INPLASY

Physical inactivity among diabetes patients in Malaysia: protocol of a systematic review of Malaysian studies

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ADMINISTRATIVE INFORMATION

Support - International Medical University.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 June 2023 and was last updated on 17 June 2023.

INTRODUCTION

Review question / Objective What is the prevalence of physical inactivity among adults with diabetes mellitus in Malaysia, and is there any social-demographic differences and association with cardiometabolic variables?

Rationale This study aims to document the prevalence of physical inactivity among adults with diabetes mellitus in Malaysia and examine its association with socio-demographic and diabetes-related clinical and biochemical variables. These data will assist future diabetes and physical activity research and related interventional studies in Malaysia.

Condition being studied Physical inactivity. Physical inactivity is defined as total score of various physical activities that is lower than 600 MET minutes per week calculated using specific rating scales such as International Physical Activity Questionnaire or Global Physical Activity Questionnaire..

METHODS

Search strategy We plan to search bibliographic databases for Malaysian quantitative studies that evaluated physical activity using a rating scale. Bibliographic search using MESH terms or keywords: physical activity, exercise, Malaysia. There is no limit to the year of publication of included studies.

Participant or population Adults having diabetes mellitus (type 1 or type 2) in Malaysia.

Intervention None.

Comparator None.

Study designs to be included Cross-sectional studies and baseline component of cohort studies.

Eligibility criteria (a) Study participants are adults; (b) Studies conducted in Malaysia; (c) Used a rating scale to measure physical activity.

Information sources An extensive literature search will be carried out on two electronic databases (PubMed, Scopus), and supplemented by a Google Scholar search.

Main outcome(s) Physical activity score or proportion of physical inactivity.

Additional outcome(s) Blood pressure, body mass index, body weight, fasting blood glucose, lipids (total cholesterol, HLD-cholesterol, LDL-cholesterol, triglyceride), HbA1c, waist circumference.

Data management References retrieved will be managed using citation manager Endnote 20. Relevant data (number of participants with and without adequate physical activity, mean score of physical activity measurement) in the included studies will be extracted by a pair of investigators independently, to minimize potential bias and error as well as to resolve any disagreements.

Quality assessment / Risk of bias analysis The studies identified will then be assessed for methodological validity using JBI critical appraisal checklist for analytical cross-sectional studies.

Strategy of data synthesis Meta-analysis will be performed using MedCalc Statistical Software for proportion (prevalence of physical inactivity), and correlation (e.g., between physical activity score and HbA1c). MedCalc uses a Freeman-Tukey transformation to calculate the weighted summary proportion under the fixed and random effects model. MedCalc uses the Hedges-Olkin method for calculating the weighted summary Correlation coefficient under the fixed effects model, using a Fisher Z transformation of the correlation coefficients. Next the heterogeneity statistic is incorporated to calculate the summary Correlation coefficient under the random effects model.Meta-analysis will be performed using MedCalc Statistical Software. For meta-analysis of studies with a continuous measure (comparison of means between treated cases and controls), MedCalc uses the Hedges g statistic as a formulation for the standardized mean difference under the fixed effects model. The heterogeneity statistic is incorporated to calculate the summary standardized mean difference under the random effects model. MedCalc uses a Freeman-Tukey transformation to calculate the weighted summary proportion under the fixed and random effects model.

Subgroup analysis For physical inactivity: (a) Gender; (b) Ethnic groups; (c) Education.

Sensitivity analysis None.

Language restriction None.

Country(ies) involved Malaysia.

Other relevant information This systematic review will be prepared following PRISMA guidelines.

Keywords Adult; Education; Ethnic Groups; Glycated Hemoglobin; Physical Activity; Malaysia; Meta-Analysis; Sex Factors.

Dissemination plans Publication of manuscript in a journal.

Contributions of each author

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