

Assessing leisure-time physical activity in Taiwanese adults by using  
Geographic Information System

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Abstract

Map and other data graphics may play important roles in generating ideas and hypotheses at the beginning of a program to discuss the causation issue. To date, there are no internationally published data with nationally representative samples in investigating leisure-time physical activity (LTPA) in Taiwan by using Geographic Information System (GIS). The objectives of this study were to assess the amounts of LTPA and to construct the atlas of LTPA by using GIS. The data were extracted from the Nutrition and Health Survey in Taiwan (NAHSIT), 1993-1996. The participants were 2,289 men and 2,253 women aged 19 to 96 years from 21 townships, 3 each in seven geographical or culture strata (included Hakka area, mountainous area, east coast, Peng-Hu islands, metropolitan areas, provincial cities, and class I townships; and class II rural townships). Information regarding LTPA, its energy expenditure, and other factors were analyzed. The color maps for the LTPA in NAHSIT were drawn by using GIS. The geometric means of LTPA were 768.01 kcal/week for men and 577.85 kcal/week for women. Although 75.54% of Taiwanese adults reported engaging in some LTPA, only 32.84% met the recommended guideline of  $\geq 750$  kcal/week. In addition, 28.28% reached a more desirable goal of  $\geq 1,000$  kcal/week. Our results show that the percentage of Taiwanese adults meeting the recommended amounts of LTPA for health is low. Eventually, we expect the results of this study can provide the information for the known the map of unusual clusters of physical inactivity could be a prevention to reduce the risk of obesity in the future.

Keyword : Leisure-time physical activity, Energy expenditure, Geographic Information System, Map, Taiwan