Healthy Youth: Effect of Physical Activity and Sleep Patterns on Physical and Mental Well-Being in Adolescents

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Purpose: Adolescent overweight/obesity and mental health are top public health priorities. This study examined physical activity and sleep patterns and their associations with physical and mental well-being among adolescents. Procedure: A three-section survey designed to record student's experiences for a 7-day period was administered in one high school. Data included student's age, gender, grade, height/weight, physical activity (participation in athletic program, duration and intensity), sleep patterns (time in bed, sleep onset latency, quality, fatigue), and mental well-being (stress, anxiety, depression). Data: A total of 569 students completed all three sections of survey with 7 days of data. Multivariate logistic regression models show that males (OR=1.66; p=0.033), non-athletes (OR=3.21; p<.0001), and students taking 20+ minutes to fall asleep (OR=2.009; p=0.009) are more likely to be overweight/obese (BMI > 85 percentile). Regarding mental health, sleep duration less than 7 hours (OR=1.814; P=0.0084), poor sleep quality (OR=3.184; p<.0001), and fatigue (OR=2.854; p<.0001) are associated with stress. Anxiety is correlated with sleep duration less than 7 hours (OR=1.618; p=0.046), poor sleep quality (OR=2.402; p=0.0015), and fatigue (OR=2.57; p<.0001). Finally, non-athletes (OR=1.987; p=0.026), poor sleep quality (OR=2.365; p=0.004), and fatigue (OR=3.128; p<.0001) are associated with depression. Female gender is associated with stress, anxiety, and depression (all p-values < .0001). Conclusions: This study concluded that physical activity and sleep patterns, both modifiable risk factors, have measurable effects on teens' physical and mental well-being. These results can inform future research and design of interventions to improve adolescent health.

Awards Won: