

Association of BMI and Sex With Moderate and Vigorous Physical Activity in Baltic Adolescents: Insights From the 2018 HBSC Study

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Purpose: To examine the association of the overlap of body mass index (BMI) and sex with moderate (MPA) and vigorous (VPA) physical activity among adolescents in the Baltic Region.

Methods: This study analysed data from the 2018 HBSC study, including 12,934 adolescents (mean age: 13.6 ± 1.6 years) from Estonia, Latvia, and Lithuania. MPA was self-reported and categorised as ≤ 6 days/week or 7 days/week, while VPA was classified as daily or non-daily. BMI was derived from self-reported height and weight and categorised into underweight, normal weight, overweight, or obese. Descriptive statistics were presented as relative frequencies with 95% confidence interval (CI).

Results: Overall, 82.4% (95% CI = 81.6%–83.0%) of adolescents engaged in moderate physical activity < 7 days per week. For MPA, boys with overweight or obesity had a higher prevalence of engaging in MPA < 7 days per week [85.1% (95% CI = 82.8–87.0)] compared to boys with normal weight [78.4% (95% CI = 77.1%–79.7%)] or underweight [78.8% (95% CI = 75.0%–82.1%)]. Similarly, girls with overweight or obesity also showed higher MPA < 7 days per week [88.3% (95% CI = 85.9%–90.3%)] than girls with normal weight [84.6% (95% CI = 83.4%–85.6%)] or underweight [82.8% (95% CI = 80.0%–85.2%)]. For VPA, no significant differences were found in < 7 days per week among boys across BMI categories [underweight [87.3% (95% CI = 85.3%–88.9%)]; normal weight [85.4% (95% CI = 84.6%–86.2%)]; overweight or obesity [88.9% (95% CI = 87.4%–90.3%)]. On the other hand, girls with overweight or obesity had a higher prevalence of VPA < 7 days per week [91.2% (95% CI = 89.0%–92.9%)] than girls with normal weight [89.1% (95% CI = 88.1%–90.0%)] or underweight [88.3% (95% CI = 85.9–90.3%)].

Conclusion: This study highlights significant differences in moderate and vigorous physical activity patterns among adolescents in the Baltic Region based on sex and BMI. While the high prevalence of insufficient physical activity is well known, examining the overlap of contributing factors can provide a more comprehensive understanding of the most vulnerable subgroups. Additionally, the limited number of studies focusing on vigorous physical activity (VPA) underscores the relevance of this study in addressing this gap.

