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BriefTrends: Association between Strength Training and ADHD in U.S. Children – NHIS, 2020

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Abstract This BriefTrends describes the prevalence of no strength training and its association with ADHD in U.S. children participating in the 2020 NHIS.

Keywords: *strength training, ADHD, NHIS, physical education, physical activity*

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1. Purpose

To estimate the prevalence of strength training risk and examine its relationship with ADHD in U.S. children.

2. Data Source

The 2020 National Health Interview Survey (NHIS).

3. Population

Noninstitutionalized U.S. children 6 to 17 years of age.

4. Variables

1) Strength training exercise status (at least some or none), 2) Current attention-deficit hyperactivity disorder (ADHD) (Has ADHD or No ADHD), 3) Sex (boy or girl), and 4) Control variables: age, sex, race, and income.

5. Analysis

Prevalence (%) estimates of no strength training exercise, standard errors for prevalence estimates, Rao-Scott chi-square test statistic (χ^2_{RS}) for difference in prevalence estimates, odds ratios (ORs) representing the strength training and ADHD association with 95% confidence intervals (CIs) for ORs. SAS Survey Procedures were used, version 9.4.

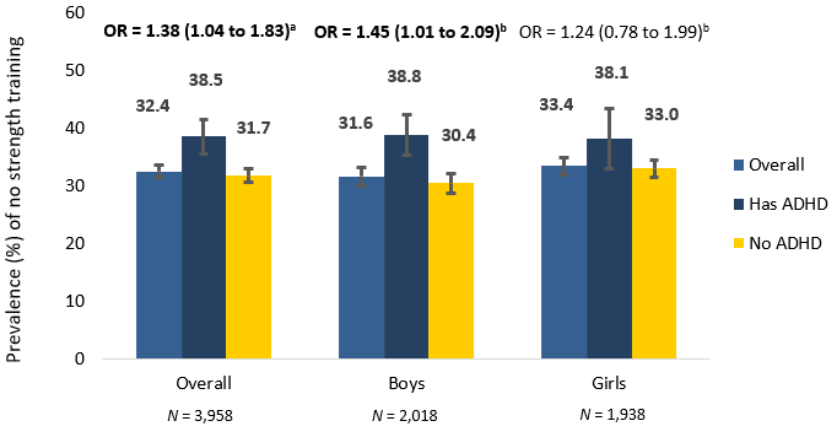

Figure 1. Prevalence of no strength training reported by U.S. children (6 to 17 years of age), overall and by ADHD status and sex, NHIS 2020. Note. *N* represents respective overall sample size. Prevalence estimates (%) are weighted. Estimates are for those reporting "never" to a question asking how often the child typically exercises to strengthen or tone their muscles, with activities like sit-ups, push-ups, or weight lifting. Error bars represent standard errors for the prevalence estimates. Odds ratio (OR) represents the odds of no strength training (versus at least some) for those with ADHD compared to those with no ADHD. Bold ORs are significant ($p < .05$). [a]OR (95% CI) adjusted for age, sex, race, and income. [b]OR (95% CI) adjusted for age, race, and income.

6. Findings

The overall prevalence of no strength training exercise among 6- to 17-year-old children was 32.4% (95% CI: 30.3 to 34.5), with no significant sex difference (p = .395). Overall, those with ADHD were more likely to report no strength training as compared to their counterparts (38.5% vs. 31.7%, p = .024), with 38% greater odds (OR = 1.38, 95% CI: 1.04 to 1.83). Among boys, those with ADHD were also more likely to report no strength training (38.8% vs. 30.4%, p = .025), with 45% greater odds (OR = 1.45, 95% CI: 1.01 to 2.09). Although trending in a similar direction, the greater prevalence of no strength training among girls with ADHD was not significant as compared to their counterparts (38.1% vs. 33.0%, p = .323).

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