

THE RELATIONSHIP BETWEEN SLEEP LENGTH AND GRADE-POINT AVERAGE AMONG COLLEGE STUDENTS

WILLIAM E. KELLY

University of Nevada at Las Vegas

KATHRYN E. KELLY

Louisiana Tech University

ROBERT C. CLANTON

University of Arkansas at Monticello

Previous research indicated that short sleepers (those who typically sleep 6 or fewer hours out of every 24) report more symptoms of psychological maladjustment than do long sleepers (those who sleep more than 9 hours). The presence of psychological maladjustment symptoms have been found to negatively affect academic performance. Hence, it was hypothesized that short sleepers would report lower grade-point averages than those classified as long sleepers. A college student sample's self-reported typical sleep length and grade-point averages were explored. It was found that short sleepers reported significantly lower overall grade-point averages than did long sleepers. Directions for future research are offered.

Sleep has been studied extensively (Hicks, Guista, Schretlen, & Pellegrini, 1980; Kumar & Viadya, 1984; Stuss & Broughton, 1978). Most sleep research has examined sleep disorders, physiological variables associated with sleep, and sleep cycles (cf., Steriade & McCarley, 1990). One area of sleep research which has received relatively little attention involves the identification of characteristics and behaviors correlated with sleep length.

Sleep length research has identified three distinct classifications of sleepers. These include (1) short sleepers, individuals who when left to set their own schedule, sleep 6 or fewer hours, (2) average sleepers, individuals who sleep 7 to 8 hours, and (3) long sleepers, individuals who sleep 9 or more hours out of every 24 (Webb & Agnew, 1970; Webb, 1982). Con-

sequently, studies have attempted to ascertain differences in individuals among these three sleep classifications aside from sleep time.

Earlier research indicated that short sleepers were more likely to be ambitious, energetic, and psychologically healthy. Long sleepers were described as nervous, self-critical, worriers, and often depressed (Hartmann, 1973). Conversely, more recent findings indicated that short sleepers, as compared to long sleepers, were more psychologically maladjusted, anxious, less creative, more neurotic, and more prone to hallucinate (Hicks, et al., 1980; Kumar & Vaidya, 1982; Kumar & Vaidya, 1984; Soper, Kelly, & Von Bergen, 1997). Generally, the recent studies on this topic include stronger methodologies and thus are given credence over earlier findings.

The variables associated with short sleep, such as anxiety and psychological maladjustment, have consistently been shown to be negatively associated with educational performance (Covington & Omelich, 1987; Hill & Wigfield, 1984). The experience of anxiety, psychological maladjustment, and neuroticism tend to adversely affect the educational experience by decreasing individuals' attention and concentration and increasing task performance errors (Woolfolk, 1993). It might be expected then, that individuals reporting the previously mentioned characteristics associated with short sleepers would also report lower academic performance as compared to long sleepers. Thus, it was hypothesized that individuals identifying themselves as short-sleepers would report significantly lower overall grade-point averages than long sleepers.

Method

Participants and Procedure

Participants included 148 undergraduate students enrolled in introductory psychology classes. Participation was voluntary. The mean age for the sample was 19.86 years ($sd = 3.85$). Ages ranged from 18 to 42. Males composed 49% (72) of the sample and females 51% (75). Totals do not always equal 148 because data were missing. Using the method reported by previous studies (cf., Soper, et al., 1997), short sleepers were defined as those who reported sleeping an average of 6 or fewer hours per night. Average sleepers endorsed sleeping 7-8 hours per night. Long sleepers reported sleeping 9 or more hours per night.

Instrumentation

A consent form, demographic data sheet, and a questionnaire asking participants to indicate their average sleep length for a 24 hour period were administered. Participants self-reported their overall college grade-point average (GPA).

Results

A total of 23 (15.5%) of the participants qualified as short sleepers; 107 (72.3%) as average sleepers; and 18 (12.2%) as long sleepers. These proportions are consistent with those reported by Soper, et al. (1997). Age did not significantly correlate with GPA ($r = -.06$, $p = .51$). There were no significant differences among sleep levels for age. Also, no significant differences were found by gender for sleep length or GPA. Hence, the responses were pooled for subsequent analyses. GPA was reported by 76% of the sample. Only 61% of the long sleepers reported their GPA, while 78% of both short and average sleepers reported their GPA. A one-way analysis of variance (ANOVA) revealed a significant main effect for sleep length on GPA, $F(2, 111) = 4.61$, $p < .01$. A Tukey's post-hoc revealed that long sleepers (mean = 3.24) reported significantly higher GPA's than short sleepers (mean = 2.74). Average sleepers (mean = 3.01) were not significantly different from long or short sleepers.

Discussion

The results of this study supported the hypothesis that long sleepers would report higher GPA's than short sleepers. These results support the overall higher functioning of long sleepers as compared to short sleepers. The lower GPA's of the short

sleepers may have been the result of a decreased ability to focus on education-related activities. Other psychological variables might also help explain the results. For instance, self-efficacy has been found to relate to educational achievement (Woolfolk, 1993). It may be that short sleepers possess less self-efficacy than long sleepers. Further research is needed to investigate this possibility. It should be noted that a lower percentage of long sleepers reported their GPA than short sleepers. It may be that long sleepers with lower GPA's chose not to report their GPA. If this is the case, the results of this study may have been significantly affected by a self-report bias. In the future, it might be useful for researchers to obtain both a self-reported and school-reported GPA. It may be that particular groups of sleepers either under-report or over-report their GPA's.

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Author Note

Address all correspondence to William E. Kelly, Ph.D.; Department of Counseling; University of Nevada at Las Vegas; 4505 Maryland Parkway; Box 3045; Las Vegas, NV 89154; Email: bikelly@ccmail.nevada.edu

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