

An exploratory study on risk factors for chronic non-communicable diseases among adolescents in Malaysia: overview of the Malaysian Health and Adolescents Longitudinal Research Team study (The MyHeART study)

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Abstract

Background: The National Health & Morbidity Survey (NHMS) IV (2011) observed that the prevalence of obese children aged less than 18 years in Malaysia is 6.1% compared to 5.4% overweight and obese in NHMS III (2006). As such, this observation is of public health importance as obesity is a forewarning risk factor for chronic diseases such as type-2 diabetes, cardiovascular diseases (CVD) and certain types of cancers. This MyHeART (Malaysian Health and Adolescents longitudinal Research Team) study aims to examine risk factors of non-communicable diseases (NCD) among adolescents.

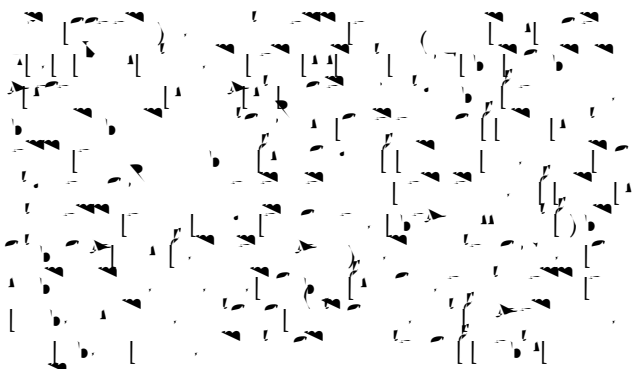
Methods/design: The MyHeART study is longitudinal cohort study of 1361 schoolchildren (13-years old) attending 15 public secondary schools from the central (Kuala Lumpur and Selangor) and northern (Perak) regions of Peninsular Malaysia. The study used a stratified sampling design to select the study participants. Data collected at baseline included socio-economic, lifestyle (e.g. smoking, physical activity assessment, fitness assessment, seven-day diet history), and environmental information, anthropometric measurements, blood pressure, handgrip strength and bone mineral density. Blood samples for fasting blood glucose and lipid profiles, full blood count, renal profile, as well as bone profile and serum vitamin D were taken. This study cohort will be followed up again when participants turn 15, 17 and lastly, after a period of ten years (around the age of 27).

Results: Nine percent of the adolescents from this study were obese. More male participants smoked compared to female participants (15.4% vs. 4.7%). Adolescent males had higher fasting blood glucose but the female participants had lower high density lipoprotein (HDL-cholesterol) and higher low density lipoprotein (LDL-cholesterol). In addition, adolescents from the rural area had higher fasting blood glucose, diastolic blood pressure, total cholesterol and LDL-cholesterol.

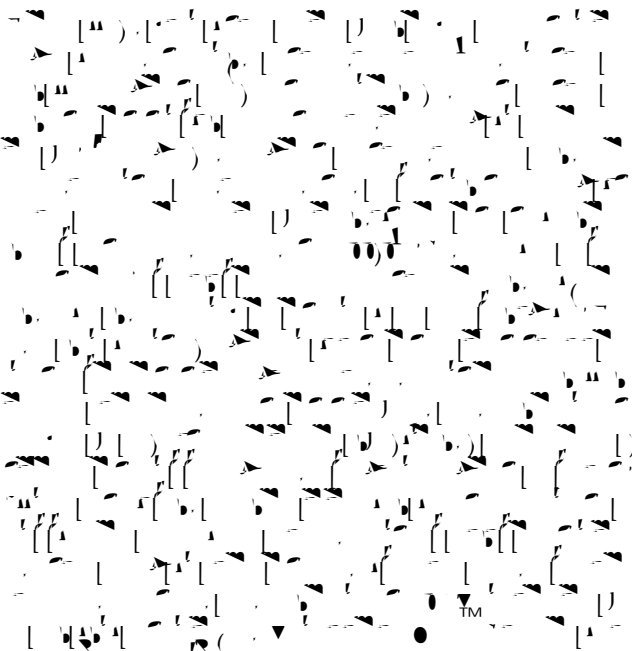
Discussion: Our results demonstrated that adolescents from the rural area are at higher risk of NCDs compared to their urban counterpart. Tailor made public health interventions are highly recommended for adolescents as this may

