

Type-2 Diabetes Mellitus: Risks amongst urban India

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Abstract

Background and objectives: Diabetes has arisen as a significant wellbeing challenge in India because of a quick ascent in the number of diabetes cases. The early ID of high danger people through screening and early mediations as a way of life adjustments and treatment would help in the anticipation of diabetes and its entanglements. This review was done to survey the danger of type 2 diabetes mellitus (T2DM) in an urban slum population utilizing the Indian Diabetes Risk Score (IDRS) and to decide the variables related to high-risk scores. **Methods:** A people group-based cross-sectional review was led among the urban slum population in South Bihar, India. A sum of 136 review members was chosen haphazardly from the records. A pre-planned and pre-tried organized survey was utilized for information assortment. Appraisal of hazard of T2DM was finished utilizing the IDRS. **Results:** Of the 136 review members, 101 (74.3%) were at high danger (IDRS ≥ 60) trailed by 32 (23.5%) at moderate danger (IDRS 30-50) and three (2.2%) at generally safe (IDRS < 30). 62 (92.5%) people in the age bunch ≥ 50 yr were at high danger contrasted with 34 (63%) in 35-49 yr age bunch. Most (n=35, 87.5%) of stationary specialists were at high danger contrasted with those utilized in moderate (n=52, 75.4%) and exhausting work (n=14, 51.9%). **Conclusion:** Nearly three-fourths (74.3%) of the review members were at a high danger of creating T2DM. Age, sort of occupation, stomach weight, general corpulence, and hypertension were the variables fundamentally connected with high danger IDRS score.

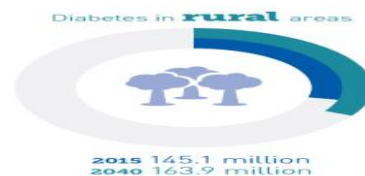
Keywords: Determinants - diabetes - risk - screening - T2DM - urban slums

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Introduction

Globally around 9.3 percent of grown-ups (for example around 463 million individuals) are living with diabetes[1]. India positions second to China for the biggest number of diabetes cases on the planet. The greater part of people with diabetes stays uninformed about their diabetic status, in this manner untreated prompting entanglements. Low mindfulness concerning diabetes and helpless consistence to the management are among the significant difficulties. Hereditary defenselessness combined with inexpensive food culture and inactive lifestyle is the main consideration for the ascent in

diabetes cases in India. The ID of high-risk people by screening and early intercessions would help in the avoidance of diabetes and its complications. The Indian Diabetes Risk Score (IDRS) is a straightforward and practical instrument for the early discovery of undiscovered cases locally. Consequently, the current review was done to survey the danger of type 2 diabetes mellitus (T2DM) in an urban slum population in southern India utilizing IDRS and to decide the elements related to the high-risk score[2-4]



Material & Methods

A people group-based cross-sectional review was directed among the urban slum population from April 1 to May 31, 2021, at Nalanda Medical College Hospital, Patna, India. Of the absolute 824 families nearby, 136 were chosen arbitrarily. One person from every one of these chosen families was chosen haphazardly. People who matured 30 year or more without any set of experiences of diabetes and were ready to partake in the review were incorporated. A pre-planned and

pre-tried organized poll was utilized for information assortment. The information contained socio-segment factors, factors connected with IDRS, and estimation of circulatory strain (BP) and weight file (BMI). The IDRS parts were scored as follows: age: < 35 yr (0 scores), 35-49 yr (20 scores), and ≥ 50 yr (30 scores); stomach corpulence (midsection circuit): < 80 cm in females and < 90 cm in guys (0 scores), 80-89 cm in females and 90-99 cm in guys (10 scores), and ≥ 90 cm in females and ≥ 100 cm in guys (20 scores); active work: work out (ordinary) in addition to exhausting work (0 scores), work out (standard) or arduous work (20 scores), and no activity and inactive work (30 scores); family background of diabetes: no family ancestry (0 scores), either parent with diabetes (10 scores), and the two guardians with a background marked by diabetes (20 scores); and people with complete IDRS of ≥ 60 , 30-50 and < 30 were ordered as high, moderate and okay, respectively[7-8]. The example size was determined utilizing OPENEPI programming. For a commonness of 8.7 percent for diabetes according to the International Diabetes Federation Report 9 and 95 percent certainty level and five percent outright accuracy, the example size determined was 127. An

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aggregate of 136 people was remembered for the review. Factual examination: Statistical investigation was finished utilizing SPSS programming variant 22 (IBM Corp., Armonk, NY, USA). Information was examined by working out recurrence, rates, mean, and standard deviation. Pearson's Chi-square test and ANOVA test were utilized as a trial of importance.

