Weekend warrior physical activity engagement and the risk of mental health conditions: A systematic review and narrative synthesis

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Citation:

Study	Moderators for stratified analyses	Significant moderation (Yes✓/No✗)	Significant associations
Hamer et al., 2017	Obesity, smoking, sex, age, chronic disease	Age, chronic disease: ✓ Others: ✗	Older adults (>60 y) and chronic disease groups
Chen et al., 2023	Age, sex, race, education, income, marital status	No ✗	Strongest effects at 45–64 y
Liang et al., 2023	Age, sex, race, education, income, marital status, smoking, alcohol, sleep	Age, sex, race, education, income, marital status, smoking, alcohol, sleep: ✓	Females, 40–59 y, higher degrees, married, smokers, normal sleepers
Li et al., 2024	Sex, age, race, education, income, marital status	No ✗	NA
Min et al., 2024	Age, sex	No ✗	NA
Seol et al., 2024	No stratified analyses	NA	NA
Yang et al., 2024	Different thresholds and distribution patterns for WW	No ✗	NA
Andersen et al., 2025	No stratified analyses	NA	NA
Chen et al., 2025	Sex, age, race, education, marital status, BMI, smoking, alcohol consumption, sleep duration, hypertension, income, diabetes	Income, diabetes: ✓ Others: ✗	WW was significantly associated with a lower risk of anxiety among individuals with low to middle income and those diagnosed with diabetes
de Victo et al., 2025	Sex, obesity	No ✗	NA

Liu et al., 2025	Age, sex, sedentary time, light PA, genetic risk, cardiometabolic disease status	Genetic risk: ✓ Others: ✕	Low PRS + RPA: Lowest risk of depression/anxiety Low PRS + WW: Lowest risk of depression/anxiety High PRS + Inactive: Highest risk of depression/anxiety
Xu et al., 2025	Age, sex, race, education, marital status, income, BMI, smoking, alcoholism, sedentary time	Age: ✓ Others: ✕	Just in adults aged 65–80, WW and RPA had comparable associations

Notes: BMI: Body Mass Index, PA: Physical Activity, PRS: Polygenic Risk Score, RPA: Regular Physical Activity, WW: Weekend Warrior