



Research Article

SOCIO-DEMOGRAPHIC PROFILE OF PATIENTS WITH TYPE 2 DIABETES MELLITUS ATTENDING A TERTIARY CARE AYURVEDA HOSPITAL IN CENTRAL INDIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Type 2 Diabetes Mellitus (T2DM) is a major non-communicable disease with increasing burden in India. Sociodemographic characteristics influence healthcare access and prevention. **Objective:** To describe the sociodemographic profile of patients with T2DM attending a tertiary care Ayurveda hospital in Central India. **Materials and Methods:** A hospital-based descriptive cross-sectional study included 950 patients attending the Diabetes Clinic of Pt. Khushilal Sharma Government (Autonomous) Ayurveda College and Institute, Bhopal, from January 2020 to December 2025. Sociodemographic variables were recorded using a structured Case Record Form and analysed descriptively. **Results:** Of 950 participants, 586 (61.68%) were male and 364 (38.32%) females; 89.68% were urban residents and 88.53% belonged to the middle socioeconomic class. Service employees (30.53%) and housewives (30.42%) were the largest occupational groups. Mean age was 51.13±10.93 years (range 22–84), with 51–60 years the largest age group (29.89%). A positive family history was reported by 38.11%. **Conclusion:** The findings provide baseline sociodemographic evidence for targeted screening, health education and preventive strategies in Ayurveda healthcare settings.

INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder characterised by hyperglycaemia due to impaired insulin secretion, insulin resistance, or both. It is a major public health challenge associated with microvascular and macrovascular complications.^[1,2] India has a large and increasing diabetes burden, with urbanisation, ageing, dietary transition, physical inactivity and socioeconomic change contributing to this trend.^[7]

T2DM is clinically correlated with *Madhumeha*, a subtype of *Prameha* associated with lifestyle-related Sociodemographic factors influence disease occurrence, healthcare-seeking behaviour and access to care. In Ayurveda, factors.^[8,10] Data describing patients attending tertiary Ayurveda teaching hospitals remain limited. Therefore, this study describes the sociodemographic profile of patients with T2DM attending an Ayurveda hospital in Central India.

AIM

To describe the sociodemographic profile of patients with Type 2 Diabetes Mellitus attending an Ayurveda teaching hospital in Central India.

OBJECTIVES

To assess the sociodemographic characteristics of patients with Type 2 Diabetes Mellitus attending the Diabetes Clinic of Pt. Khushilal

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Sharma Government (Autonomous) Ayurveda College and Institute, Bhopal.

MATERIALS AND METHODS

Study Design: The present study was a hospital-based descriptive cross-sectional observational study conducted to assess the sociodemographic characteristics of patients diagnosed with Type 2 Diabetes Mellitus (T2DM). The study was designed to generate baseline epidemiological evidence regarding the demographic profile of patients attending the Diabetes Clinic of Pt. Khushilal Sharma Government (Autonomous) Ayurveda College and Institute, Bhopal.

Study Setting: The study was conducted at the Diabetes Clinic, Pt. Khushilal Sharma Government (Autonomous) Ayurveda College and Institute, Bhopal, Madhya Pradesh, India. The institute is a Ayurveda teaching hospital that provides specialized outpatient and inpatient healthcare services to patients from Bhopal city and neighbouring districts of Central India.

Study Duration: The study was conducted over a six-year period from January 2020 to December 2025.

Study Population: The study population consisted of patients diagnosed with Type 2 Diabetes Mellitus attending the Diabetes Clinic during the study period. Eligible participants were enrolled consecutively after obtaining written informed consent.

Sample Size: A total of 950 patients with Type 2 Diabetes Mellitus fulfilling the eligibility criteria were included in the study. Since all eligible patients fulfilling the inclusion criteria during the study period were included; therefore, a formal sample size calculation was not performed.

Inclusion Criteria

- Adult patients aged 18 years and above.
- Patients diagnosed with Type 2 Diabetes Mellitus according to the study protocol.
- Patients willing to participate and providing written informed consent.
- A total of 950 patients with Type 2 Diabetes Mellitus fulfilling the eligibility criteria were included in the study. Since all eligible patients fulfilling the inclusion criteria during the study period were included, a formal sample size calculation was not performed.

Exclusion Criteria

- Patients with Type 1 Diabetes Mellitus.
- Patients with gestational diabetes mellitus.

- Patients with secondary diabetes due to endocrine disorders, pancreatic diseases, or drug-induced causes.
- Patients unwilling to participate in the study.
- Patients with incomplete demographic records or missing essential study information.

