

## Preventing the Future Pandemic of Diabetes Mellitus in Oman

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### الوقاية من جائحة داء السكري في سلطنة عمان

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**D**IABETES MELLITUS IS CURRENTLY ONE OF the most challenging public health problems worldwide. With a marked increase in its prevalence, it is reaching epidemic proportions in many countries.<sup>1</sup> Globally, the diabetes rate has risen by 45% over the past two decades.<sup>2</sup> The International Diabetes Federation (IDF) estimated that the number of adults affected by diabetes in 2013 was 387 million, with a projected increase of up to 592 million by 2035.<sup>3</sup> In Arab countries, the prevalence of type 2 diabetes mellitus has increased dramatically over the past 30 years.<sup>4</sup> According to the IDF, three Arabian Gulf countries are among the top 10 countries in the world with the highest prevalence of diabetes: Saudi Arabia (24%), Kuwait (23.1%) and Qatar (22.9%).<sup>5</sup>

In the May 2015 issue of SQUMJ, Al-Lawati *et al.* showed that Oman is following the same trend, with diabetes age-adjusted prevalence rates varying from 10.4% to 21.1%.<sup>6</sup> Al-Lawati *et al.* also estimated that the number of patients diagnosed with diabetes in Oman will rise to 350,000 by the year 2050; an increase of 174% compared to estimates for 2015.<sup>6</sup> The study also found a remarkable proportion of undiagnosed diabetes cases in Oman; this indicates that many individuals are living without treatment.<sup>6</sup> The implications of these alarming statistics on the healthcare system in Oman should be addressed and effective solutions to combat this trend be planned and implemented.

The key risk factors for the development of diabetes include a genetic predisposition, poor dietary habits, a family history of the disease and a lack of physical activity.<sup>7</sup> The prevalence of obesity among Arab countries has increased rapidly in the last few decades.<sup>8</sup> Poor dietary habits and inadequate physical activity have contributed to large numbers of overweight and obese individuals, which will ultimately lead to increased cases of diabetes.<sup>9</sup> Research conducted by

Ng *et al.* showed that several countries in the Middle East have had the largest increase in obesity rates globally, including Bahrain, Egypt, Saudi Arabia, Oman and Kuwait.<sup>10</sup> In Oman, the prevalence of overweight/obese individuals was reported to be 54% among men and 73% among women.<sup>10</sup> Easy access to processed junk foods, cheap transportation methods and technology-based jobs that limit physical activity have resulted in a disturbance of metabolism leading to obesity and diabetes.<sup>11</sup> It has been proposed that almost 80% of diabetes cases are preventable if individuals maintain a healthy body weight by taking part in regular physical activity and eating a well-balanced diet.<sup>12</sup>

The chronic nature of the disease, severity of its complications and means of controlling the condition makes diabetes a costly affair, not only for the affected individual and their families, but also for healthcare authorities.<sup>11</sup> Consequently, the globally increasing prevalence of diabetes has resulted in an increase in related healthcare costs, particularly in developing countries.<sup>2</sup> A study carried out by the American Diabetes Association estimated that the total cost of diagnosed diabetes cases in the USA had risen from USD \$174 billion in 2007 to USD \$245 billion in 2012, which is a 40% increase over a five-year period.<sup>13</sup> In India, the annual healthcare cost of diabetes cases has been reported as approximately USD \$2.2 billion.<sup>14</sup> In Oman, no in-depth studies have yet evaluated the cost of diabetes to the healthcare system; however, the IDF have reported that the mean diabetes-related health expenditure per diabetes patient in Oman is approximately USD \$500–1,500.<sup>5</sup>

In order to effectively control diabetes at a national level, it should be the responsibility of diabetes educators and physicians in Oman to create public awareness about basic concepts of disease management, such as glycated haemoglobin measurements, dietary control, sufficient exercise, carbohydrate

counting and multiple daily injections.<sup>11</sup> The Secretariat of Health in Mexico implemented a structured diabetes education programme which aimed to provide better healthcare and improve quality of life for diabetic patients; it was subsequently found that the programme resulted in an increased number of people with well-controlled diabetes.<sup>15</sup> In Oman, not all primary healthcare facilities have diabetologists or the necessary equipment for the early detection of diabetes. Therefore, most cases are attended by non-specialised primary healthcare physicians which affects the quality of care received by diabetic patients.<sup>11</sup> The Omani healthcare system needs to upgrade its existing healthcare policies to follow the current World Health Organization (WHO) chronic care model which has been implemented in the UK, Australia, New Zealand and Canada.<sup>11</sup> There should be more resources allocated to diabetes care in Oman for better prevention, diagnostic infrastructure, convenience and affordability of treatment as well as skilled healthcare workers, as suggested by the WHO Global Strategy.<sup>16</sup>

The initiative of a National Diabetes Centre in Oman in March 2013 was the first step towards creating an organisational body for awareness and diabetic care in the country; this centre should be further strengthened and expanded to provide better diabetic healthcare. This could be achieved by establishing regional diabetes centres in each governorate of Oman. These centres should be equipped with all the necessary medications and resources needed for diabetic patients and have a diabetologist, diabetes nurse and dietician on staff. The role of these regional centres should not be limited solely to treating diabetic patients, but should also aim to prevent diabetes and its complications. This may be achieved by implementing health education campaigns in local communities and creating groups for peer support and patient empowerment. The presence of these centres in all regions of Oman would facilitate patient compliance, help in lowering the number of undiagnosed diabetes cases and prevent a further increase in diabetes prevalence. A low-cost alternative to this would be to hold outreach clinics, where diabetic experts could travel to underprivileged areas and conduct educational, diagnostic and therapeutic campaigns. Finally, the continuous training of primary healthcare professionals in diabetes care and prevention is an essential tool for improving the management of diabetes in Oman.

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