

Pilot study on the prevalence of diabetes as evaluated from blood glucose measurements in pharmacies in Sénégal

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To the Editor,

Diabetes is a very important health problem, also in developing countries where its diagnosis and monitoring are not easily accessible. There is a relative paucity of data concerning diabetes in Africa, but prevalence, ranging from 0.3% (in Gambia) to 17.9% (in Mauritius), is significantly increasing (1). In Senegal, there are few data. According to King et al. (2) the prevalence was 1.2% in 1995, but today health authorities consider it at about ~2.0%. Women are generally more involved (3) and obesity constitutes a common risk factor in Mali, Tanzania and Nigeria (4), a situation quite comparable with Senegal where female obesity is considered as a criterion of beauty. As costs of screening tests are very high and laboratories are often too far from the population, capillary glycemia determination by glucometers is carried out by pharmacies in every district.

In this study, in 17 pharmacies located in 6 out of the 11 administrative regions through Senegal, 699 subjects (sex ratio F/M = 0.97) were selected randomly and punctured either in a fasting state or at a random time to determine capillary glycemia using three different glucometers, One Touch (Life Scan), Accu-Check (Roche Diagnostics), and Precision QID (Medisense). When results showed values \geq either 7.0 mmol/L on fasting or 11.1 mmol/L at random, the test was repeated the day after in the same conditions. The results were analysed in accordance with WHO criteria for diagnosis of diabetes, in relation with age, sex and area of residence.

Table 1 displays results. Three hundreds and twelve (44.6%) of evaluated subjects were diagnosed as diabetic patients. Among these diabetic patients, 59.3% were newly diagnosed and about two-thirds (65%) were male and most of them (91.3%) were over 40 years old, 61.5% living in urban areas.

The preliminary results obtained in this study showed that in Senegal diabetes is not diagnosed enough and the available data seem to underestimate its frequency. As in all developing countries, accredited laboratories (5) are rare; moreover, they are often far from population and not always affordable referring to country mean income. The contribution of pharmacists could improve the screening for type 2 diabetes as in other more developed countries (6,7). Some of the main advantages of such a screening can be to take care of the patients earlier and to prevent or delay complications by recommending them to consult a physician. It is well known that in diabetes disability is very frequent (8), the risk of cardiovascular disease is multiplied compared to non diabetic subjects (9), and the related risk of death is increased (10). The early screening would be a means for saving economical resources, mainly in developing countries, where treatment and monitoring of diabetes are very expensive and accessible only to a minority of the population (the minimum costs reaches 600 USD per year, while the annual income is by 300 USD pro capita). Another advantage in determining glycaemia in pharmacies is the possibility to monitor diabetes in order to maintain good glycaemic control (11).

The majority of diabetic cases were reported among people aged between 41 and 60. This group corresponds to a category of highly economically active people, who need to be more protected from morbidity and mortality. The WHO predicts that in 2025 most people suffering from diabetes in developing countries will be over 65 years old (12). So, the availability of a regular control will contribute to improve the changeable risk factors and productivity, with a drastic reduction of absenteeism in workplaces (13).

Table 1
Frequency of diabetes according to age and sex

Age (years)	Female (%)	Male (%)	Total (%)
≤ 20	3 (2.7)	2 (1.0)	5 (1.6)
21-40	16 (14.7)	6 (3.0)	22 (3.8)
41-60	70 (64.2)	170 (83.7)	240 (76.9)
>60	20 (18.3)	25 (12.3)	45 (14.4)
	109 (100)	203 (100)	312 (100)

The majority of diabetic individuals were city dwellers, possibly because most of the participating pharmacies were in the cities. According to some researchers, urbanisation would be associated with a 2.3 odds ratio for diabetes (14). However, this aspect is becoming of a minor importance because there is a significant change in the lifestyle of the general population mimicking the urban one.

The public health authorities should be aware of the insidious nature of diabetes, especially among people over 50. In developing countries, the role of pharmacies is more important as illiteracy is very common and the population's income is low.

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