

The Association of Physical inactivity with Obesity and Type 2 Diabetes Mellitus risk in Emiratis: a Case-Controlled Study

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Background

Increasing prevalence of T2DM in the United Arab Emirates (UAE) has been attributed to lifestyle factors, including physical inactivity (PIA). However, the contribution of PIA to diabetes in the UAE has been poorly investigated.

Aim

Examine the independent and combined association of PIA and obesity with T2DM among Emiratis.

Methods

Participants included Emirati adults, 560 free from diabetes, and 406 with T2DM, matched for age and gender. Physical activity (PA) at work, transport, and leisure was collected using the Global Physical Activity Questionnaire (GPAQ), and classified into; low- (LPA), moderate- (MPA); or high (HPA) PA. PIA was defined by LPA. Obesity was defined as $BMI \geq 30 \text{ kg/m}^2$.

Results

PIA rates were high irrespective of diabetes status (66.8% in controls, 68.7% in T2DM cases). Compared to controls, recreational-specific PIA rates were higher among participants with T2DM. Logistic regression analyses showed no significant association of PIA with T2DM in males (OR= 1.36, 95% CI 0.93-2.0, $P= 0.117$) or females (OR= 1.171, 95% CI 0.73-1.90, $P= 0.513$), but a significant association of BMI with T2DM in males (OR= 1.062, 95% CI 1.03-1.10, $P= 0.001$) and females (OR= 1.094, 95% CI 1.06-1.13, $P<0.001$). Combined analyses showed that the impact of obesity and PIA on prevalence of T2DM is largely attributable to obesity alone.

Conclusion

This study have highlighted the larger impact of obesity on T2DM risk in the Emirati population. However, due to the cross-sectional nature, prospective longitudinal studies are required to investigate the causal association of PIA and obesity with incidental T2DM.