

Calibrating Dubai's heartbeat

Framingham cardiovascular risk model promoted in emirate

DUBAI — The heart is a complex muscular organ that is protected within the ribcage of the human body. Its function is to supply cells with oxygenated blood and send deoxygenated blood to the lungs for oxygenation.

Cardiovascular diseases are the diseases of the hearth; the World Health Organisation defines cardiovascular diseases that involve the blood vessels of the heart such as coronary heart disease (heart attack) and cerebrovascular disease (heart stroke), and the diseases that are related to the heart muscles such as rheumatic heart disease and congenital heart disease.

The Dubai Health Authority reported that cardiovascular disease (CVD) risk among UAE nationals is nearly one in every three (29 per cent). The average age to experience any cardiovascular event in UAE is 45 years compared to the global average age of 65 years. Media reports suggest that CVD-related deaths and medical emergencies remain high among the UAE population. Shaikh Khalifa Medical City released statistics stating that 500 newborns experience congenital heart disease and nearly 70 per

cent among them needed surgery. Patients as young as age 21 are being treated for cardiovascular diseases in the UAE's hospitals.

Cardiovascular risk factors contribute towards the development of a cardiovascular disease. These risk factors can be classified as physical, social and behavioural conditions. The cardiovascular risk factors include gender, age, blood pressure, total cholesterol, high-density lipoprotein, low-density lipoprotein, diabetic, family history, ethnic background, smoking, obesity and the lack of exercise. A 2013 report indicated that the about 66 per cent of men and 60 per cent of women in the UAE are overweight or obese; local surveys in the UAE suggests that the overall percentage of the smoking male population is about 28 per cent while 2.4 per cent of females are also in the habit of smoking. Furthermore, 19 per cent of the UAE population lives with diabetes. These numbers are high enough to raise the cardiovascular risk profile of the UAE population.

Preventive medicine is the key to tackle cardiovascular risk, which includes early detection and inter-

29%
of UAE nationals are at risk
of cardiovascular disease

vention through regular medical check-ups. Early prediction of risk plays a fundamental role in preventive medicine; cardiovascular risk prediction can help medical practitioners and planners to manage the risk to lower its potential overall impact on the health of the UAE's population.

Currently, medical researchers and medical practitioners use Framingham cardiovascular risk prediction model to understand the CVD risk. The Framingham model originated from Framingham, Massachusetts, and it reflects the cardiovascular characteristics of the population of city of Framingham. The Framingham cardiovascular risk prediction model is being used in different geographical locations around the world. While estimated Framingham CVD risk pro-

vides insight of the prevalence of the CVD risk among the population of interest, it may not provide an accurate account of the problem.

Each geographical population has its own unique physical, social and behavioural characteristics which can have an impact on their risk of developing a CVD-related disease. These characteristics need to be incorporated to establish an understanding of the CVD risk of the population. Studies conducted in different geographical locations have proven that the Framingham CVD risk score does not represent the actual CVD risk of the population under study.

Dr Masood Uzzafer, associate professor at Amity University Dubai, is leading an effort to calibrate the Framingham cardiovascular risk prediction model for the population in Dubai. He explains that the calibrated model will enhance our understating of the burden of the CVD risk in Dubai and outcomes of this research will help to predict the CVD-related events of Dubai's population which will improve the overall performance of the preventive healthcare system of Dubai.