

Original Research Article

**False beliefs about causation of Diabetes Mellitus among adults in Urban Pondicherry - A cross sectional study.**

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**Abstract**

**Introduction:** Misconceptions about Diabetes is a hurdle in effective prevention and control, specifically in India. **Objectives:** 1. To assess the false beliefs about causation of Diabetes Mellitus. 2. To assess the socio-demographic factors associated with false beliefs about causation of Diabetes Mellitus. **Material and Methods:** Present cross sectional study was conducted among 406 subjects at peripheral health centre of a tertiary teaching hospital in Pondicherry during June-July 2011. Information related to socio-demographic profile, diabetes status and misconceptions about causation of diabetes mellitus was obtained. For data entry and analysis MS-excel and Epi-Info software were used. **Results:** Total 406 adult patients were interviewed. Total 25.9% patients attending to health centre were diabetic. Among the nine selected misconceptions, commonest was “Diabetes occurs only in old age” (59.4%) followed by the misbelief “Diabetes is mainly an inherited disease”. The false belief “Diabetes occurs only in old age”, was significantly more common among men (65.6%) compared to women (55.1%). Religion showed significant association with most of the misconceptions. Education was found to be significantly associated with only two of the misconceptions. There were no significant differences regarding misconceptions between Diabetics and non-diabetics. **Conclusion:** The common misconceptions among the subjects were of occurrence of diabetes only in old age, consuming more sugar directly leads to causation of diabetes and diabetes is mainly an inherited disease. The results of our study suggested that people are having less awareness about the disease.

**Key words:** Diabetes, Mellitus, misconception, belief, awareness, causation

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**Introduction**

Diabetes Mellitus is an ancient disease commonly known as “*Madhumeh*” in India. It is a highly prevalent non-communicable disease. The number of people with diabetes has increased from 108 million (yr. 1980) to 422 million (yr. 2014). The global prevalence of diabetes among adults doubled from 4.7% (yr. 1980) to 8.5% (yr. 2014). Diabetes prevalence has been rising more rapidly in middle- and low-income countries<sup>1</sup>. There is no nationwide study in India to find the prevalence but it was

reported from 6.1% to 16.6% in a study done in metropolitan cities.<sup>2</sup>

Diabetes is one of the diseases for which people have different beliefs about its causation as well as management. Misconceptions are false beliefs which are transferred from one generation to another due to lack of awareness. Some studies showed that, misconceptions and lack of knowledge are significant barriers to adequate management of Diabetes.<sup>3,4</sup>

There is a lack of research related to false beliefs in Diabetes Mellitus. Present study is an attempt to know what misconceptions are prevalent in selected

urban population of Pondicherry and its associated socio-demographic factors.

### Objectives

1. To assess the false beliefs about causation of Diabetes Mellitus.
2. To assess the socio-demographic factors associated with false beliefs about causation of Diabetes Mellitus.

### Material and Methods

A cross sectional study was conducted at Urban Health and Training Centre(UHTC)of Department of Community Medicine of Mahatma Gandhi Medical College and Research Institute, Pondicherry. Ethical permission from Institutional Ethical Committee was obtained for the study.

All adult patients (diabetic and non-diabetic) visiting the UHTC were asked to participate in the study during June-July 2011, those who gave the consent for the study were interviewed. Data were collected by one of the authors. A pretested semi-structured interview schedule in local language was used to collect the data.

Information related to socio-demographic profile, diabetes status and misconceptions about causation of diabetes mellitus was obtained. Diabetic status of the patient was decided based on the self-reporting of disease by the patient.

For data entry and analysis MS-excel and Epi-Info software (7.1.5) were used. Chi-square test was used to see any significant association between different factors and the false beliefs. P value of less than 0.05 was considered statistically significant at 95% level.

### Results

In present study, total 406 adult patients were interviewed. Study group comprised of 59.9% females and 40.1% males. Total 25.9% patients attending to health centre were diabetic. Majority (74.9%) of the participants were Hindu (Table1).The mean age of the participants was 44.2 years (SD 17.2).