Data Collection Procedure: Sociodemographic data were collected using a predesigned, structured Case Record Form (CRF) developed for the study. Information regarding age, sex, habitat, occupation, educational status, socioeconomic status, religion, marital status, and family history of Type 2 Diabetes Mellitus was recorded at the time of enrolment by trained investigators. All data were reviewed for completeness and accuracy before being entered into the study database.

Study Variables: The present study evaluated the following sociodemographic variables:

- Age
- Sex
- Habitat (Urban/Rural)
- Occupation
- Educational status
- Socioeconomic status
- Religion
- Marital status
- Family history of Type 2 Diabetes Mellitus

Statistical Analysis: Data were entered into Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) and analysed using descriptive statistical methods. Categorical variables were summarized as frequencies and percentages, while continuous variables were expressed as mean $\pm$ standard deviation (SD), along with minimum and maximum values wherever applicable. As the primary objective of the present study was to describe the sociodemographic profile of patients with Type 2 Diabetes Mellitus, no inferential statistical tests were performed. Missing data were checked before statistical analysis, and only complete records were included in the final analysis.

RESULTS

A total of 950 patients were included. Mean age was 51.13 ± 10.93 years (range 22–84). The largest age group was 51–60 years (29.89%). Males constituted 61.68%; 89.68% were urban residents. Service employees (30.53%) and housewives (30.42%) were the largest occupational groups. Middle socioeconomic class accounted for 88.53%, graduates 32.53%, Hindus 92.11%, and married

participants 97.16%. A positive family history was reported by 38.11%. Detailed distributions are presented in Tables 1–9.

Age Distribution: The mean age of the study participants was 51.13±10.93 years, with an age range of 22–84 years. The highest proportion of patients belonged to the 51–60 years age group (284; 29.89%), followed by the 41–50 years age group (271; 28.53%) and the 61–70 years age group (205; 21.58%). Only 31 (3.26%) participants were aged ≤30 years, while 10 (1.05%) participants were older than 70 years as shown in Table 1.

Table 1: Age Distribution of Study Participants (N=950)

Age group (years)	Frequency (n)	Percentage (%)
≤30	31	3.26
31–40	149	15.68
41–50	271	28.53
51–60	284	29.89
61–70	205	21.58
>70	10	1.05
Total	950	100.00

*Mean age was 51.13±10.93 years; age range, 22–84 years. Percentages are based on the total study population (N = 950).

Sex Distribution: Among the 950 study participants, 586 (61.68%) were males and 364 (38.32%) were females, indicating a predominance of male patients attending the Diabetes Clinic during the study period as shown in Table 2.

Table 2: Distribution of Patients According to Sex (N=950)

Sex	Frequency (n)	Percentage (%)
Male	586	61.68
Female	364	38.32
Total	950	100.00

*Percentages are based on the total study population (N=950).

Habitat: The majority of participants were residents of urban areas (852; 89.68%), whereas only 98 (10.32%) participants belonged to rural areas as shown in Table 3

Table 3: Distribution of Patients According to Habitat (N=950)

Habitat	Frequency (n)	Percentage (%)
Urban	852	89.68
Rural	98	10.32
Total	950	100.00

*Habitat was classified as urban or rural according to the participant's recorded residence.

Occupational Status: Service employees constituted the largest occupational group (290; 30.53%), closely followed by housewives (289; 30.42%). Participants engaged in other occupations accounted for 154 (16.21%), business professionals 121 (12.74%), and retired individuals 96 (10.11%) as shown in Table 4.

Table 4: Distribution of Patients According to Occupation (N=950)

Occupation	Frequency (n)	Percentage (%)
Service	290	30.53
Housewives	289	30.42
Other	154	16.21
Business	121	12.74
Retired	96	10.11
Total	950	100.00

*“Other” includes occupations not separately classified in the study record.

Socioeconomic Status: Most participants belonged to the middle socioeconomic class (841; 88.53%), whereas 61 (6.42%) belonged to the affluent class and 48 (5.05%) belonged to the poor socioeconomic class as shown in Table 5.

Table 5: Distribution of Patients According to Socioeconomic Status (N=950)

Socioeconomic status	Frequency (n)	Percentage (%)
Middle class	841	88.53
Affluent	61	6.42
Poor	48	5.05
Total	950	100.00

*Socioeconomic categories are presented as recorded in the study database.

Educational Status: Graduates represented the largest educational category (309; 32.53%), followed by higher secondary education (211; 22.21%), postgraduates (172; 18.11%), middle

school education (171; 18.00%), primary education (48; 5.05%), and participants without formal education (39; 4.10%) as shown in Table 6.

Table 6: Distribution of Patients According to Educational Status (N=950)

Educational status	Frequency (n)	Percentage (%)
Graduation	309	32.53
Higher secondary	211	22.21
Post-graduation	172	18.11
Middle school	171	18.00
Primary	48	5.05
Uneducated	39	4.10
Total	950	100.00

*Educational categories are presented as recorded in the study database.

