

**Short Communication****INDIAN DIABETES RISK SCORE FOR SCREENING OF UNDIAGNOSED DIABETIC SUBJECTS OF BHOPAL CITY****S Nandeshwar<sup>1</sup>, Vishal Jamra<sup>2</sup>, DK Pal<sup>3</sup>**<sup>1</sup>Associate Professor, <sup>2</sup>Assistant Professor, <sup>3</sup>Professor & HOD, Department of Community Medicine, Gandhi Medical College, Bhopal (MP).**Correspondence:** drnandeshwar11@indiatimes.com**Keywords:** IDRS, sensitivity, specificity.**INTRODUCTION**

Diabetes as a non communicable disease is significant public health problem the prevalence rate all the world over is raising. Diabetes Mellitus is characterized by hyperglycemia and disturbance of carbohydrate, fat and protein metabolism that are associated with absolute or relative deficiency of insulin action and/or insulin secretion. Therefore although diabetes is an endocrine disease in origin its major manifestations are those of metabolic diseases (WHO). The world health organization (WHO) estimates that more than 180 million people worldwide have diabetes. These numbers will more than double over the next two decades, to reach a total of 366 million by 2030(99). Most of this increase will occur as a result of a 150% rise in developing countries. It is estimated that the developing countries will bear the brunt of diabetes epidemic to the extent of 77% of the global burden in the 21<sup>st</sup> century (102). World over the prevalence of adult diabetes was around 4.2% in the year 2000 and is likely to rise 5.4% by the year 2025. In India, Prevalence of disease in adult was found to be 2.4% in rural and 4.0-11.6% in urban dwellers. The government of India has initiated the National Diabetes Control Programme on pilot basis during 7<sup>th</sup> five year plan in 1987 in some district of Tamilnadu, J&K and Karnataka. For such programme to be successful, it is necessary to determine the cost effective method for identifying undiagnosed diabetic cases in our country. Diabetes Risk Score was developed by CURES based on multiple logistic regression model using four simple parameters namely age, abdominal obesity, physical activity and family history. It is the cost effective method for early diagnosis of Diabetes.

**MATERIAL METHODS**

Cross Sectional study was conducted in 2008–2009 at the Bhopal city, Madhya Pradesh, India. In which 250 individuals of the age group of >25yrs residing in Shaheed Nagar (Lower Socio-economic strata) & Idgah Hills (Higher Socio-economic strata) of Bhopal were included. But confirmed cases of Diabetes Mellitus were excluded. Selection of houses was done in study

areas from one end of colony. We were a group of 6 volunteers of department of community medicine of GMC, Bhopal. We conducted household surveys in above mentioned colonies according to our inclusion criteria. As per individuals responses we collected the data for IDRS i.e. Age, Abdominal obesity, Physical Activity and Family History. After that we collected the blood samples after overnight fasting 5 ml venous blood was collected in glass vials. Samples were tested in the Central Pathology Lab of Gandhi Medical College, Bhopal. Those subjects whose blood glucose was elevated were made to undergo postprandial. After the Pathological Investigations we observed the sensitivity and specificity of IDRS. Data Analysis was done using Epi-info software.

**Table 1:** Diabetic cases with level of risk by IDRS

Level of risk	No. of persons	Diabetic cases (%)
Low < 30	07	00 (0.0)
Moderate >30-50	71	06 (8.4)
High >60	172	88 (51.16)

**OBSERVATIONS AND DISCUSSION**

In this study we have observed 250 subjects from lower and higher socio-economic community of Bhopal city. Out of these subjects (2.80%) were in low risk, (28.40%) in moderate risk and (68.80%) were in high risk group as per the IDRS. No diabetic subject was observed in low risk group, (8.40%) in moderate risk group and (51.16%) were diagnosed as diabetes.

The observation revealed that the IDRS is highly sensitive and specific for diagnosing diabetes in community. The specificity of IDRS is increasing with increasing risk in subjects, so that this score is more useful for screening the diabetes in Indian Community.

The similar findings were reported by V. Mohan, R. Deepa et al in the Journal of Association of physicians of India.

**Table 2:** Sensitivity and specificity of IDRS

IDRS	No of Subjects (%)	sensitivity	specificity	+ve predictive	-ve predictive
≥10	250 (100)	100	00	37.6	00
≥20	250 (100)	100	00	37.6	00
≥30	245(98)	100	3.2	38.36	100
≥40	232(92.8)	100	11.53	40.5	100
≥50	212(84.8)	98.93	23.71	43.86	97.3
≥60	175(70)	94.68	44.87	50.85	93.33
≥70	122(48.8)	76.59	67.94	59.01	76.81
≥80	58(23.2)	46.8	91.02	75.86	73.94
≥90	9(3.6)	5.3	97.43	55.55	63.07
≥100	1(0.4)	1.06	100	100	61.4

**CONCLUSION**

The IDRS is highly sensitive test for early diagnosis of diabetes in Indian community and specificity of IDRS is increasing with increasing risk in the subjects. And it is observed that it is a cost effective method for diagnosing early diabetes.

**REFERENCES**

1. Textbook of Community Medicine by Sunderlal 2<sup>nd</sup> edition 2009.
2. K. Park. Park's Textbook of Preventive and Social Medicine 20<sup>th</sup> edition. M/S Banarasi Das Bhanot, Jabalpur, 2009.
3. V. Mohan, R. Deepa et al. IDRS for Diagnosing Diabetes. J of Association of Physicians of India.2005; 53