Among the nine selected misconceptions, commonest was “Diabetes occurs only in old age” (59.4%) followed by another misbelief that “Diabetes is mainly an inherited disease”. (Table 2). The false belief “Diabetes occurs only in old age”, was significantly more common among men (65.6%) compared to women (55.1%). Religion showed

significant association with most of the misconceptions. Muslims were having more misconceptions as compared to others and the most common belief in each religion was “Diabetes occurs only in old age” (Table 3)

**Table 1: Background characteristics of the study subjects**

Characteristic	No. (%)	
Gender	Female	243(59.9)
	Male	163(40.1)
Religion	Hindu	304(74.9)
	Muslim	45(11.1)
	Christian	57(14)
Education	Illiterate	111(27.3)
	Primary and Middle	189(46.6)
	High school and above	106(26.1)
	Diabetic status	Diabetic
	Non-Diabetic	301(74.1)

**Table 2: Misconceptions about causation of Diabetes Mellitus among participants**

Misconception	No (%)
Diabetes occurs only in old age	241(59.4)
Diabetes predominantly affects men	112(27.6)
Diabetes is mainly a disease of rich people	128(31.5)
Diabetes is not a serious disease	130(32.0)
Diabetes can't be prevented	152(37.4)
Diabetes is caused by past sins	144(35.5)
Diabetes is contagious	105(25.9)
Diabetes is mainly an inherited disease	200(49.3)
Consuming more sugar can directly cause Diabetes Mellitus	179(44.1)

Education was found to be significantly associated with two misconceptions: “diabetes is caused by past sins” and “diabetes is mainly a disease of rich people”. There were no significant differences regarding misconceptions between Diabetics and non-diabetics. Most of the diabetics (57.1%) as well as non-diabetics (60.1%) believed that diabetes occurs only in old age. (Table 4)

### Discussion

Present study has shown that there are many misconceptions about diabetes in people. Misconceptions are barriers for prevention and treatment of a disease and these are often shaped in the minds of people by folklore and hearsay.<sup>5</sup>Most common misconception in present study was “Diabetes occurs only in old age”. As the age advances there is higher risk of developing diabetes but children and middle age people can also develop

**Table 3: Gender and religion wise distribution of misconceptions**

Misconception	Gender			Religion			
	Female (n 243)	Male (n 163)	P value	Hindu (n 304)	Muslim (n 45)	Christian (n 57)	P value
Diabetes occurs only in old age	134(55.1)	107(65.6)	0.03*	162(53.3)	36(80)	43(75.4)	0.0004*
Diabetes predominantly affects men	60(24.7)	52(31.9)	0.11	68(22.4)	21(46.7)	23(40.4)	0.0004*
Diabetes is mainly a disease of rich people	71(29.2)	57(35.0)	0.22	75(24.7)	22(48.9)	31(54.4)	0.0003*
Diabetes is not a serious disease	74(30.5)	56(34.4)	0.4	89(29.3)	22(48.9)	19(33.3)	0.008*
Diabetes can't be prevented	89(36.6)	63(38.7)	0.67	116(38.2)	23(51.1)	13(22.8)	0.05
Diabetes is caused by past sins	92(37.7)	52(31.9)	0.21	102(33.6)	19(42.2)	23(40.4)	0.23
Diabetes is contagious	63(25.9)	42(25.8)	0.97	71(23.4)	22(48.9)	12(21.1)	0.0002*
Diabetes is mainly an inherited disease	114(46.9)	87(53.4)	0.2	149(49)	19(42.2)	32(56.1)	0.34
Consuming more sugar can directly cause Diabetes Mellitus	105(43.3)	74(45.4)	0.66	137(45.1)	20(44.4)	22(38.6)	0.72

