Adolescent Sleep Patterns

Biological, Social, and Psychological Influences

Edited by

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1. Sleep and Adolescence: A Social Psychologist's Perspective

SANFORD M. DORNBUSCH

My immediate reaction to reading the chapters in this book is shame. Generations of researchers have studied the psychological and social lives of adolescents, and their main tools have been time-use studies. Among numerous examples, how much time each day or week does the adolescent spend watching television, hanging out with friends, or engaging in extracurricular activities? What is the relation of such time expenditures to measures of academic performance, deviance, or other indicators of adolescent functioning?

The emphasis has been completely on the waking hours, and this book impressively underscores the importance of hours spent sleeping. An undergraduate friend, with whom I had discussed some of the findings in various chapters, immediately provided a real-life illustration of the interaction between the physiological imperatives of sleep and the social perceptions by which we structure our lives. She had been accustomed to staying up very late and sleepily forcing herself to attend her morning classes. In general, she found Stanford professors boring. Now she is getting more sleep and finding her teachers more interesting.

A constant theme of life in society is determining the causes of the phenomena we perceive. Often, there is a choice to be made between internal causes and external causes. For example, I was once feeling sick in Guatemala City and, feeling dizzy, I decided that I was even sicker than I had believed. I was one of the few persons who was relieved to discover that I was experiencing a minor earthquake. A different example occurs in the study of hyperactive children, some of whose restlessness in school may be a product of boring teachers.

Let me use an example of considerable importance in the lives of American adolescents. Part-time employment while attending high school is more common in the United States than in other industrial

societies. Those American adolescents who work a moderate number of hours each week tend to have higher grades in school than do adolescents who do not work at all. Yet, those adolescents who are employed for a large number of hours, say for more than 20 hours a week, tend to have lower grades than those in the other two groups.

The typical explanations of the negative relation between many hours of work and high school grades reflect the problems of explaining this simple association. Perhaps spending so much after-school time at work (external) prevents an appropriate investment of energy on schoolwork, or perhaps the adolescent chooses to work so much (internal) because he or she has done poorly in school and developed low educational expectations. Probably both explanations are partially correct, but neither considers the additional impact of being sleep-deprived.

Those adolescents who work long hours go to bed later and get less total sleep than do those who do not work that much. Getting insufficient sleep has an impact on the quality of the activities of adolescents and on their perceptions of the contexts in which they find themselves. The high-work group has trouble staying awake in class or while doing homework. Cross-cultural research reinforces the view that less total sleep time among adolescents is associated with inability to concentrate on schoolwork and poorer school performance, as well as with mood disorders and substance abuse.

Many years ago I did a study of gender differences in adolescents' satisfaction with their bodies (Dornbusch et al., 1984). As expected, American females were more likely to want to be thinner, but what was striking was the extent to which social class, as predicted by Thorstein Veblen (1889), led adolescent females to be increasingly dissatisfied with their bodies as they moved through puberty. The fat that normally accompanies female sexual development was negatively evaluated, whereas males were pleased with the musculature that was associated with their pubertal development. Perceptions in the social world were allowing societal standards to override biological processes.

Research on adolescent sleep is revealing a similar pattern. I must admit to my own surprise on learning that adolescents need more, not less, sleep as they move out of childhood. Neither adults nor adolescents are generally aware of the biological need for increased sleep during pubertal development. Instead, believing that sleep can be shortened for the sake of compliance with the social standards of those around them, adolescents reduce their sleep time in order to engage in activities that bring them immediate rewards. Whether for parties or jobs or cramming for examinations, adolescents engage in activities that

deprive them of sleep. Adults, unaware of the sleep needs of adolescents, require them to start school earlier in the day than is required of younger children. The social norms of the wider society, as well as those of most peer groups, do not discourage patterns of behavior that displace sleep.

The sleep needs of adolescents appear similar across cultures, but there are, as is evident in these chapters, cultural differences in sleep patterns, reflecting differences in parental and peer control, in leisure activities, and in schooling. These chapters reflect a complex mixture of biological and developmental forces that are expressed within social and cultural settings. It seems obvious that, unaware of the sleep needs of adolescents, norms for behavior have developed that have unwittingly created additional problems for adolescents.

Researchers who study adolescent functioning should take advantage of this new knowledge and reshape part of the research agenda. For example, there are already hints that knowledge about sleep patterns may contribute to the study of deviant behavior, school failure, and psychological symptoms among adolescents beginning in the prepubertal period and extending into young adulthood. My prediction is that sleep time will have a small, but measurable, influence on various indicators of adolescent functioning even after controlling for the contributions of the usual variables that affect adolescent development.

Such studies also have practical consequences in the short run. Parents and adolescents may become more aware of the consequences of sleep deprivation; far more significant, policy makers may assess the negative impact of current practices in part-time employment and schooling. With so many adolescents working too many hours or too late in the evening, and adolescents starting school so early each weekday, there appears to be a need for thoughtful oversight of the demands of employers and schools. Adolescence is defined as a time for development, and harmful sleep patterns that increase risks for adolescents during that sensitive period cause adult society to pay a high price. Policy makers will soon be asked to take into account the impact of sleep deprivation on adolescents.

REFERENCES

Dornbusch SM, Carlsmith JM, Duncan PD, Gross RT, Martin JA, Ritter PL, Siegel-Gorelick B (1984). Sexual maturation, social class, and the desire to be thin among adolescent females. *Journal of Behavioral and Developmental Pediatrics* 5:308–314.

Veblen T (1889). *The Theory of the Leisure Class*. New York: Macmillan.