



THE VITAL ROLE OF DIABETIC EDUCATOR IN PRIMARY CARE HEALTH CLINICS – SHARING THE EXPERIENCE FROM BUNTONG HEALTH CLINIC, PERAK, MALAYSIA

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ABSTRACT

Achieving and maintaining glycaemic control, optimising treatment, and ensuring patient adherence continue to be major challenges in T2DM management globally. Diabetes mellitus is a major non-communicable health problem globally, leading to multiple macro and microvascular complications, if not managed appropriately. Structured Diabetic Resource Centers, led by trained diabetic educators to lead and provide organized and in-depth management for Type 2 DM patients will be the way forward in ensuring comprehensive and holistic care for these patients.

KEYWORDS :

REPORT

Diabetes mellitus is a general term for a group of metabolic disorders with the main feature of chronic hyperglycaemia. It results from either impaired insulin secretion or impaired insulin efficacy or, most often, both.¹ According to the International Diabetes Federation, Diabetes is estimated to affect 9.3% (463 million people) of global population in 2019, rising to 10.2% (578 million) by 2030 and 10.9% (700 million) by 2045. One in every two (50.1%) people with diabetes are unaware of their condition. In Malaysia, the prevalence of Type 2 Diabetes mellitus grew from 11.6% to 17.5% in the last decade and projected to reach 2.48 million by 2030. It causes a major challenge to Malaysian public health system as it required additional healthcare cost of MYR 4.49-7.67 million annually.²

Diabetes mellitus is a major non-communicable health problem globally, leading to multiple macro and microvascular complications, if not managed appropriately. Achieving and maintaining glycaemic control, optimising treatment, and ensuring patient adherence continue to be major challenges in T2DM management globally. Diabetic educators are vital to lead and provide organized and in-depth management for Type 2 DM patients as this will be the way forward in ensuring comprehensive and holistic care for these patients.

Management of diabetes mellitus most importantly involves measuring blood glucose level which renders the gold standard criterion for diagnosis. For T2DM patients in general, a tight glycaemic control with a glycosylated haemoglobin (HbA1C) level of 7% is recommended, while a more stringent glycaemic control with a HbA1C level of 6.5% is preferred for those who are younger, newly diagnosed, and without complications. However, maintaining glycaemic control, optimising treatment, and ensuring patient adherence continue to be major challenges in T2DM management globally. Non-adherence to treatment has been reported in up to 64% of T2DM patients.²

Diabetic educators are an extremely important asset to the multidisciplinary team and are uniquely prepared to facilitate change and implement processes and programs to improve glycaemic control.^{3,4} Diabetic educators play a key leadership role in creating or implementing interdisciplinary teams (related to quality improvement, patient or medication safety, documentation/tool development, clinical informatics & decision support), comprehensive staff diabetes education, collection of blood glucose data and the surveillance of outcome measurements, evidence-based hypoglycemia and

hyperglycemia, management order sets and protocols (as well as monitoring, tracking, and root cause analysis to prevent errors and patient harm), individualized medication management plans within the hospital setting and for use after discharge, and a plan of care that facilitates a smooth transition across the care settings.

The diabetic educators' responsibility as a leader or member of the multidisciplinary team includes input into patient education, identifying barriers to care, care coordination and transition, nutrition therapy, medication therapy and management, hypoglycemia management and prevention, monitoring glycaemic control, and professional education.^{3,5,6,7}

Buntong Health Clinic is a Type 3 health clinic situated in Ipoh district, Perak state, Malaysia. It caters for a total population of about 34,000 and has about 1200 active diabetic patients registered in the National Diabetic Registry giving about 4.4% of the total population of Buntong. Buntong Health Clinic renders many services, which includes outpatient, non-communicable diseases, antenatal, postnatal, child health services as well as many more. Being a very busy clinic with daily attendance of about 600 patients to this clinic, it is pertinent to have a diabetic resource center, led by a diabetic educator, trained to deliver a variety of services pertaining to diabetic care.

Buntong Health Clinic did not have a diabetic educator prior to 2021. One nurse who was very much interested in pursuing her training to become a diabetic educator applied for this programme and was granted the permission to do so in 2019. Her training completed in 2020. Yearly HBA1C results from the annual diabetic audit conducted by the Ministry of Health, Malaysia, showed that the levels for Buntong Health Clinic were much lower without a diabetic educator as compared to after having a diabetic educator running the diabetic resource center. HBA1C levels achieved in 2018 was 31.3%, followed by 32.7% in 2019 and 27.8% in 2020. However, after the diabetic educator returned to Buntong Health Clinic upon completion of her training and implementing all that has been trained on, the HBA1C levels showed marked improvement. HBA1C levels in 2021 was 54.6%, in 2022 was 49.5% and as of recent, this year, 2023, it is 38.0%.