Figures in parenthesis are percentages, \* significant

**Table 4: Education and diabetic status wise distribution of misconceptions**

Misconception	Education				Diabetic status		
	Illiterate (n111)	Primary & Middle (n189)	High school/above (n106)	P value	Diabetic (n105)	Non-diabetic (n301)	P value
Diabetes occurs only in old age	64(57.7)	114(60.3)	63(59.4)	0.65	60(57.1)	181(60.1)	0.59
Diabetes predominantly affects men	35(31.5)	48(25.4)	29(27.4)	0.25	31(29.5)	81(26.9)	0.6
Diabetes is mainly a disease of rich people	27(24.3)	70(37.0)	31(29.2)	0.02*	30(28.6)	98(32.6)	0.45
Diabetes is not a serious disease	35(31.5)	59(31.2)	36(33.9)	0.79	33(31.4)	97(32.2)	0.88
Diabetes can't be prevented	39(35.1)	83(43.9)	30(28.3)	0.05	36(34.3)	116(38.5)	0.44
Diabetes is caused by past sins	51(45.9)	62(32.8)	31(29.2)	0.01*	40(38.1)	104(34.6)	0.05
Diabetes is contagious	29(26.1)	53(28.0)	23(21.7)	0.49	31(29.5)	74(24.6)	0.32
Diabetes is mainly an inherited disease	61(55.0)	93(49.2)	46(43.4)	0.23	57(54.3)	143(47.5)	0.23
Consuming more sugar can directly cause Diabetes	54(48.6)	79(41.8)	46(43.4)	0.25	50(47.6)	129(42.9)	0.39

Figures in parenthesis are percentages, \* significant

the diabetes. Another common myth was that Diabetes can't be prevented; this signifies the need for education about prevention which includes weight control, physical exercise and a balanced healthy diet. Diabetes being asymptomatic most of the time doesn't interfere with daily routine and patients ignore the condition until they develop some complication.

Nearly half of the participants in our study believed that "Diabetes is mainly an inherited disease", Where as in a study by Rehman et al.<sup>6</sup> in Andhra Pradesh, this belief was seen among 38.5% subjects. Sabra et al.<sup>7</sup> in Saudi Arabia, reported that about two-thirds of the persons believed that DM is mainly an inherited disease. In another study by Ahmed et al.<sup>8</sup> this belief was seen in 70% patients. In the study by Rehman et al.<sup>6</sup> it was observed that 16.5% persons believed that Diabetes is a contagious

disease, while in present study it was about 25%. In our study, we found that nearly half of the participants had false belief that sugar intake can directly cause diabetes, almost similar finding was also seen by Rehman et al.<sup>6</sup>, while this belief was prevalent in 22% subjects in a study by Rai et al.<sup>9</sup> it was reported in 65.9%, 71.6% and 69% subjects in three studies by Sabra et al.<sup>7</sup>, Sharaf et al.<sup>10</sup> and Ahmed et al.<sup>8</sup> respectively in Saudi Arabia. In reality, excessive sugar consumption leads to obesity and obesity is the risk factor for majority of the NCDs but it is unlikely that sugar intake will directly lead to diabetes. People may have thinking that the consumed sugar in required amount is used by the body and remaining sugar appears in the blood.

We studied the relation of gender, religion, education and diabetic status with false beliefs.

Gender was not found to be significant factor associated with most of the myths. When compared for gender, only one belief “Diabetes occurs only in old age” was significantly more in men. Nisar et al.<sup>11</sup> in Pakistan also documented that there was no significant difference between men and women. Contrary finding was seen by Rai et al.<sup>9</sup> in New Delhi.

In our study, we found that religion is an important factor. Muslims were having more myths as compared to Hindus; it indicates low level of awareness among the Muslim population. This fact should be taken into consideration when planning for Information, Education and Communication (IEC) activities related to diabetes. In a study by Rai et al.<sup>9</sup>, diabetes myths were seen almost equally among Hindus and Muslims.

Although it is said that educational status is an important factor in determining the health awareness, in the present study the difference was seen only for two misconceptions, while Rai et al.<sup>9</sup> reported that education is a significant factor for most of the myths. There were no significant differences in false beliefs between Diabetics and Non Diabetics. It showed that diabetics were also not aware about their own ailment. Diabetics were not well informed and there was lack of awareness in both the groups (Diabetics and Non-Diabetics). We should utilize the opportunity of diabetic patients’ visits to health centers to provide health education regarding their condition and the prevention in other people.

The health awareness level even among the diabetics in a study done by Ahmed A et al.<sup>8</sup> in Saudi Arabia implies the current need of community based health education activities viewing the submerged portion of ice-berg in community.

**Conclusion:** There were many false beliefs found among the adult population attending the urban peripheral health center. The common ones were of occurrence of diabetes in old age, consuming more sugar directly leads to causation of diabetes and diabetes is mainly an inherited disease. The results of our study suggested that people are having less knowledge and awareness about the disease and there is a need to fill the knowledge gap.

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