Results and Discussion

An aggregate of 136 people was surveyed for the danger of T2DM utilizing IDRS. The socio-segment qualities of the members are as displayed. The mean age of the people was 51.20 ± 15.11 year [median=60, range=30-90 year] and the male/female proportion was 72:100. The greater part ($n=101$, 74.3%) were at a high danger of creating T2DM followed by 23.5 percent ($n=32$) at moderate danger. Just three (2.2%) were generally safe. Greater part of people ($n=62$, 92.5%) old enough gathering ≥ 50 year were at high danger contrasted with 35-49 year ($n=34$, 63%; $P<0.001$). These perceptions were equivalent to a review led in Pune. More females (79.7%) when contrasted with guys (66.7%) were at high risk of diabetes ($P<0.08$). A review led in north India likewise showed no huge relationship between sex and hazard score [2]. No huge affiliation was noted among training and hazard of diabetes. Be that as it may, Patil et al noticed a huge relationship between low schooling and high danger status. In the current review, 87.5 percent of people with stationary work were at high danger contrasted with those in moderate (75.4%) and demanding work (51.9%) ($P<0.01$). People having a place with financial classes I and V (83.3% each) were at high risk of creating T2DM. Higher risk in the lower-working class was seen in a study [13]. In the current review, 79.4 percent of the people with a family background of diabetes and 72.5 percent with no family ancestry were at high risk like a prior study [11]. The mean age of the people in the high danger class was higher than in moderate and generally safe classification ($P<0.001$). Likewise, altogether higher mean systolic ($P<0.05$) and diastolic BP ($P<0.05$) was noted among the people in high danger classification. Hypertension was comorbidity in 44.9 percent of diabetics in a study [14]. The mean midsection perimeter was altogether more in the high-risk bunch among the two men ($P<0.001$) and ladies ($P<0.001$), demonstrating a more danger of diabetes in those with stomach stoutness as revealed earlier [15]. The little example size because of restricted time was a significant limitation of the review.

Conclusion

Taking everything into account, almost three-fourth (74.3%) of the review members had a danger score of >60 by IDRS. Age, sort of occupation, stomach stoutness, general weight, and high BP were the danger factors altogether connected with high danger score. Escalated data, training, and correspondence endeavors would be needed at the local area level for the anticipation of diabetes.

References

1. Chowdhury R, Mukherjee A, Lahiri SK. A study on distribution & determinants of Indian Diabetic Risk Score (IDRS) among the rural population of West Bengal. *Natl J Med Res* 2012; 2: 282-6.
2. Muninarayana C, Balachandra G, Hiremath SG, Iyengar K, Anil NS. Prevalence and awareness regarding diabetes mellitus in rural Tamaka, Kolar. *Int J Diabetes Dev Ctries* 2010; 30 : 18-21.
3. Taruna S, Juhi K, Dhasmana DC, Harish B. Poor adherence to treatment: A major challenge in diabetes. *J Indian Acad Clin Med* 2014; 15: 26-9.
4. Mohan V, Sandeep S, Deepa R, Shah B, Varghese C. Epidemiology of type 2 diabetes: Indian scenario. *Indian J Med Res* 2007; 125: 217-30.
5. Geetha M, Kalaivani A, Raja DK. Application of Indian diabetic risk score in the screening of an undiagnosed rural population of Kancheepuram district, Tamil Nadu - A cross-sectional survey. *MRIMS J Health Sci* 2014; 2: 81-3.
6. Mohan V, Anbalagan VP. Expanding role of the Madras diabetes research foundation-Indian diabetes risk score in clinical practice. *Indian J Endocrinol Metab* 2013; 17: 31-6.
7. Mohan V, Somannavar S, Datta M. A simplified Indian diabetes risk score for screening for undiagnosed diabetic subjects. *J Assoc Physicians India* 2005; 53: 759-63.
8. International Diabetes Federation. IDF diabetes atlas. 7th ed. Brussels: IDF; 2015.
9. Gore CA, Subramanian M. Diabetes risk in an urban slum population in Bangalore India. *Int J Prevent Public Health Sci* 2016; 1: 11-4.
10. Patil RS, Gothankar JS. Assessment of risk of type 2 diabetes using the Indian diabetes risk Score in an urban slum of Pune, Maharashtra, India: A cross-sectional study. *WHO Southeast Asia J Public Health* 2016; 5: 53-61.
11. Misra A, Pandey RM, Devi JR, Sharma R, Vikram NK, Khanna N. High prevalence of diabetes, obesity, and dyslipidemia in urban slum population in Northern India. *Int J Obes Relat Metab Disord* 2001; 25: 1722-9.
12. Arora V, Malik JS, Khanna P, Goyal N, Kumar N, Singh M. Prevalence of diabetes in urban Haryana. *AMJ* 2010; 3 : 488-94.
13. Dasappa H, Fathima FN, Prabhakar R, Sarin S. Prevalence of diabetes and pre-diabetes and assessments of their risk factors in urban slums of Bangalore. *J Family Med Prim Care* 2015; 4: 399-404.
14. Shobha MV, Deepali A. Indian Diabetic Risk Score (IDRS): A novel tool to assess the risk of type 2 diabetes mellitus. *Indian J Basic Appl Med Res* 2016; 5: 106-10.
15. Vasudevan J, Mishra AK, Singh Z. An update on B. G. Prasad's socioeconomic scale. *Int J Res Med Sci* 2016; 4: 4183-6.

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