

Associations of Occupational and Leisure-Time Physical Activity With Tobacco Smoking and Dual Use of E-Cigarettes Among Adults – A Representative Cross-Sectional Survey in Germany

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Background: High levels of occupational physical activity (OPA) may have adverse health effects and are associated with a higher prevalence of smoking. On the other hand, leisure-time physical activity (LTPA) has beneficial health effects, increases cardiorespiratory fitness, and is associated with a lower smoking prevalence. However, evidence on the associations between OPA, LTPA, and smoking behaviour – especially regarding tobacco, e-cigarette use, and their dual use – remains limited in the German adult population.

Methods: We used data from GEDA 2019/2020-EHIS, a representative cross-sectional survey of the German adult population conducted by structured computer-assisted telephone interviews. Questions on physical activity and smoking behaviour were based on the European Health Interview Survey (EHIS) questionnaire. Multinomial and binary logistic regressions were used to assess associations between OPA (very/moderately/not active = reference), LTPA (very/moderately/low/not active = ref.), and their interaction effect with smoking behaviour (tobacco smoking status (current/ex/never = ref.) and cigarettes smoked per day for tobacco cigarettes (<10 = ref/10–20/>20) and the dual use with e-cigarettes (dual use/single tobacco smoker = ref.), adjusted for age, gender, education, and income.

Results: Overall, 22,708 people aged ≥18 years responded. Very active OPA was associated with a higher odd of being a current smoker than a never smoker (odds ratio (OR) = 1.70; 95% confidence interval (CI) = 1.52, 1.90), while very active LTPA was linked to lower odds (OR = 0.60; 95% CI = 0.54, 0.67). The odds of dual use were higher for those who are very active in OPA (OR = 1.63; 95% CI = 1.24, 2.15) but lower for those who are low or moderately active in LTPA (OR = 0.60; 95% CI = 0.45, 0.81, respectively: OR = 0.56; 95% CI = 0.41, 0.78). Being active at work but not during leisure time was associated with higher odds of tobacco smoking (OR = 1.37; 95% CI = 1.06, 1.77), while being inactive at work but active during leisure time with lower odds of tobacco smoking (OR = 0.55; 95% CI = 0.44, 0.70).

Conclusion: These findings highlight contrasting associations between OPA and LTPA and smoking. While being active at work was associated with higher odds of current smoking, smoking more cigarettes per day, and dual use of tobacco and e-cigarettes, being active during leisure time appears to be a protective measure. Promoting smoking cessation, especially among those with physically demanding jobs, may be an important strategy in tobacco use prevention.

