental stress cause diabetes? (n=99)	Can diabetes be cured by Herbal medicine? (n=57)	Can diabetes be cured by spiritual treatment? (n=24)	Does insulin damage the kidneys? (n=63)
Variable	Criteria					
<b>Sex</b>	Female	54	38	30	14	30
	Male	54	61	27	10	33
	$\chi^2$ value	5.000	8.970	2.109	0.013	4.377
	p value	0.08	0.01*	0.34	0.99	0.11
<b>Religion</b>	Hindu	90	82	48	24	48
	Others	18	17	9	0	15
	$\chi^2$ value	1.073	1.152	1.051	6.698	6.802
	p value	0.58	0.56	0.59	0.025 *( Fisher's Exact test)	0.03*
<b>Education</b>	Less than graduate	77	62	47	12	47
	Graduate or post-graduate	31	37	10	12	16
	$\chi^2$ value	<b>6.786</b>	4.078	10.608	3.751	9.463
	p value	<b>0.03*</b>	0.13	0.004*	0.15	0.008*
<b>Socio-Economic Class (modified Prasad)</b>	I, II	65	65	36	15	39
	III, IV, V	43	34	21	9	24
	$\chi^2$ value	1.965	1.383	0.229	0.203	0.838
	p value	0.37	0.50	0.89	0.90	0.65

\*Statistically Significant value at p<0.05

general, diabetes is not a disease of old age, calorie adjustment is required in the diet of a diabetic and uncontrolled blood glucose levels can be dangerous and lead to complications. Table 2 shows the percentage of people with correct responses to these misconceptions about diabetes.

In the present study, few of the myths were also analysed to find out their associations with socio-demographics characteristics. The results are shown in Table 3. It showed that few of the myths had significant associations with religion and education. (Table 3)

### **Discussion :**

In the present study, many patients were aware about certain well known facts of diabetes. Out of the 31 questions in the survey, that tested the awareness of the patients, the majority gave correct responses in 22 of the questions, i.e., 70.9% of the total questions. The most important aspects about which the people in this particular study area had misconceptions were that “high sugar intake causes diabetes” (77.6%), “mental stress causes diabetes” (71.2%), “insulin damages the kidneys” (45.3%) and “insulin is more dangerous than oral diabetic medication”(44.6%). Myths were significantly more common among the less educated groups.

In a similar study conducted by Rai M and Kishore J in Delhi, India in 2008,<sup>(6)</sup> the commonest myth in the population (22%) was that eating more sugar causes diabetes. The higher proportion (77.6%) in the present study may be due to smaller sample size. In Rai’s study, Myths were significantly more common in females, non-diabetics & less educated groups. The prevalence of myths about diabetes is high in North Indian population which could be associated with poor early health seeking behaviour and poor compliance with treatment. A similar study was also conducted in Karachi, Pakistan in 2005,<sup>(7)</sup> by Nihar N et al. reported that overall myths related to diabetes mellitus were quite common among the individuals; pre-dominantly contagiousness of diabetes, diabetics becoming more ill and belief in spiritual treatment for permanent cure of diabetes. Frequency of reporting myths was significantly high in this study with preponderance of males, family history of diabetes mellitus and educational status. Education served as protective

factor according to these studies, and this also holds true for the present study as well.

### **Conclusion :**

There is significant prevalence of myths and misconceptions related to Diabetes even among the patients on treatment. The correct knowledge about the facts related to Diabetes and its epidemiology were also ascertained. Majority of the diabetic patients in the study were aware about certain well-known facts of diabetes mellitus like the genetic nature of the disease and that it is not contagious. Significantly positive associations were found between certain socio-demographic factors, like sex and religion, and a few important misconceptions of diabetes. Especially notable was the fact that the proportion of people with belief in these myths was significantly higher in those who had received a lesser level of education (i.e., less than graduation), as compared to those who had a higher level of education (i.e., graduates and post graduates).

### **Recommendations :**

The best way to bring about this change is to introduce the concept of healthy lifestyle early into the education system. Also, the basic facts about diabetes and its treatment should be taught from higher secondary years of school, in an effort to try and prevent a disease that would otherwise go on to become a social, physical and economic burden on our country. It would also be a fruitful exercise to target young adults through social media and advertising in the television/newspapers regarding the facts of Diabetes. The “World Diabetes Day” should also be celebrated with more enthusiasm across the country taking various stakeholders into account for higher dissemination. Awareness about the facts of diabetes can also be spread in the general community with the help of mass media; television, radio, newspapers, pamphlets, books, magazines etc. are an excellent way of public outreach. Media is the most powerful tool of communication in the emerging world. They can ensure that a large number of people receive correct information about the disease. Another approach could be to introduce an effective and standardized counseling system that could ensure transmission of correct information to all patients diagnosed with diabetes. By understanding the true

facts about the disease, the patient can work at dispelling social and cultural myths and would better accept the treatment and lifestyle modifications suggested by their doctor.

### References :

1. Forouhi NG & Wareham NJ, *Medicine (Abingdon), Epidemiology of diabetes*. 2014 Dec;42(12):698-702.
2. International Diabetes Federation, India fact file, online source <https://www.idf.org/our-network/regions-members/south-east-asia/members/94-india.html> last accessed on 3/6/2018.
3. Dubois W., XII Diabetes Myths Debunked, *Diabetes Self Manag.* 2017 Jan; 34(1):38-40.
4. Diabetes Myths, The Global Diabetes Community, Diabetes Information, online accessed from <https://www.diabetes.co.uk/diabetes-myths.html>. Last accessed on 5/6/2018.
5. Diabetes Myths, American Diabetes Association, accessed online from <http://www.diabetes.org/diabetes-basics/myths/> last accessed on 10/06/2018.
6. Rai M, Kishore J. Myths about diabetes and its treatment in North Indian population. *Int J Diabetes Dev Ctries.* 2009 Jul;29(3):129-32. doi: 10.4103/0973-3930.54290.
7. Nisar N, Khan IA, Qadri MH, Sher SA., Myths about diabetes mellitus among non-diabetic individuals attending primary health care centers of karachi suburbs, *J Coll Physicians Surg Pak.* 2007 Jul;17(7):398-401.
8. Schulze MB, Hu FB., Primary prevention of diabetes: what can be done and how much can be prevented?, *Annual Review of Public Health*, Vol. 26:445-467. <https://doi.org/10.1146/annurev.publhealth.26.021304.144532>.
9. Bommer C, Heesemann E, Sagalova V, Manne-Goehler J, Atun R, Bärnighausen T, Vollmer S., The global economic burden of diabetes in adults aged 20-79 years: a cost-of-illness study. *Lancet Diabetes Endocrinol.* 2017 Jun; 5(6):404-405.
10. Dwivedi PK, Pandey I, Role of Media in Social Awareness, *Int J Humanities and Social Sciences*, 2018 (Online source). [http://www.academia.edu/4243602/ROLE\\_OF\\_MEDIA\\_IN\\_SOCIAL\\_AWARENESS](http://www.academia.edu/4243602/ROLE_OF_MEDIA_IN_SOCIAL_AWARENESS) accessed online on 12/06/2018.