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Original Research

The prevalence of physical activity and its associated factors among Malaysian adults: findings from the National Health and Morbidity Survey 2011

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ABSTRACT

Objectives: Despite the health-enhancing benefits of physical activity, a large segment of the Malaysian population does not engage in regular physical activity at the recommended level. This study aimed to determine physical activity patterns and the associated socio-demographic correlates of physical activity.

Study design: Data on physical activity were obtained from the National Health and Morbidity Survey (NHMS) 2011, a nationally representative, population-based cross-sectional study. A two-stage stratified sampling method was used to select a representative sample of Malaysian adults aged 16 years and above.

Methods: A total of 19,145 adults aged 16 years and above were recruited, and face-to-face interviews were conducted using the International Physical Activity Questionnaire (IPAQ), short version. The correlates for physical activity were identified using multivariate analysis.

Results: In this study, 64.3% (95%CI: 63.1–65.5) of Malaysian adults aged 16 and above were physically active, but overall physical activity levels decreased with advancing age. Men, rural residents, 'other' ethnic groups, and married women were more likely to demonstrate higher levels of physical activity.

Conclusion: Approximately 65% of Malaysian adults were physically active. However, it is recommended that health promotions for active lifestyles should be targeted to the least active segments, which constitute more than a quarter of the Malaysian population.

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Introduction

The burden of non-communicable diseases (NCDs), such as cardiovascular diseases, diabetes, and cancers, accounts for almost 50% of the global burden of diseases,[1] and approximately 80% of all NCD deaths occur in low- and middle-income countries.[2] Physical inactivity has been identified as one of the five primary risk factors for NCD-associated deaths[3] and is estimated to be responsible for approximately 80% of cardiovascular diseases, 27% of diabetes, 21%–25% of breast and colon cancer,[4] and 3.2 million deaths globally.[5] Despite the health-enhancing benefits of regular physical activity that have been demonstrated by numerous epidemiologic and experimental studies,[6–9] rapid urbanization, industrialization, economic growth, and technological advancement in developing countries[10] such as Malaysia[11] has led to a decline in physical activity.

The prevalence of physical activity in 51 countries across six WHO regions of varied development status ranged widely, from 47.4% to 98.4% in men and from 28% to 96.2% in women.[10] The prevalence of high physical activity in 20 countries varied from 21% to 63%, with developed countries such as New Zealand, the Czech Republic, the USA, Canada, and Australia attaining higher levels of physical activity.[12] In 29 Asia-Pacific countries, estimates of sufficient physical activity range from 7% in Maldives to 93% in China.[13]

In Malaysia, the 1996 National Health and Morbidity Survey II (NHMS II) reported that only 11.6% of Malaysian adults engaged in adequate level of exercise (defined as physical activity undertaken for the purpose of recreation, sport, or health/fitness).[14] This percentage increased to 14% in the Malaysian Adult Nutrition Survey (MANS) in 2003.[11] The Malaysia Non-communicable Diseases Surveillance-1 (MyNCDS-1), conducted in 2005/2006, found that approximately 40% of Malaysian adults were physically active,[15] and the NHMS III in 2006 reported a higher level of physical activity (56.3%)[16] (defined as any bodily movement produced by skeletal muscles that required energy expenditure[3]). However, these rates included a single domain (NHMS II) or a combination (MyNCDS-1, NHMS III) of three physical activity domain (work, travel, leisure time) and did not include all domains of physical activity in daily life. Hence, they may not accurately estimate the actual prevalence of physical activity among Malaysian adults.

In addition to precise assessments of physical activity level, the identification of correlates or associated factors of participation in physical activity is necessary to evaluate, improve, and implement public health policies and to develop appropriately tailored, community-based promotional programmes on physical activity[17] for at-risk Malaysian adults. Numerous studies have demonstrated that sociodemographic factors[18] such as gender,[19] age,[20] residential locality,[21] marital status,[22] education, and income level[23] have significant associations with physical activity levels. Therefore, the present study aimed to determine the prevalence of physical activity and its associated sociodemographic factors across four domains (work-related, transportation, leisure time, and domestic/gardening) among a representative sample of Malaysian adults aged 16 and above using the short version-International Physical Activity Questionnaire (IPAQ).

Methods

Study sample

The authors analysed data from the National Health and Morbidity Survey (NHMS) 2011. This cross-sectional, population-based study employed two-stage stratified sampling to select representative samples of Malaysian adults aged 16 years and above. The stratifications were performed by states and urban/rural localities. The Primary Sampling Units (PSUs) are Enumeration Blocks (EBs) provided by the Malaysian Department of Statistics (DOS) according to the 2010 census. A total of 794 EBs, composed of 484 urban EBs and 310 rural EBs, were systematically selected from all EBs in Malaysia via a probability-proportional-to-size sampling technique. Subsequently, 12 Living Quarters (LQs) or Secondary Sampling Units (SSUs) were randomly selected from each selected EB. Finally, all households and eligible household members within the selected LQ were included in the sample.

All of the eligible respondents provided written consent for participation before they were interviewed. The study protocol was approved by the Medical Review and Ethics Committee (MREC), Ministry of Health Malaysia.

Data collection

The data collection was conducted by trained interviewers via face-to-face interviews from April 2011 to July 2011. To ensure a higher response rate, only selected respondents who were not at home after three attempted visits were excluded from the survey.

A standardized questionnaire was used to collect sociodemographic information on gender (male; female), age, ethnicity (Malay; Chinese; Indian; Others), residential area or locality (urban; rural), educational background (no formal education; primary; secondary; tertiary), marital status (single; married; widow/widower/divorcee), employment status (government/semi-government; private; self-employed; homemaker; retiree), and household income (less than RM 2000; RM 2000-RM 2999; RM 3000-RM 3999; RM 4000 and above).

Instrument

The IPAQ short form was employed in the present study because it is recommended for national monitoring of physical activity level.[24] It was designed to estimate overall physical activity level by assessing three specific types of physical activity (walking, moderate-intensity activities, and vigorous-intensity activities) undertaken across a comprehensive set of domains (work-related, transportation, leisure time, and domestic/gardening). The original English version was translated into Bahasa Malaysia and back-translated into English.

The Malay IPAQ short form was pilot tested among 32 adults for concurrent validity (correlation with the original English version)[24] by comparing the correlation of total physical activity (MET-minutes/week) from the Malay version with that obtained from the original English version. An interval of one hour was allowed between the administrations

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