The diabetic educator's roles and responsibilities includes providing support and education for people with diabetes (including gestational diabetes), integrating clinical care and self-management education. Skills training and disease specific information are also conducted by diabetic educators to motivate patients to understand diabetes better and make

informed lifestyle as well as treatment choices, incorporate physical activity into daily life, consume their medications safely and effectively, use glucometers and monitor as well as interpret blood glucose levels properly and manage hypoglycaemia and hyperglycaemia. Diabetic educators are also trained to educate patients on dietary management including carbohydrate counting, label reading, meal planning and understanding information regarding dietary fats. Diabetic educators also co-operate with other members or specialities in the diabetic team, such as, doctors, pharmacists, dieticians, dentists as well as physiotherapists, in providing holistic service to our diabetic patients in achieving their targets of control.

Besides that, diabetic educators also provide education and monitor progress of patients from the first encounter when they are initially diagnosed with diabetes. They help patients by educating them on their medications as well as insulin therapy as needed, initiating self-monitoring of blood glucose as well as guide patients who are struggling to reach targets of control, HbA1c. They also assist patients who experience hypoglycaemia as well as hyperglycaemia and motivate them on lifestyle change patterns, especially for those who are planning pregnancy, during pregnancy, after delivery, starting school and embarking on travels.

Our diabetic educator in Buntong Health Clinic has successfully managed to deliver all of the above mentioned roles and responsibilities well, as evident from the marked improvement in HbA1C levels of control mentioned above, for the past 3 years. She has managed to ensure the National Diabetes Registry System is up-to-date, which makes it easier to collect data on the key performance measures of Diabetes Mellitus which helped manage the Type 2 DM patients efficiently. With the updated NDR, it can help coordinate patient care across specialties, to enable significant improvement in outcomes and identify opportunities to close gaps in diabetes care towards achieving health equity. An effective recall system had been implemented for Type 2 Diabetes Mellitus patients who missed follow-up appointments in Buntong Health Clinic, by sending reminder messages to them to ensure a proper constant monitoring and perform continuous risk assessment in order to prevent further complication of their illness. Our diabetic educator also has ensured to have a well-written management protocol on diabetes mellitus, in accordance to the latest Ministry of Health Malaysia's Clinical Practice Guidelines on Type 2 Diabetes Mellitus.⁸ This will ensure that management offered by the doctors, paramedics and diabetic educator to all diabetic patients in the clinic is systematic and evidence-based.

Our diabetic educator has also completed fundus camera grading and reading competency and privileging programme and does fundus camera screening for all diabetic patients to rule out diabetic retinopathy. She also does annual feet check as well as whenever necessary for all diabetic patients. Feet examinations should be performed on patients in every follow up visit because the most prevalent problems seen in individuals with Type 2 Diabetes Mellitus is neuropathy. This should be a high priority in all diabetes patients so that the risk factors predictive of feet abnormalities, ulcerations, and amputations can be identified with a goal to decrease morbidity and mortality. Feet examination usually will be performed when patients complain of pain or injury on the leg because these patients need to be given immediate treatment to prevent the worsening of the condition.⁹ Our diabetic educator also ensures patients comply to their medications, check on proper insulin injection techniques, advise and educate them on healthy lifestyle changes which includes diet and exercise therapy, teach them on the importance of home blood sugar monitoring as well as recognising early signs and

symptoms of diabetes complications and to come early to the primary healthcare facility if detected any. When all of these can be provided to the Type 2 diabetic patients in a community, definitely targets for control, as well as prevention of macrovascular and microvascular complications can be achieved.

In a nutshell, it is clear that, it is vital to have a diabetic educator to manage diabetic resource center in a primary health clinic. Buntong Health Clinic has done well in managing their Type 2 diabetes mellitus patients overall, looking at the HbA1C levels, especially after having a trained diabetic educator. All primary healthcare clinics are providing multiple services which encompasses outpatient, emergency, maternal and child health care as well as many other services. Thus, having a trained diabetic educator to manage the diabetic resource center will certainly assist the clinics' management to provide comprehensive and holistic care for their diabetic patients, which will eventually reduce morbidity and mortality amongst them. Trainings for many more diabetic educators, primarily amongst the paramedics as well as nurses is vital to ensure every primary healthcare clinic will have at least one diabetic educator in the near future.

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