

Prevalence of diabetes in urban areas of Ramghar Jharkhand

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Abstract: Diabetes is a public health issue of the century. Prevalence of diabetes is on a rise. Mortality and morbidity is continuously increasing. Study on this topic is really important to plan policies and preventing the disease.

Materials and Methods: a community based cross sectional study was conducted in urban areas. Sadar area was randomly selected for the study. The sample size was 800.

Results: Out of 800 participants, 780 finally gave their consent for the study and there data was collected. Overall 53% of the participants had central obesity and diabetes mellitus was found in 8.2% of the participants.

Conclusion: urban areas is showing lifestyle changes and the prevalence is constantly rising.

Index Terms- Diabetes, Prevalance, Jharkhand

Introduction:

Diabetes is a fastest growing metabolic disorder affecting all section of the population. Urban areas as well as rural areas are affected by it. It is a state of chronic hyperglycemia due to defects in insulin secretion, insulin action or both. It develops when the pancreas is affected and insulin is not produced in the body. Insulin clears glucose from the blood. So when there is too little insulin in the body, blood sugar rises leading to a condition called hyperglycemia. Although family history increases an individual's risk of type 2 diabetes, there is strong evidence that modifiable risk factors such as obesity and physical inactivity are the main non-genetic determinants of the disease.¹

Diabetes also causes several other diseases like blindness, kidney diseases, amputations, and heart disease. Coronary heart disease is the main cause of death with person of diabetes. Dietary planning and lifestyle intervention with people with impaired glucose tolerance or in general to whole of the population can lower the risk of diabetes as a whole.

In our country where under nutrition and poverty is an issue non communicable diseases like heart disease or hypertension and diabetes sounds absurd.

The Indian Council of Medical Research–India DIABetes (ICMR– INDIAB) study was initiated, in a phased manner, to estimate the prevalence of diabetes in India. This paper presents the results of phase I of this study, involving three states and one union territory (UT), overall representing a population of 213.5 million people (18.1% of India's population)².

Materials and Methods:

The study was conducted in Ramghar. It was made a district on 12 September 2007. It lies in the heart of Jharkhand state. It is a mining, industrial and cultural hub. It has a population of 9,49,443.

Type of Study: Communtiy based epidemiological study.

Study Design: Cross-sectional,observational and analytical study.

❖ **Sample Size:**

Sample size calculation:

The sample size was calculated by using the combined prevalance from previous study by ICMR-INDIAB³.

Assuming an expected prevalance of 8.25%, allowing an absolute error of 2%, level of confidence of 5% and a non response rate of 10%, the sample size was estimated to be 800.

Sampling Design:

Sadar area was randomly selected our of six blocks in Rmanghar district.

❖ **Study Area:**

Selected Urban Ramghar ,Jharkhand state, India. One individual was selected from the selected household.

❖ Definition of population

Adults above 30 years residing in selected areas of Jharkhand, India.

❖ Study variables

- ▶ Socio-economic status,
- ▶ Demographic factors,
- ▶ Anthropometric
- ▶ Life style pattern,
- ▶ Dietary intake status,
- ▶ Biochemical parameters and

. Control: Not required.

❖ Inclusion Criteria:

- Usual resident of the selected locality
- All adults (both men & women) aged 30 years and above.
- Mentally stable to provide the details required for the study.
- Co-operative women.
- Participants with previously diagnosis and in medications related to it.

❖ Exclusion Criteria

- Physically and mentally challenged individuals.
- Non-cooperative people.

Biochemical investigation: participants were asked to fast for 10-12 hours and the fasting blood samples were taken and investigated for diabetes. Trained health workers collected the samples. Written consent was taken from the participants in their local languages.

House to house survey was conducted of 800 participants. People who were not willing to participate in the survey were marked as non responders.

Socio demographic data, anthropometric data were collected. Questions regarding their family history, physical activity, smoking, tobacco chewing were also collected.

The prevalence of diabetes was defined as fasting glucose between ≥ 126 mg/dl and pre diabetes 100-125mg/dl (ADA recommendation).

The data collected were coded and Microsoft Excel was used and statistical analysis was done using SPSS. Mean, median, mode were used for socio demographic variables, morbidity.

Results:

Out of total participants 780 were ready for the study and data were collect of them.

