

Geospatial Assessment of Food Outlets and Facilities for Physical Activity as Components of Obesogenic Environment Surrounding Malaysian Adolescents

Nadrah Arfizah Arifin, MPH, Rosilawati Zainol, PhD, Hazreen Abdul Majid, PhD

Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Faculty of Built Environment, University of Malaya, Kuala Lumpur

ABSTRACT

INTRODUCTION: Obesogenic environment is identified as an exposure to develop NCD where food intake and physical activity patterns are the shared contributing factors for NCD as early as in adolescence life. This study aimed to determine the association between exposure to surrounding food outlets and physical activity (PA) facilities as the components in obesogenic environment, with obesity profiles among Malaysian adolescents based on residential settings. **METHODS:** This ecological study was conducted as a part of the Malaysian Health and Adolescent Longitudinal Research team (MyHeART) and involved 1032 students aged 17 years old from 14 schools in three states of Peninsular Malaysia in 2016. Anthropometric measurements and biochemical profiles were taken from the participants. Extensive search combining characteristic observation and ground truth verification methods was conducted to locate food outlets and PA facilities surrounding each school. All results were analysed by using IBM SPSS Statistical Version 23 and ArcGIS 10.3.1 for geographical data. **RESULTS:** Overweight/obesity rate was 33% among the adolescents with significant spending on food outlets within schools and less time for physical activity. 340 food outlets and 93 PA facilities were mapped into geographical information system. Spatial analysis showed that food outlets selling high energy density food and less vegetables/fruits could be found nearer to schools, while clusters of PA facilities were very dependent on residential settings. **DISCUSSION:** The findings may assist in improvement of current policies for food environment and physical activity for school-going adolescents through understanding of potential environmental factors that lead to obesity among adolescents.

KEYWORDS: obesogenic environment, adolescent health, food outlets, physical activity, obesity

Glycaemic Control and Management of Type 2 Diabetes Patients Across Public Health Clinics in Kedah

Sharifah Saffinas Syed Soffian

Kedah State Health Department, Malaysia

ABSTRACT

INTRODUCTION: Prevalence of diabetes in Malaysia has increased over past decade, from 11.6% to 17.5%, which incur additional cost of MYR4.5 to 7.7 million annually. Generally, glycaemic control (HbA1c) of $\leq 6.5\%$ is recommended. In US, 34.1% T2DM patients with HbA1c level $\leq 7\%$. Non-adherence to treatment ranging from 7-64% worldwide causing diabetes difficult to manage. Kedah has the highest prevalence of diabetes in Malaysia based on findings from NHMS 2015. This study aimed to examine the glycaemic control and management of patients with type-2 diabetes mellitus (T2DM) across all the 58 public health clinics in Kedah, Malaysia. **METHODOLOGY:** This is a cross sectional study whereby, the data was obtained from the National Diabetes Registry, with patients selected using stratified random sampling. **RESULTS:** Of the 23,577 patients followed up at the clinics during August 2016 and July 2017, only 15.6% had a glycosylated haemoglobin (HbA1C) level $< 6.5\%$. Meanwhile, 28.6% of them did not have their HbA1C levels tested over the 12-month period. While retinopathy appeared as the most prevalent diabetes-related complication (12.6%), combination treatment (≥ 2 antidiabetic medications) was not used in nearly 30% of the patients with a HbA1C of 7.5-10.0%. Insulin therapy was also only given to 60.5% of those with a HbA1C $> 10.0\%$. **DISCUSSION:** Overall, the current management of T2DM patients at the primary care level in Kedah has been inadequate and warrants a revision.

KEYWORDS: Hypoglycaemic agents, insulin, Malaysia, primary health care, type 2 diabetes mellitus