Migration Status and Association with Diabetes Prevalence, Risk Factors and Outcomes in the city of Chennai, India

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BACKGROUND

- The UN estimates that 60% of the world will be living in an urban area by 2030
- Rapid urbanization has been linked with increased risk factors to non-communicable diseases, including diabetes mellitus (DM)
- The prevalence of DM has increased in low to middle income countries, particularly in large, urban centers
- Chennai is one of India’s fastest growing cities, driven largely by rural-to-urban migration, and is now India’s 4th largest urban agglomeration

PROJECT GOALS

- Understand the relationship between migration status and risk factors for and prevalence of diabetes, and progression to diabetic complications
- Examine the association between rural-to-urban migration and the clinical profile of diabetes patients presenting at an urban diabetes hospital, and in the city of Chennai at large

MIGRATION STATUS

- Migration status was determined using an interview-led questionnaire
- Patients were asked to characterize areas lived as rural, semi-urban or urban and were asked how many years they lived in each place
- Rural-to-urban migrants were defined as someone who moved from a rural area to an urban area; all others were designated as non-migrants

METHODS

Clinic Population

- Patients were recruited from the waiting rooms in the diabetes inpatient hospital at Dr. Mohan’s Diabetes Specialties Clinic, Gopalapuram, Chennai
- Patients were surveyed with the migration instrument
- Anthropomorphic data, as well as biological data such as A1Cs, fasting blood sugar levels, postprandial test results were extracted for their patients’ first visit and most recent visit and linked with migration instrument
- Diabetic complications, like retinopathy, nephropathy, and neuropathy were noted to track incidence of complications

Field Population

- The Center for Cardiometabolic Risk Reduction in South Asia Surveillance Study (CARRS) is a multicenter study on cardiometabolic risk factors in adult populations in Delhi and Chennai, India, and Karachi, Pakistan
- Subjects were surveyed with the migration instrument in their homes at the time of the one year CARRS follow-up
- Subjects have existing data on baseline risk factors related to diabetes, hypertension and other NCDs

INITIAL RESULTS

Field Population

- N= 536
  - Non-Migrant, Urban N=437 (79%)
  - Rural to Urban Migrant N= 118 (21%)

Clinic Population

- N= 610
  - Non-Migrant, Urban N= 344 (56%)
  - Migrant N= 190 (31%)
  - Non-Migrant, Rural N= 76 (12%)

FUTURE RESEARCH

Clinic Population

- Report on distribution of diabetes risk factors such as gender, education, BMI, fasting plasma glucose, post prandial glucose, hemoglobin A1c, systolic and diastolic blood pressure, and cholesterol
- Report on prevalence of diabetic complications: nephropathy, neuropathy, retinopathy, both overall and between migrant groups
- Report on hazard of complications by migrant group
- Report on the severity of diabetes and diabetic risk factors upon initial presentation to the clinic

Field Population

- Report on the socio-demographic profile of migrants and native city residents and characterize distributions of education, gender, age, and socio-economic status.
- Report on prevalence, both crude and age/gender adjusted, of diabetes, distribution of Body Mass Index (BMI), International Physical Activity Questionnaire (IPAQ), obesity, and waist circumference
- Estimate the predicted probability and odds of diabetes, between migrants and non-migrants
- Examine the effect of duration of residence in a city on odds of diabetes, within the rural-to-urban migrant subsample
- Compare the proportion of undiagnosed cases of diabetes by migrant group

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