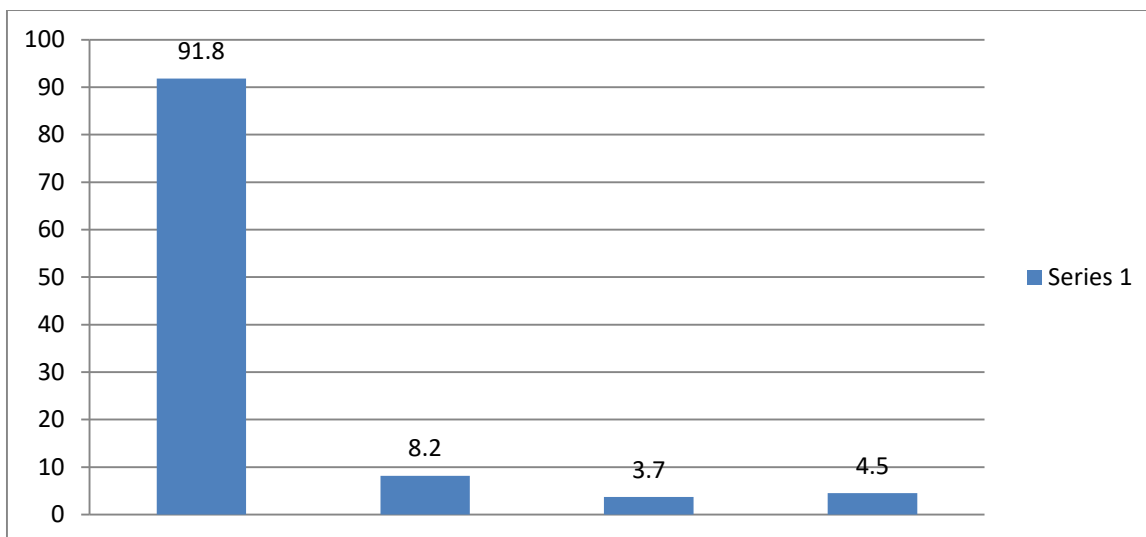
Out of total 780 participants 350 were females and 430 were males.

35% of the participants were in the age group of 30-40 years, 28.5% between 40-50 years , and 36.5% were in the age group of 50-60 years.

Newly diagnosed diabetes were 4.5%.

Table 1: Prevalence of diabetes mellitus and pre diabetes in study population

	Total N= 780
Normal	91.8%
Prevalence of diabetes	8.2%
Known diabetes	3.7%
Newly detected diabetes	4.5%



Discussion:

In our study the prevalence of diabetes mellitus was found to be 8.2%. Very few studies are available in this area. Urbanization, low physical activity results in rise in the prevalence of DM in this area.

Physical activity is also decreasing as people are getting mechanized. Change in the dietary pattern is also affecting the health of the population.

Over weight and obesity alcohol abuse, addiction are modifiable risk factors for diabetes. Older age and genetic factors are non modifiable factors for diabetes in our country.

Two studies in India, both from Chennai, described the incidence of T2DM. One of these, a study among staff of the Indian Institute of Technology and their relatives in 1992, showed that in an urban population, the incidence of T2DM was 22/1000 PY over one year.⁷ The second study in India in 2005 reported an incidence of 20.2/1000 PY over eight years in subjects > 20 years of age³.

In a study conducted by Himanshu Madaan et.al in 2013 in Sonapat 18.43% of the population were affected by diabetes. This is quite high than our study.

Comparing with NFHS3 data where the prevalence was less than 0.5% our study results are very high.

Conclusion:

This study recorded a high prevalence of diabetes in this area. This is a cause of concern for health care professionals. India is becoming a diabetic capital, this should be checked. Lifestyle modification, physical activity, healthy eating habits, avoiding processed and canned food items will be of utmost priority. One should maintain normal glucose levels in normal range or close to normal to prevent or reduce the risk of complication of diabetes.

Blood pressure and lipid profile should also be maintained. One of the goals of healthy lifestyle and prevention of disease would be attainment of optimal body weight and body fat.

References

1. Mokdad AH, Bowman BA, Ford ES, Vinicor F, Marks JS, Koplan JP. The Continuing Epidemics of Obesity and Diabetes in the United States. *JAMA*. 2001;286: 1195-1199.
2. Anjana RM, Pradeepa R, Deepa M et al (2011) The Indian Council of Medical Research–India Diabetes (ICMR–INDIAB) Study: methodological details. *J Diabetes Sci Technol* 5:906–914
3. Mohan V, Deepa M, Anjana RM, Lanthorn H, Deepa R. Incidence of diabetes and pre-diabetes in a selected urban south Indian population (CUPS-19). *J Assoc Physicians India*. 2008 Mar;56:152-7
4. Madaan H, Agarwal P, Garg R, et.al. Prevalence of diabetes mellitus in rural population of Distt. Sonapat. *Int J Med Sci Public Health* 2014; 3 (3);13
5. International Diabetes Federation. Diabetes atlas. 6th edn. Brussels: IDF, 2011. <http://www.idf.org/diabetesatlas> - accessed 14 February 2014
6. Indian Council of Medical Research. Guidelines for management of type 2 diabetes. New Delhi: Indian Council of Medical Research, 2005.
7. India, Office of the Registrar General & Census Commissioner. Census of India 2001. New Delhi, 2001. <http://www.censusindia.gov.in/2011-common/CensusData.html> - accessed 14 February 2014.
8. World Health Organization, Regional Office for South East Asia. Health situation in the South-East Asia Region 1998-2000. New Delhi: WHO- SEARO, 2002. Document No. SEA/HS/222. http://209.61.208.233/LinkFiles/Health_Situation_toc+forward.pdf - accessed 14 February 2014.