

Prevalence of Type 2 Diabetes and Indian Diabetes Risk Score Assessment in a selected urban area, Coimbatore, Tamilnadu

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ABSTRACT

The main objective of this study was to assess the prevalence of Type 2 Diabetes and Indian Diabetes Risk Score assessment in a selected urban area in Coimbatore. A descriptive survey design was used. Samples were selected using non probability purposive sampling technique. Data were collected and analyzed using Descriptive statistics. The results of the study revealed that prevalence of Type 2 Diabetes was 22.6 % (113). Among 500 samples 36.6% were found to have high risk (IDRS score >60) for Type 2 Diabetes.

Key words: Type 2 Diabetes Mellitus, Prevalence.

Introduction

Evidence that type 2 diabetes is a disease of lifestyle comes from studies of populations that have dramatically altered their lifestyle over a brief time span. For example Yemenite Jews who immigrated to Israel in 1949 had one of the lowest rates of type 2 diabetes in the World – less than 1 case per 1000 individuals. Thirty years later, the same population, later adapted to a Western lifestyle in Israel, had a rate of almost 12 cases of type 2 diabetes per 1000 individuals. A number of factors in combination make Indians highly susceptible to Diabetes. The Indian diet is rich in carbohydrates and saturated fats. A typical Indian diet has more calories and sugar than required by the body. This is the cause of obesity, which in turn leads to diabetes. Urban migration and change in lifestyle is another factor that must be considered in the study of diabetes in India.

Methodology

Research approach: Descriptive approach was used to assess the prevalence of Type 2 Diabetes and Indian Diabetic Risk score assessment among people aged 20 yrs and above residing in the selected urban area.

Research design: Descriptive Survey design was used. Door to door survey was done in the selected urban area.

Setting: One urban area named Madhiyzhagan Nagar located in Suler, Coimbatore District.

Population: People residing in the selected urban area Madhiyzhagan Nagar located in Suler, Coimbatore District. Total population is 2048. Sample size and Sampling technique: 500 People meeting the sampling inclusion criteria were selected using the Non Probability purposive sampling technique

Criteria for sample selection:

1. Both men and women aged 20 yrs and above
2. Both men and women residing in the selected community area.
3. People who can read and write Tamil.
4. People who are willing to take part in the study.

Details about the tool: The tool consisted of two sections Sec A-Interview Schedule to assess the Demographic variables and Sec B-Indian Diabetes Risk Score assessment tool developed by Madras Diabetes Research Foundation, Chennai. Ethical Considerations: Institutional Ethical Clearance was obtained. Prior permission was obtained from the Deputy Director of Health Services Coimbatore District to carry out the research. Data Collection Procedure: Door to door survey was conducted and data were collected using the above mentioned tool.

Review of Literature

Arun Gangadhar Ghorpade et al (2007) conducted a population based study of the incidence and risk factors of Diabetes in rural Pondicherry. A sample of 1223 adults >25 years of age from two villages of Pondicherry were selected using cluster random sampling. Data on risk factor exposure were collected using a structured questionnaire, anthropometric tests and Fasting Blood Glucose assessments. During 2937 person years of follow up 63 new cases of Type 2 Diabetes Mellitus occurred giving an incidence of rate of 21.5% /1000PY. Almost one third (31.7%) of cases occurred in people aged below 40yrs. **Hussain A et al(2005)** did a study on prevalence of Type 2 Diabetes Mellitus with its associated risk factors between rural and urban populations in Bangladesh. A total of 1555 subjects from urban and 4757 from rural communities (age \geq 20) were randomly selected in a cross sectional survey. Fasting Blood sugar and Post prandial blood sugar were determined after a 75g oral Glucose load for a selected number (urban 476, rural 1046). Results of the study revealed a higher prevalence of Diabetes in Urban (8%) compared with (2.3%) rural population. Age, Sex, Waist to hip ratio for men were significant risk factors for both urban and rural subjects.

Results and Discussion

Among the 500 samples prevalence of Type 2 Diabetes was 22.6 % (113) Out of this (113), 81 were diagnosed to have Type 2 Diabetes for more than 1 year. The findings of this study are consistent with the National Urban Diabetes Survey (NUDS)-(2001) a population based study done in six metropolitan cities across India. The study revealed that the prevalence in southern part of India to be higher-13.5% in Chennai, 12.4% in Bangalore, and 16.6% in Hyderabad compared to eastern India (Kolkatta), 11.7% and western India (Mumbai), 9.3%. Among 500 samples 36.6% were found to have high risk (IDRS score >60) for Type 2 Diabetes this is also consistent with the above mentioned study findings that there were 14% of the samples with a high risk of conversion to Diabetes.

Table 1 –Frequency and Percentage distribution of Demographic variables

Demographic variables	Frequency	Percentage
Age in Years		
20-29	158	31.6
30-39	121	24.2
40-49	100	20.0
50-59	70	14.0
>59	51	10.2
Gender		
Male	244	48.8
Female	256	51.2
Dietary Pattern		
Vegetarian	21	4.2
Non-Vegetarian	457	91.4
Ova vegetarian	22	4.4
Occupation		
Unemployed	159	31.8
Govt employee	14	2.8
Professional	212	42.4
Private	109	21.8
Self	6	1.2
Retired	0	0.0
Income/month		
Nil	166	33.2
<Rs 5000/	137	27.4
Rs 5001-10000/	174	34.8
Rs 10001-15000/	18	3.6
Rs 15001-20000/	3	0.6
>Rs 20000/	2	0.4

Table 2 –Frequency and Percentage distribution of Behavioral and Clinical variables

Behavioral and Clinical variables	Frequency	Percentage
Level of Physical Activity required to perform work		
Vigorous	155	31.0
Moderate	239	47.8
Mild	106	21.2
Engaged in Physical Activity		
Yes	269	53.8
No	231	46.2
Is yes, level of activity		
Vigorous	76	28.3
Moderate	104	38.7
Mild	89	33.0
Family history of Type II Diabetes Mellitus		
Yes	158	31.6
No	342	68.4
Diagnosed already with Type II Diabetes Mellitus		
Yes	113	22.6
No	387	77.4
If yes, Duration		
<1 year	32	28.3
>1 year	81	71.7
Smoking Habit		
Yes	47	9.4
No	453	90.6
Alcoholism habit		
Yes	55	11.0
No	445	89.0

Table-3-Indian Diabetic Risk Score assessment

Risk Factor	Frequency	Percentage
Age		
< 35 years	212	42.4
35-49 years	167	33.4
≥ 50 years	121	24.2
Waist circumference		
Female		
< 80 cm	96	
80-89 cm	133	37.5
≥ 90cm	27	51.9
Male		10.6
< 90 cm	73	
90-99 cm	104	29.9
≥100 cm	67	42.6
		27.5
Physical activity		
Vigorous	76	15.2
Moderate	104	20.8
Mild	89	17.8
No exercise	231	46.2
Family History		
Two Non Diabetic parents	342	68.4
Either Parent Diabetic	115	23.0
Both Parent Diabetic	43	8.6

Table-4-Level of Risk based on Indian Diabetic Risk Score assessment

Level of Risk	Frequency	Percentage
Low risk (<30)	89	17.8
Medium risk (30-60)	228	45.6
High risk (≥60)	183	36.6

Conclusion

India leads the world with largest number of Diabetics. The primary reason for this is changes in dietary pattern and decreased physical activity as evident from the higher prevalence of Diabetes in urban population. In addition to this trend early onset of Diabetes would increase the economic burden of family and the country at large in managing the disease. Early identification at risk individuals and appropriate life style modification would definitely reverse this trend.

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