

# The Burden of Diabetes in Pakistan: The National Diabetes Survey

Pages with reference to book, From 205 To 206

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Diabetes Mellitus (DM) is now a leading cause of morbidity and mortality throughout the world. Diabetes is associated with high rates of hospitalization, blindness, renal failure and non-traumatic amputation<sup>1</sup>. The economic impact of DM is high and it is a major contributor to the escalating healthcare cost worldwide<sup>2</sup>. Diabetes is also one of the most common non-communicable diseases globally. Prevalence rates of DM vary considerably amongst different populations and ethnic groups surveyed<sup>3</sup>. Consistently high prevalence rates are now being reported from several developing countries<sup>4</sup>. The World Health Organization (W.H.O.) has estimated that the global number of people with diabetes will be more than double over the next 25 years and the developing world would bear an increasingly larger burden of disease in this period<sup>5</sup>. South Asia in particular is considered one of the areas of highest increase in projected numbers.

Several studies have shown that South Asian migrants and their offsprings have higher prevalence rates of DM than the native host populations<sup>6,7</sup>. Till recently, we had limited population data on prevalence of diabetes among the indigenous Pakistani population. In this issue of JPMA, Shera et al report the third phase of the Pakistan National Diabetes Survey, with prevalence rates of glucose intolerance and associated factors in North West Frontier Province (NWFP). In their first two surveys, prevalence of Type 2 DM among the adult population (>25 years) was 13.9% in Sindh and 8.6% in Baluchistan with a further 11.1% (men) and 13.4% (women) with impaired glucose tolerance (IGT) in the two provinces respectively<sup>8,9</sup>. While the household cluster sampling with voluntary OGTT may have a slight bias in population screening towards women and those with possibly a greater concern of DM, the results of the study are comparable to prevalence rates of DM in other South Asian populations. Shera et al report a prevalence rate of Type 2 DM in NWFP of 11.6% in adult women and 9.2% in adult men, with a further 9.3% of the female population and 9.7% of the male population having LOT. This and their previous survey show that despite geographical differences and cultural diversity amongst the ethnic groups in Pakistan, all carry a similarly high risk of DM and IGT. The high prevalence rates also confirm the need for concern regarding the already considerable and growing problem of DM in Pakistan.

In this report, a number of interesting observations can be made. For each known case of DM, there are approximately 2 cases of undiagnosed DM and 3 cases of IGT in the population. This makes a strong case for screening the population as established complications are often found at the time of delayed diagnosis. Screening should be done in population, age above 45 years old, as this group appears to carry an even higher risk. Most experts agree that screening can be undertaken with an overnight fasting blood glucose (FBG), using the American Diabetes Association criteria of FBG>126 mg/dl (repeated if abnormal) to diagnose DM. Impaired FBG (FBG 110 - 125 mg/dl) often correlates with IGT. These are important clinical entities, both as a risk for future DM and as a risk factor for coronary artery and macrovascular disease. The high rates of associated hypertension and central obesity noted in the study also confirm that some of the many facets of the insulin resistance syndrome are prevalent in the Pakistani population.

All three published reports of the Pakistan National Diabetes Survey show considerable increase in prevalence rates with increasing age, the single most important determinant of risk. As life expectancy increases in Pakistan, projected prevalence rates of DM will increase significantly. The urbanization of

the population and adoption of increasingly sedentary lifestyle and westernized diets may also contribute to the increasing rates noted. This coupled with continuing high birth rate could potentially lead to an epidemic of diabetes. There would also be a corresponding increase in microvascular and macrovascular complications including end stage renal disease and coronary artery disease. The individual morbidity, effect on the family and cost to society will be increasingly high.

While we await the results of the fourth phase of the Pakistan Diabetes Survey from Punjab, there is an increasing need to conduct further studies to determine reasons why the population is subject to such high rates of DM and measures that can alleviate the long-term consequences. Does intra-uterine malnutrition and low birth weight contribute to later development of DM in this population? The benefits of an effective screening program need to be considered in relation to the costs of administering the program and facilities to deal with the new cases detected must also be in place. National standards of care for people with DM should be agreed and implemented. Most importantly there is a need to educate the population and health care providers regarding DM, as this will ultimately serve as the best hope in controlling the disease and its complications. A national strategy to reduce the burden of disease is required. This needs more resources to be earmarked for diabetes care. The task is challenging and the stakes of success and failure are high. In this battle there is not much time for delay.

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