

RESEARCH BRIEF

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PEER REVIEWED



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Table 1. Descriptive Statistics of 4 Latent Subgroups (N = 18,253), Youth Risk Behavior Survey, 2011–2013^a

Variable	Total	Latent Subgroup ^b			
		High Level of PA/Low Level of SB	High Level of PA/High Level of SB	Low Level of PA/High Level of SB	Low Level of PA/Low Level of SB
Overall	—	30.5 (28.6–32.3)	12.8 (11.8–13.8)	39.5 (37.4–41.6)	17.2 (15.8–18.7)
Sex					
Male	49.5 (48.9–50.9)	69.0 (67.2–70.9)	78.6 (76.3–80.9)	42.9 (41.1–44.6)	8.6 (7.0–10.2)
Female	50.5 (49.1–51.9)	31.0 (29.1–32.8)	21.3 (19.1–23.7)	57.1 (55.4–58.9)	91.4 (89.8–93.0)
Grade level					
9	26.4 (25.0–27.9)	32.9 (30.1–35.7)	29.5 (26.8–32.2)	27.3 (25.9–28.7)	10.9 (9.2–12.6)
10	25.6 (24.2–26.9)	25.6 (23.2–28.1)	30.6 (28.0–33.3)	22.6 (21.0–24.2)	28.4 (25.7–31.1)
11	24.3 (23.4–25.2)	21.6 (19.8–23.3)	21.6 (20.0–23.2)	25.8 (24.5–27.0)	28.0 (25.6–30.3)
12	23.7 (22.8–24.6)	19.9 (18.5–21.3)	18.3 (16.4–20.1)	24.4 (23.3–25.5)	32.7 (30.2–35.3)
Eats fruits and vegetables ^c	21.5 (20.4–22.6)	28.2 (26.3–30.1)	30.9 (28.9–33.0)	15.3 (13.8–16.5)	17.3 (14.9–19.5)
Does not drink soda ^d	21.5 (20.3–22.7)	25.2 (23.3–27.2)	15.5 (13.7–17.3)	18.3 (16.7–19.9)	26.9 (24.1–29.7)
Drinks alcohol ^e	36.3 (34.8–37.9)	37.0 (34.7–39.3)	39.2 (36.6–41.8)	33.8 (31.9–35.7)	38.8 (35.4–42.2)
Uses tobacco ^f	22.9 (21.2–24.5)	25.3 (23.5–27.0)	25.2 (22.5–27.8)	21.0 (19.0–23.1)	21.2 (18.3–24.0)
Uses marijuana ^g	13.3 (11.0–15.5)	12.1 (9.5–14.7)	17.1 (14.2–19.9)	14.6 (12.2–16.9)	9.4 (7.0–11.9)
Is depressed ^h	28.3 (27.0–29.5)	21.6 (19.8–23.5)	23.7 (21.6–25.9)	34.1 (32.4–35.8)	30.2 (27.5–32.8)
Has had sexual intercourse ⁱ	32.3 (30.5–34.0)	30.3 (28.0–32.5)	35.8 (33.3–38.2)	30.2 (28.3–32.1)	37.8 (34.2–41.4)
Is obese ^j	13.0 (12.0–13.9)	7.9 (6.5–9.3)	16.0 (14.3–17.6)	16.9 (15.6–18.2)	9.5 (8.2–10.8)
Gets sufficient sleep (≥8 h/night)	31.7 (30.6–32.8)	39.4 (37.7–41.2)	33.9 (31.6–36.3)	24.6 (23.2–26.0)	32.7 (30.2–35.2)
Item-response probability (95% confidence interval)					
Engages in regular PA (≥60 min/d)	—	.63 (.53–.71)	.65 (.56–.72)	.05 (.04–.07)	.06 (.05–.08)
Participates on sports team (≥1 team/y)	—	.83 (.79–.87)	.77 (.73–.81)	.32 (.26–.40)	.33 (.27–.39)
Does muscle-strengthening exercise	—	.90 (.87–.92)	.92 (.89–.94)	.20 (.17–.24)	.27 (.20–.36)

Abbreviations: PA, physical activity; SB, sedentary behavior.

^a All values are percentage (95% confidence interval) unless otherwise indicated.

^b Latent class analysis with 4 latent subgroups was best fitted relative to the models with 1, 2, 3, and 5 latent subgroups based on fit statistics (ie, lower values for Akaike information criterion, Bayesian information criterion [BIC], sample-size-adjusted BIC, and higher values on average classification probability). Details on methods are available elsewhere (10). The profile of 4 latent subgroups was determined according to the item-response probabilities of 3 PA-related and 2 screen-based SB questions estimated from the conditional latent class analysis controlling for age and grade.

^c Ate fruits and vegetables ≥5 times per day during the past 7 days.

^d Drank a can, bottle, or glass of soda or pop 0 times per day during the past 7 days.

^e Had ≥1 drink of alcohol on ≥1 days of the past 30 days.

^f Smoked cigarettes or cigars or used chewing tobacco, snuff, or dip on ≥1 days of the past 30 days.

^g Used marijuana ≥1 times during the past 30 days.

^h Felt so sad or hopeless almost every day for 2 weeks or more in a row that they stopped doing some usual activities during the past 12 days.

ⁱ Had sexual intercourse with ≥1 people during the past 3 months.

^j ≥95th percentile for body mass index, by age and sex.

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Variable	Total	Latent Subgroup ^b			
		High Level of PA/Low Level of SB	High Level of PA/High Level of SB	Low Level of PA/High Level of SB	Low Level of PA/Low Level of SB
(≥3 d/wk)					
Watches television ≥3 h/d	—	.06 (.05–.08)	.67 (.60–.73)	.58 (.53–.63)	.14 (.11–.18)
Watches video or uses computer ≥3 h/d	—	.14 (.12–.18)	.62 (.53–.69)	.62 (.57–.67)	.10 (.08–.14)

Abbreviations: PA, physical activity; SB, sedentary behavior.

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^j ≥95th percentile for body mass index, by age and sex.

Table 2. Adjusted Odds Ratio of Having Sufficient Sleep (≥ 8 Hours per Night) Between Latent Subgroups, Youth Risk Behavior Survey, 2011–2013

Comparisons	LogB (SE)	P Value	AOR ^a (95% CI)
High level of PA/Low level of SB (reference)			
High level of PA/High level of SB	−0.27 (0.1)	.05	0.76 (0.58–1.00)
Low level of PA/High level of SB	−0.53 (0.1)	<.001	0.59 (0.49–0.70)
Low level of PA/Low level of SB	−0.15 (0.2)	.45	0.87 (0.59–1.26)
High level of PA/High level of SB (reference)			
Low level of PA/High level of SB	−0.26 (0.2)	.08	0.77 (0.57–1.04)
Low level of PA/Low level of SB	0.13 (0.2)	.44	1.14 (0.82–1.57)
Low level of PA/Low level of SB (reference)			
Low level of PA/High level of SB	0.39 (0.2)	.08	1.48 (0.96–2.27)

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; PA, physical activity; SB, sedentary behavior; SE, standard error.

^a The adjusted odds ratios of having sufficient sleep (≥ 8 h/night) were estimated from the conditional latent class analysis with a sleep variable as a distal outcome after controlling for sex, grade level, fruit and vegetable consumption, no soda consumption, alcohol consumption, tobacco use, marijuana use, depression, sexual intercourse, and obesity.