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Association between Physical Inactivity and Sedentary Behaviours with Risk of Hypertension among Sedentary Occupation Workers: A Cross-Sectional Study

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Abstract : Introduction: Hypertension is the major risk factor for cardiovascular diseases and stroke and a universe leading cause of disability-adjusted life years and mortality. Adopting an unhealthy lifestyle is thought to be associated with developing hypertension regardless of predisposing genetic factors. This study aimed to examine the association between recreational physical activity (RPA), and sedentary behaviors with a risk of hypertension among ministry employees, where there is no role for occupational physical activity (PA), and to scrutinize participants' time spent in RPA and sedentary behaviors on the working and weekend days. Methods: A cross-sectional study was conducted among randomly selected 2562 employees working at ten randomly selected ministries in Kuwait. To have a representative sample, the proportional allocation technique was used to define the number of participants in each ministry. A self-administered questionnaire was used to collect data about participants' socio-demographic characteristics, health status, and their 24 hours' time use during a regular working day and a weekend day. The time use covered a list of 20 different activities practiced by a person daily. The New Zealand Physical Activity Questionnaire-Short Form (NZPAQ-SF) was used to assess the level of RPA. The scale generates three categories according to the number of hours spent in RPA/week: relatively inactive, relatively active, and highly active. Gender-matched trained nurses performed anthropometric measurements (weight and height) and measuring blood pressure (two readings) using an automatic blood pressure monitor (95% accuracy level compared to a calibrated mercury sphygmomanometer). Results: Participants' mean age was 35.3±8.4 years, with almost equal gender distribution. About 13% of the participants were smokers, and 75% were overweight. Almost 10% reported doctor-diagnosed hypertension. Among those who did not, the mean systolic blood pressure was 119.9±14.2 and the mean diastolic blood pressure was 80.9±7.3. Moreover, 73.9% of participants were relatively physically inactive and 18% were highly active. Mean systolic and diastolic blood pressure showed a significant inverse association with the level of RPA (means of blood pressure measures were: 123.3/82.8 among relatively inactive, 119.7/80.4 among relatively active, and 116.6/79.6 among highly active). Furthermore, RPA occupied 1.6% and 1.8% of working and weekend days, respectively, while sedentary behaviors (watching TV, using electronics for social media or entertaining, etc.) occupied 11.2% and 13.1%, respectively. Sedentary behaviors were significantly associated with high levels of systolic and diastolic blood pressure. Binary logistic regression revealed that physical inactivity (OR=3.13, 95% CI: 2.25-4.35) and sedentary behaviors (OR=2.25, CI: 1.45-3.17) were independent risk factors for high systolic and diastolic blood pressure after adjustment for other covariates. Conclusions: Physical inactivity and sedentary lifestyle were associated with a high risk of hypertension. Further research to examine the independent role of RPA in improving blood pressure levels and cultural and occupational barriers for practicing RPA are recommended. Policies should be enacted in promoting PA in the workplace that might help in decreasing the risk of hypertension among sedentary occupation workers.

Keywords : physical activity, sedentary behaviors, hypertension, workplace
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