

BIOS 600 · Quiz 13.2: Statistical Literacy

Fall 2011

1. **Honor Pledge:** I have neither given nor received unauthorized aid on this assignment.
(Sign and print your name.)

2. Read the abstract on the following page, and answer the questions below. The abstract comes from

Ramachandran, A., Snehalatha, C., Vijay, V., and King, H. (2002), Impact of poverty on the prevalence of diabetes and its complications in urban southern India, *Diabetic Medicine*, 19, 130-135.

(a) What is the primary research question?

(b) What is the study design?

(c) What are the primary variables?

(d) How do the researcher record the primary variables? (nominal, ordinal, interval, ratio?)

(e) What other variables do the researchers consider?



Impact of poverty on the prevalence of diabetes and its complications in urban southern India

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Abstract

Aim The impact of poverty on the profile of diabetes and its complications was studied.

Methods A comparative study of low income group (LIG) (family income Rs. < 30 000/annum (approx. £432) and high income group (HIG) (family income Rs. ≥ 60 000/annum (approx. £864) subjects of ≥ 40 years was done in Madras, India. By screening 1748 LIG subjects (M/W 844/904) 301 diabetic subjects were identified and 218 underwent tests for diabetic complications. Population data available in 635 (M/W 309/326) HIG subjects from the survey were used for comparison of glucose tolerance profile. Complications were studied in 221 diabetic HIG subjects.

Results Age-standardized prevalences of diabetes (12.6% vs. 25.5%; $\chi^2 = 56.9$, $P < 0.0001$) and impaired glucose tolerance (IGT) (8.9% vs. 19.0%) were significantly lower ($\chi^2 = 57.7$; $P < 0.0001$) in the LIG. Hypertension was more common in LIG (53.7% vs. 40.0% in HIG; $\chi^2 = 34.9$; $P < 0.0001$). LIG subjects were more physically active; 73.8% did not go to school. Parameters significantly associated with diabetes were body mass index (BMI), age, higher income, waist-hip ratio and physical inactivity. Higher income, BMI and age were associated with IGT. Diabetic LIG subjects had a higher prevalence of cardiac disease, neuropathy and cataract and a lower prevalence of retinopathy than HIG subjects. The risk variables such as hyperglycaemia, dyslipidaemia, hypertension, smoking and alcohol consumption were more in the LIG group.

Conclusions The urban poor in the developing world has a lower prevalence of diabetes than the urban poor in developed societies. However, they have higher rates of complications of diabetes.

Diabet. Med. 19, 130–135 (2002)

Keywords diabetes, complications of diabetes, poverty, socioeconomic factors, India

Introduction

Socioeconomic environment influences occupation, life style, and nutrition of social classes which in turn would influence the prevalence and profile of glucose intolerance and diabetic complications. A number of studies have addressed this issue in western countries [1–7]. In urban India, there are wide social and economic disparities, but the differences in the profile of

diabetes in the low and high income groups have not been studied in detail. Free health care facilities are available for the economically backward classes, but due to the low level of education and occupational problems, the facilities are not always used.

Epidemiological data from urban southern India had shown a rising prevalence of diabetes in the adult population in the past two decades [8–11]. However, these studies had not focused on the impact of poverty on the profile of diabetes and its complications. This study was therefore designed to look at the impact of poverty on the profile of diabetes and its complications.

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