Religion: The study population predominantly comprised Hindus (875; 92.11%), followed by Muslims (60; 6.32%), Christians (7; 0.74%), Sikhs (5; 0.53%), and Jains (3; 0.32%) as shown in Table 7.

Table 7: Distribution of Patients According to Religion (N=950)

Religion	Frequency (n)	Percentage (%)
Hindu	875	92.11
Muslim	60	6.32
Christian	7	0.74
Sikh	5	0.53
Jain	3	0.32
Total	950	100.00

*No non-standard abbreviations are used in this table.

Marital Status: Most participants were married (923; 97.16%), while 24 (2.53%) were unmarried and 3 (0.32%) were widowed, as shown in Table 8.

Table 8: Distribution of Patients According to Marital Status (N=950)

Marital status	Frequency (n)	Percentage (%)
Married	923	97.16
Unmarried	24	2.53
Widowed	3	0.32
Total	950	100.00

*No non-standard abbreviations are used in this table.

Family History of Type 2 Diabetes Mellitus: A positive family history of Type 2 Diabetes Mellitus was reported by 362 (38.11%) participants, whereas 588 (61.89%) participants had no family history of diabetes as shown in Table 9.

Table 9: Distribution of Patients According to Family History of Type 2 Diabetes Mellitus (N=950)

Family history	Frequency (n)	Percentage (%)
Yes	362	38.11
No	588	61.89
Total	950	100.00

*Family history was recorded as reported in the Case Record Form.

Summary of Major Findings

Overall, the study population predominantly consisted of middle-aged adults (mean age 51.13 ± 10.93 years), male patients (61.68%), urban residents (89.68%), married individuals (97.16%), and participants belonging to the middle socioeconomic class (88.53%). Service employees and housewives together constituted approximately 61% of the study population, while more than one-third (38.11%) reported a positive family history of Type 2 Diabetes Mellitus.

DISCUSSION

The study population was predominantly middle-aged, male, urban and from the middle socioeconomic class. The mean age and concentration in the fifth and sixth decades are broadly consistent with Indian diabetes epidemiology.^[3,5] Male predominance has also been reported in Indian studies.^[3,7] The high proportion of urban residents may partly reflect the location and referral pattern of the study hospital and should not be interpreted as population prevalence.

The occupational and socioeconomic distribution describes patients attending this tertiary Ayurveda clinic rather than establishing causal associations. A positive family history in 38.11% highlights the importance of risk assessment and screening.^[5,7] From an Ayurvedic perspective, the predominance of urban and middle-aged participants is relevant to lifestyle-oriented prevention and the classical concepts of *Prameha/Madhumeha*.^[8,10]

The study provides a large hospital-based dataset, but its single-centre design limits generalisability. The cross-sectional descriptive design does not permit causal inference. Clinical, biochemical and treatment-outcome variables were outside the scope of this manuscript.

The findings of the present study have important public health implications. The predominance of urban, middle-aged, and middle socioeconomic status individuals suggests that diabetes prevention programmes should prioritise opportunistic screening, workplace health promotion, lifestyle modification, dietary counselling, and community-based awareness activities. Ayurveda teaching hospitals can play an important role in integrating preventive healthcare, evidence-based Ayurvedic interventions, and health education into comprehensive diabetes management.^[1,13,15,17]

Overall, the present study provides valuable baseline epidemiological evidence regarding the sociodemographic profile of patients with Type 2 Diabetes Mellitus attending a tertiary care Ayurveda teaching hospital in Central India. The findings may serve as reference data for future multicentric studies and support the development of targeted diabetes prevention and health promotion strategies within the AYUSH healthcare system. Comparison with previous studies the overall demographic profile observed in the present study is broadly consistent with findings reported by the ICMR-INDIAB Study, CURES, and other Indian epidemiological investigations, particularly with respect to age distribution, male predominance, urban residence, and the contribution of family history to Type 2 Diabetes Mellitus. Minor variations in occupational and socioeconomic characteristics may be attributable to regional differences and the hospital-based nature of the present study.^[1,13-15,18]

CONCLUSION

The present hospital-based cross-sectional study provides baseline evidence on the sociodemographic profile of patients with Type 2 Diabetes Mellitus attending an Ayurveda teaching hospital in Central India. Patients were predominantly middle-aged, male, urban residents, married, and from the middle socioeconomic class, with service employees and housewives constituting the largest occupational groups. More than one-third reported a positive family history. These findings support targeted screening, lifestyle modification, health education, and preventive strategies within

AYUSH healthcare settings. Future multicentric studies involving diverse populations are warranted to improve generalizability and strengthen epidemiological evidence on Type 2 Diabetes Mellitus in India.

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