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Cardiovascular Disease Associated with Occupational and Leisure-Time Activity: The Physical Activity Health Paradox in the United States

Tyler D. Quinn¹, Peter Smith², Yongsuk Seo³, Bethany Barone Gibbs¹. ¹University of Pittsburgh, Pittsburgh, PA, ²Institute for Work and Health, Toronto, Ontario, ³Kent State University, Kent, Ohio.

PURPOSE: Emerging literature exists describing opposing effects of occupational physical activity (OPA) and leisure-time physical activity (LTPA) on cardiovascular health among European and Asian populations; little research has demonstrated a similar effect in the U.S. This analysis examines the prevalence of cardiovascular disease (CVD) associated with OPA and LTPA in a nationally representative U.S. sample. **METHODS:** This is a cross-sectional analysis from individuals completing the 2015 National Health Interview Survey (NHIS) and its occupational health supplement questionnaire from the National Institute for Occupational Safety and Health (NIOSH) (n=19,429). Logistic regression estimated the odds of self-reported composite CVD (coronary heart disease, heart attack, stroke, or angina) and its component diseases associated with self-reported OPA and LTPA. OPA was measured as “How often does your job involve repeated lifting, pushing, pulling, or bending?” on a 5-item Likert scale (never–always). LTPA was operationalized into three categories: 0 minutes/week of reported moderate-to-vigorous activity, 1-149 minutes/week, or ≥ 150 minutes/week. Additional analyses were stratified by sex, smoking status, and level of LTPA. All models were adjusted for age, sex, race/ethnicity, smoking status, alcohol consumption, family income, body mass index, education, US nativity, LTPA category, and OPA level. **RESULTS:** “Always” performing OPA was associated with higher odds for composite CVD, coronary heart disease, heart attack, and angina compared to “never” (OR=1.84, p=0.001, OR=1.83, p=0.006, OR=2.81, p=0.006, and OR=1.93, p=0.049, respectively). Additionally, “often” performing OPA was associated with higher odds for heart attack (OR=1.89, p=0.038). Level of LTPA was not associated with odds of CVD (p>0.05). Associations of high OPA with CVD outcomes were more apparent in females vs. males, with lower LTPA levels, and when the sample was restricted to never smokers. **CONCLUSION:** While LTPA was not associated, individuals with higher OPA had higher rates of CVD. Although uncontrolled confounding is still possible, even after extensive adjustment, the seemingly paradoxical, adverse effect of OPA on CVD should be investigated further.