

Diabetes among Adult Population in a Rural Community of North Karnataka: A Cross Sectional Study

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Abstract

Introduction: India leads the world with largest number of diabetic subjects earning the dubious distinction of being termed the "diabetes capital of the world". According to the Diabetes Atlas 2006 published by the International Diabetes Federation, the number of people with diabetes in India is currently around 40.9 million and is expected to rise to 69.9 million by 2025 unless urgent preventive steps are taken. Very high levels of diabetes have been reported in urban areas of India, but few data are available for rural regions where >70% of the population lives. **Methods:** The present cross sectional study was conducted in Vantamuri Primary Health Centre (PHC), a field practice area of Jawaharlal Nehru Medical College, Belgaum, Karnataka during December 2011. The target population consisted of all people aged 40 years and above. Urine analysis for sugar was done by uristix method and individuals with positive urine test were subjected to blood sugar examination by glucometer. **Results:** Among the 2553 individuals surveyed, 851 were males and 1702 were females. 151 were diagnosed to have diabetes by blood glucose levels, out of which 62 (41.1%) were males and 89 (58.9%) were females. Hence the overall prevalence of diabetes was 5.91% (151), the prevalence in males being 7.28% and in females 5.22%. Age, BMI, hypertension and family history were found to be significantly associated with diabetes. **Conclusion:** Diabetes in rural areas needs special attention. Focus on health education related to diabetes and other NCD is the need of the hour in rural areas.

Keywords: Diabetes; Adults; Rural community.

Introduction

India leads the world with largest number of diabetic subjects earning the dubious distinction of being termed the "diabetes capital of the world". According to the

Diabetes Atlas 2006 published by the International Diabetes Federation, the number of people with diabetes in India is currently around 40.9 million and is expected to rise to 69.9 million by 2025 unless urgent preventive steps are taken. The so called "Asian Indian Phenotype" refers to certain unique clinical and biochemical abnormalities in Indians which include increased insulin resistance, greater abdominal adiposity *i.e.*, higher waist circumference despite lower body mass index, lower adiponectin and higher levels of sensitive C-reactive protein. This phenotype makes Asian Indians more prone to diabetes and premature coronary artery disease. At least a

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part of this is due to genetic factors.[1]

Compared to urban areas, rural areas experience a higher diabetes prevalence rate. There is ample evidence, however, that rural communities grapple with system-level barriers such as high rates of poverty; limited access to insurance, specialty medical care, and emergency services; and mini-mal exposure to diabetes education, all of which exacerbate the associated complications of detecting and managing diabetes.[2]

Very high levels of diabetes have been reported in urban areas of India, but few data are available for rural regions where >70% of the population lives. A national rural diabetes survey was done between 1989 and 1991 in different parts of the country in selected rural populations using the 1985 WHO criteria which reported a crude prevalence of 2.8 per cent.[3]

Data from a new large-scale survey done in 2005 suggest rural India may soon experience the same epidemic of diabetes.[4]

The prevalence being 4% in the world, 2.4-4 % in South East Asia region and in India it is 11.6% in urban areas, 5.9% in semi-urban and 2.4% in rural areas.[5]

However the prevalence differs from place to place and different studies have shown different figures.

Since information available regarding the prevalence of diabetes mellitus in rural areas is very limited, the present study was undertaken with the objective of determining the prevalence of diabetes mellitus among adult population in a rural community.

Materials and Methods

The present cross sectional study was conducted in Vantamuri Primary Health Centre (PHC), a field practice area of Jawaharlal Nehru Medical College, Belgaum, Karnataka during December 2011. The study area is situated at a distance of approximately 21 kms from Jawaharlal Nehru Medical

College, Belgaum. The PHC has a population of approximately 33,000. The residents of this area are mostly farmers and coolies working on daily wages.

The target population consisted of all people aged 40 years and above residing in the study area.

All the subjects covered over a period of one month were included in the study. Those who refused to take part in the study and those who could not be contacted after three consecutive visits were excluded. Data was collected during the month of December 2011, using a structured and pre-tested interview schedule. Urine analysis for sugar was done by uristix method.

Health workers were given training regarding use of urine strips for detection of glucose and their interpretation. House to house testing of urine sugar was done after taking informed consent. Individuals with positive urine test were referred to PHC. For subjects with history of diabetes and those whose urine analysis for sugar was positive, blood analysis for glucose was done with Accucheck glucometer in the PHC. Cut off point for diagnosis of diabetes was based on WHO criteria 6 i.e the presence of sugar in urine and increased level of glucose in the blood i.e > 126 mg/dl for fasting and > 200 mg/dl for post-prandial by glucometer test strip.

Subjects with positive test were further interviewed for their symptoms and other demographic details including BMI, family history and history of hypertension. Respect of human dignity as well as anonymity and confidentiality of the subject, were maintained throughout.