Background

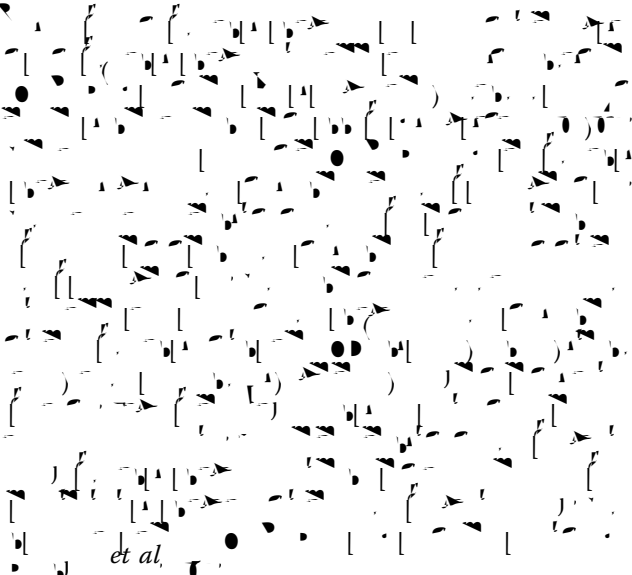
Handwritten musical notation on a single staff, featuring various notes, rests, and bar lines. The notation is dense and appears to be a fragment of a larger piece.



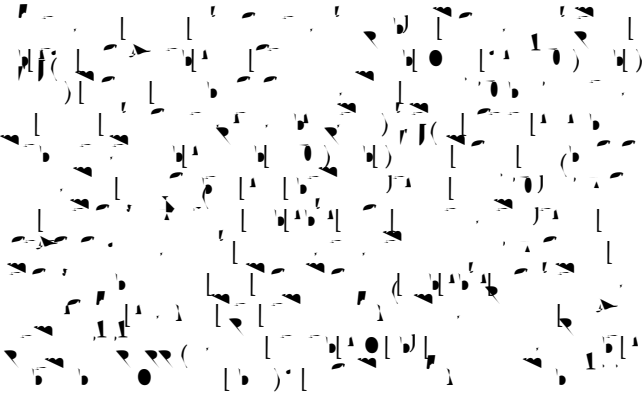
Dietary assessment



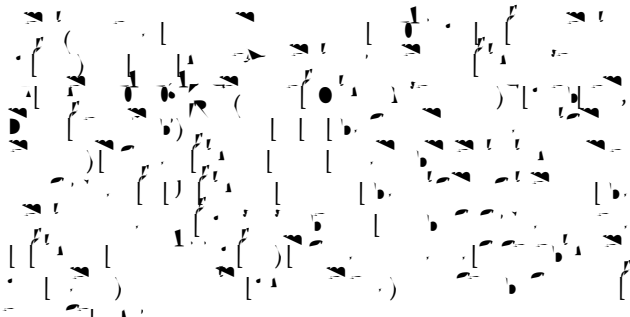
Physical activity



Physical evaluation



et al.



Blood profile

Handwritten musical notation consisting of two staves of music. The notation includes various notes, rests, and bar lines, typical of a musical score.

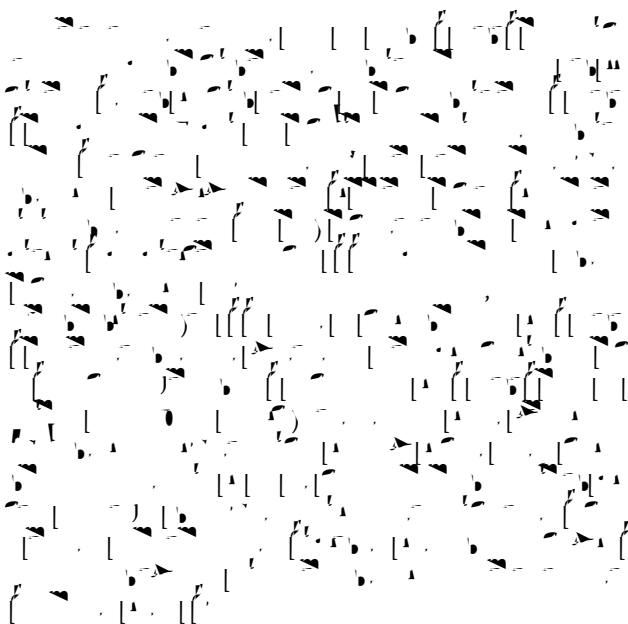
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Competing interests

The authors declare that they have no competing interests.

Authors' contributions

All authors contribute to the study design; MAH, MYJ, NAS and TTS were involved in the field work and data collection. MAH was responsible for the drafting of this manuscript and all authors approved the final manuscript.

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