

## **Editorial**

### **Burden of Diabetes Mellitus in Saudi Arabia**

Zahid Naeem

Diabetes Mellitus (DM) is one of the fastest-growing health problem in the world, which is now reaching to epidemic proportion in some countries. It is mainly due to consequence of life-style as lack of exercise, unhealthy diet, obesity and overweight. Over the past four decades major socio-economic changes have occurred in Saudi Arabia. The growth and prosperity have brought pronounced changes in the lifestyle of the people. Most notably, eating habits are less healthful and the level of physical activity has declined. There is increased consumption of fast foods and sugar-dense beverages (e.g., sodas). Simultaneously, technological advances – cars, elevators, escalators, remotes - have led to a decrease in level of activity. Traditional dependence on locally grown natural produce such as fruits, vegetables and wheat has also shifted. This has resulted in the dramatic increase in the diabetes prevalence. <sup>(1)</sup>

Globally in 2013, it is estimated that almost 382 million people suffer from diabetes with a prevalence of 8.3%. Top 10 countries with higher prevalence of diabetes are Tokelau (37.5%), Federated States of Micronesia (35%), Marshall Islands (34.9%), Kiribati (28.8%), Cook Islands (25.7%), Vanuatu (24%), Saudi Arabia (23.9%), Nauru (23.3%), Kuwait (23.1%) and Qatar (22.9%). So Saudi Arabia is among top ten countries of the world with highest prevalence. <sup>(2)</sup>

A community-based national epidemiological health survey was conducted among Saudi subjects in the age group of 30-70-years of selected households over a 5-year period. Data were obtained from history, fasting plasma glucose levels, and body mass index. The data were analyzed to classify individuals as diabetic, impaired fasting glucose and normal. A total of 17232 Saudi subjects were selected in the study, and 16917 participated (98.2% response rate). Four thousand and four subjects (23.7%), out of 16917 were diagnosed to have DM. Thus, the overall prevalence of DM obtained from this study is 23.7% in KSA. Diabetes mellitus was more prevalent among Saudis living in urban areas than rural and male study participants. <sup>(3, 4)</sup>

Globally Diabetes imposes a large economic burden on the individuals, national healthcare systems, and countries. Healthcare expenditures due to diabetes account for 11% of the total healthcare expenditures in the world in 2011. In Saudi Arabia national healthcare burden because of diabetes is likely to exceed \$0.87 billion, it omits the indirect costs associated with diabetes, such as absenteeism, lost of productivity from disease-related complications, unemployment due to disability and early mortality by disease. The social cost such as pain and suffering and care provided by caregivers as well as healthcare system administrative costs, cost of medications, clinician training programs, and research and infrastructure development is also omitted from this research study. Further studies are needed to confirm the present findings and to improve our understanding of economic costs of diabetes and its related complications. <sup>(5, 6)</sup>

Experts gathered at the International Conference on Healthy Lifestyles and Non-communicable Diseases (NCDs) in the Arab World and the Middle East, held in Riyadh, Kingdom of Saudi Arabia, in September 2012, recommended the following in Riyadh Declaration: <sup>(7)</sup>-

- a. An annual screening for metabolic syndrome (pre-diabetes, overweight, pre-hypertension, tobacco addiction) should be available to all asymptomatic adults from age 25 years, through primary health care facilities.
- b. Individuals diagnosed through the screening package should be referred to adequate and accessible care.
- c. Schools must be recognized as a major venue for Non Communicable Diseases (NCD) prevention. Accreditation or rehabilitation of educational facilities for boys and girls should be based on the criteria of World Health Organization Health Promoting Schools.
- d. Impose nutritional labelling on all fast food items. Sale of fresh fruits and vegetables as well as low-calorie products should be promoted.

- e. Increase the taxation on items with negative health effects (energy drinks, tobacco products), and earmark obtained funds to NCD prevention programs.
- f. New residential developments have to include environments that promote walking, biking, social gathering, and safe space to allow physical activity for the citizens specially women, elderly persons, and children.

Diabetes should be treated under a close collaboration between patients and healthcare providers in order to prevent long-term complications such as damage to the eyes, kidney, feet and heart. People with diabetes must be treated to avoid early death. Aggressive promotion of public awareness, continued screening and early intervention are pivotal to boosting a positive response. Special attention should also be given to the role of diabetic awareness programs, community-based screening campaigns and different health educational programs in reducing health problems caused by diabetes, which in the long run, helps to reduce the national burden of this disease. <sup>(8)</sup>

### **References:**

1. International Diabetes Federation. The Global Burden of Diabetes. Diabetes Atlas. 5<sup>th</sup> ed. IDF Publications, Brussels, Belgium; 2011. p. 7-13. Available from: <http://www.idf.org/diabetesatlas/news/fifth-edition-release>.
2. Aguirre, Florencia, Brown, Alex, Cho, Nam Ho, Dahlquist, Gisela, Dodd, Sheree, Dunning, Trisha, Hirst, Michael, Hwang, Christopher, Magliano, Dianna, Patterson, Chris, Scott, Courtney, Shaw, Jonathon, Soltesz, Gyula, Usher-Smith, Juliet and Whiting, David 2013, *IDF Diabetes Atlas : sixth edition*, 6th ed., International Diabetes Federation, Basel, Switzerland.
3. Al-Nozha MM, Al-Maatouq MA, Al-Mazrou YY, Al-Harhi SS, Arafah MR, Khalil MZ, Diabetes mellitus in Saudi Arabia. Saudi Med J. 2004 Nov; 25(11):1603-10.
4. Khalid A. Alqurashi, Khalid S. Aljabri, and Samia A. Bokhari, Prevalence of diabetes mellitus in a Saudi community, Ann Saudi Med. 2011 Jan-Feb; 31(1): 19–23.
5. Abdulkarim K Alhowaish Economic costs of diabetes in Saudi Arabia J Fam Community Med 2013; 20:1-7
6. Memish ZA, Jaber S, Mokdad AH, AlMazroa MA, Murray CJ, Al Rabeeah AA, et al. Burden of Disease, Injuries, and Risk Factors in the Kingdom of Saudi Arabia, 1990–2010. Prev Chronic Dis 2014; 11:140176. DOI:<http://dx.doi.org/10.5888/pcd11.140176>
7. International conference on healthy lifestyles and non-communicable diseases in the Arab world and the Middle East, Riyadh, 10–12 September 2012. WHO Regional Office for the Eastern Mediterranean. <http://www.emro.who.int/noncommunicable-diseases/ncd-events/riyadh-conference-september-2012.html>.
8. Al-Hazzaa HM, Abahussain NA, Al-Sobayel HI, Qahwaji DM, Musaiger AO. Physical activity, sedentary behaviors and dietary habits among Saudi adolescents relative to age, gender and region. Int J Behav Nutr Phys Act 2011; 8(1):140.

### **Correspondence:**

**Professor Dr. Zahid Naeem**  
 MBBS, MCPS, DPH, FCPS  
 Family & Community Medicine Department  
 College of Medicine, Qassim University, Saudi Arabia  
 Email: [zahidnaeem@qumed.edu.sa](mailto:zahidnaeem@qumed.edu.sa)