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Editorial

Prevalence and prevention of lifestyle-related diseases in Saudi Arabia

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With a population of 32 million and a gross national income of about 22,000 US dollars per capita, Saudi Arabia is ranked as a high-income country.[1] While it has effectively controlled infectious diseases and infant and child mortality, the so-called "diseases of civilization" have taken center stage: According to the Institute of Health Metrics and Evaluation, USA,[2] ischemic heart disease (IHD) and road traffic injuries are the top causes of death and contributors to disability-adjusted life years lost (DALYs). The most important risk factors contributing to DALYs in 2016 were obesity, diet, high blood pressure, and high fasting plasma glucose. Saudi Arabia ranks 13th in the world by the prevalence of obesity (body mass index [BMI] ≥30 kg/m^2), which has seen a steady increase over the last four decades: From 10.8% in 1975, to 26.2% in 2000, and 35.4% in 2016.[3] Saudi citizens have a 16.4% probability of dying from a non-communicable disease (IHD, cancer, diabetes, and chronic respiratory disease), between age 30 and 70 years.[4]

The Saudi Health Interview Survey[2] was a national survey of population age ≥15 years. The survey results, in summary, are as follows:

1. Prevalence of obesity (BMI ≥30 kg/m^2) was 24.1% among men and 33.5% among women. Even in the youngest age group (15–24 years), 13.4% of men and 13.9% of women were obese.
2. Prevalence of hypertension was 17.7% among men and 12.5% among women (48.3% and 48.4% among men and women of age 55–64 years, respectively). However, 61.2% of these men and 52.9% of women were previously undiagnosed for hypertension. Moreover, 19.1% of hypertensive men and 21.7% of women were being treated, but their blood pressure remained uncontrolled.
3. Prevalence of diabetes was 14.8% among men and 11.7% among women (53.0% and 47.8% among men and women of age 55–64 years, respectively). Alarmingly, 40.2% of these men and 48.4% of women were previously undiagnosed for diabetes. Moreover, 22.9% of diabetic men and 23.4% of women were being treated, but their blood glucose levels remained uncontrolled.
4. Overall, 16.3% of respondents were found to have pre-diabetes (HbA1c level 5.7–6.5%); this proportion was 15.4% and 15.5% among men and women aged 25–34 years, respectively.
5. Vitamin D level insufficiency (<28 ng/mL) was found among 40.6% men and 62.6% women.
6. Although smoking prevalence among women was low (1.5%), 22.7% of men were current smokers (16.1% among men aged 15–24 years).
7. Among men, 25.1% reported average sitting time of >6 h per day (26.3% among women), while 13.9% men and 14.0% women reported watching TV for more than 6 h per day.
8. None-to-low physical activity levels were found among 46.0% of men and 75.1% of women (16.9% men and 41.6% women aged 15–24 years were classified as physically not active).
9. Only 7.6% of respondents consumed ≥5 servings of vegetables, fruits, or fresh juice per day; 61.5% men and 57.5% women consumed less than one serving of fruits or vegetables per day.

These results confirm that physical inactivity and consumption of unhealthy diet are common among adult Saudi citizens, leading to high prevalence of obesity, hypertension, and diabetes. Moreover, the size of undiagnosed hypertension and diabetes is alarmingly large, indicating failure of screening at the primary care level. Similarly, treatment failure among diabetic and hypertension patients is high, indicating poor-quality care and low patient compliance at the primary care level.

Saudi Arabia has an efficient but expensive health system: Ministry of Health operates over 2300 primary health-care centers (PHCCs), 216 general hospitals and 58 specialist

hospitals. In addition, there are 44 other government hospitals and 152 private hospitals. Annual health-care financing was 59 billion Saudi Riyals in 2016 – about 7% of total government budget. The National Transformation Program 2020[5] aims to increase the share of the private sector, improve quality of care at PHCCs, and focus on prevention, particularly obesity and smoking. The government is rightly concerned about increasing costs of healthcare; hence, the ideas are being discussed to introduce a social insurance model based on public-private partnership.[6] However, the government will continue to bear a substantial proportion of health-care costs. Therefore, it is important to focus on primary and secondary prevention of NCDs, which will not only reduce health-care expenditure but will also lead to a healthier population.

The cornerstone of a national preventive program would be the PHCCs. However, quality of care at the PHCCs is unsatisfactory. A comprehensive review of primary healthcare in Saudi Arabia[7] found that access to health education was limited and referrals to specialist hospitals were low. Patients' follow-up system was ineffective; NCD patients did not have any incentives to make regular visits to PHCCs. Another study Al Hamid *et al*.[8] found multiple problems with poor quality and time for health education, poor counseling, lack of trust in health-care providers, and difficulty in understanding instructions from health providers due to poor communication.

Lack of proper health education, both to patients and to the community at large, results in poor understanding of NCDs and their risk factors.[9] However, health education through PHCCs can be effective for both primary and secondary prevention: A study in Qassim, Saudi Arabia, found that training of PHCC doctors to provide health education and regular seminars organized by medical students at the PHCCs significantly improved the patients' lifestyle practices in terms of diet and exercise.[10] Health education, information, and support provided by a primary provider may also encourage patients to overcome the personal and social barriers to adopting a healthy lifestyle.[11]

It follows that a good national health education program through PHCCs is the only effective solution to reduce the burden of lifestyle-related diseases in Saudi Arabia. In addition, the government should consider introducing a national health insurance plan that incorporates screening for obesity, diabetes, and hypertension, encourages early diagnosis and effective treatment of NCDs, and strengthens secondary prevention by providing incentives and rewards to patients for compliance and regular follow-up visits. Saudi Arabia needs a strong and dynamic national health promotion and disease prevention program, and it needs it now.

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