

PERSONALITY DIFFERENCES BETWEEN SHORT AND LONG SLEEPERS

G. BUELA-CASAL,* J. CARLOS SIERRA and V. E. CABALLO

Departamento Personalidad, Evaluación y Tratamiento Psicológico, Facultad de Psicología, Universidad de Granada, Campus Universitario de Cartuja, 18011 Granada, Spain

(Received 16 November 1990; received for publication 13 June 1991)

Summary—Short and long sleepers are defined and distinguished from those observing shortened and lengthened sleep. To test contradictory hypotheses of whether there are personality differences between short and long sleepers, 34 short sleepers and 45 long sleepers (from a sample of 951 university subjects) completed the Eysenck Personality Inventory. Short and long sleepers showed no significant personality differences.

INTRODUCTION

Former investigations have studied the personality differences of short and long sleepers. Based on contradictory results, opposing conclusions have been drawn. Hartmann, Baekland and Zwilling (1972) postulate that long sleepers are more introverted and neurotic than short sleepers. Likewise, Hartmann concludes that with respect to neurotic disorders, long sleepers have significantly higher levels of anxiety than short sleepers. Hicks and Pellegrini (1977) reject Hartmann's hypothesis. Their research shows that the short sleepers "were found to be significantly more anxious" than the long sleepers.

On the other hand, Webb and Friel (1970, 1971), Buela-Casal (1984), and Buela-Casal and Valle-Inclán (1984) found that *Ss* "did not differ significantly on personality measures". They therefore conclude that differences between short and long sleepers other than duration of sleep are "not proven". Monti (1983) corroborates Webb and Friel's findings in unpublished research on relationships between sleep characteristics and personality.

The present study analyses whether short and long sleepers score differently on the Eysenck Personality Inventory (EPI) (Eysenck & Eysenk, 1968) with respect to the personality characteristics of neuroticism and extraversion. Short sleepers are defined as those *Ss* who sleep between four and six hours per night. Long sleepers sleep between nine and eleven hours per night (Kripke, Simons, Garfinkel & Hammond, 1979; Buela-Casal, 1984; Buela-Casal & Caballo, 1990; Webb, 1990).

METHOD

The first selection of *Ss* consisted of 951 university students who were not informed of the purpose of the experiment. They were told to fill out questionnaires about their habitual sleep-wake rhythms. We chose university students as *Ss* for various reasons. First of all, they are all of the same age group (between 18–24 years old) so we can eliminate age as a determining factor in the relation of sleep duration and personality. Second, the study was carried out during a non-exam period of the school year, therefore, these *Ss* flexibility in working hours permitted them to adapt more easily to their own sleep-wake rhythms. It is important to distinguish between short and long sleepers and those *Ss* whose sleep has been shortened or lengthened for some reason other than their usual sleep-wake rhythms.

We then administered the first questionnaire in which questions deal with *Ss* sleep-wake rhythms. The question of interest to us, asked "What is the number of hours per night that you normally sleep?" Based on the responses to this first questionnaire, we were able to carry out a

*To whom all correspondence should be addressed, currently at: Departamento Personalidad, Evaluación y Tratamiento Psicológico, Facultad de Psicología, Campus Universitario de Cartuja, 18071 Granada, Spain.

Table 1. Global distribution of Ss according to their different hours of sleep per evening

Hours	<i>f</i>	<i>f</i> %	Cummulative <i>f</i> %
4.5	4	0.42	0.42
5	7	0.74	1.16
5.5	7	0.74	1.90
6	57	5.99	7.89
6.5	35	3.68	11.57
7	206	21.66	33.23
7.5	124	13.04	46.27
8	327	34.38	80.65
8.8	86	9.04	89.69
9	67	7.04	96.73
9.5	14	1.47	98.20
10	16	1.68	99.88
10.5	0	0.00	99.88
11	1	0.10	99.98
Total	951	99.98	99.98

Short sleepers = 7.89% of distribution and long sleepers = 10.39% of distribution.

Table 2. Means and standard deviations of neuroticism and extraversion dimensions of the EPI in short and long sleepers

EPI	Short sleepers		Long sleepers	
	Mean	SD	Mean	SD
Neuroticism	13.97	3.90	12.68	4.02
Extraversion	10.73	4.06	10.83	4.55

primary classification of sleepers. The 173 short and long sleepers represented 18.28% of the distribution: 7.89% were short sleepers and 10.39% were long sleepers (see Table 1).

These 173 short and long sleepers then completed a second previously designed questionnaire that also asked about their sleep-wake rhythms. Based on three separate criteria this questionnaire allowed us to reduce the number of Ss evaluated in the experiment from 173 to 79. First of all, the questionnaire was designed so numerous questions were related: some of the questions that initiated responses in one direction implied responses in the same direction to different questions. We were able then to eliminate those Ss who failed to respond sincerely to the questionnaire. Second, based on questions such as, "What is the difference in your hours of sleep per night between the school year and vacation periods?" we were able to eliminate those Ss that displayed varied sleep-wake rhythms. Third, the questionnaire allowed us to eliminate those Ss initially labeled as short or long sleepers, whose sleep-wake rhythms may have been the result of sickness, drug intake etc. Of the 79 remaining Ss, 34 were short sleepers and 45 were long sleepers.

To these 79 Ss, we then administered Form A of the EPI to measure neuroticism and extraversion.

RESULTS

As displayed in Table 2, the averages and standard deviations of both short and long sleepers EPI scores show there were no significant differences ($P > 0.05$) between the two groups. Both groups scored rather high with respect to neuroticism, with the short sleepers average slightly higher than the long sleepers average. Both short and long sleepers scored in the intermediate range with respect to extraversion.

DISCUSSION

Differences other than sleep have been previously studied in short and long sleepers. Our study included a population of only short and long sleepers and excluded those Ss who may have shown patterns of shortened and lengthened sleep. These results were not based on clinical impressions, but on the standardized EPI test, personality characteristics of extraversion and neuroticism. Among our population of university students, we found no significant personality differences between the two groups of short and long sleepers. Our findings agree with the results obtained by Webb & Friel (1970, 1971), Monti (1983), Bucla-Casal (1984) and Bucla-Casal and Velle-Inclán (1984) and confirm Webb's conclusion that "differences between short and long sleepers are not proven" (Webb, 1979).

REFERENCES

- Bucla-Casal, G. (1984). *Aspectos psicológicos del sueño: Patrones hipnológicos humanos*. Testis de Licenciatura, Universidad de Santiago de Compostela.

- Buela-Casal, G. & Caballo, V. (1990). Patrones de sueño y diferencias individuales. In Buela-Casal, G. & Navarro, F. (Eds) *Avances en la investigación del sueño y sus trastornos*. Madrid: Siglo XXI de España Editores.
- Buela-Casal, G. & Valle-Inclán, F. (1984). *Evaluación de patrones extremos en la dimensión del sueño*. Madrid: I Congreso de Evaluación Psicológica.
- Eysenck, H. J. & Eysenck, S. (1968). *Manual for the Eysenck Personality Inventory*. San Diego, California.
- Hartmann, E., Backland, F. & Zwilling, G. (1972). Psychological differences between long and short sleepers. *Archives of General Psychiatry*, 26, 463–468.
- Hicks, R. A. & Pellegrini, R. J. (1977). Anxiety levels of short and long sleepers. *Psychological Reports*, 41, 569–570.
- Kripke, D., Simon, R., Garfinkel, R. & Hammond, C. (1979). Short and long sleep and sleeping pills. *American Journal of Psychiatry*, 36, 103–116.
- Monti, J. (1983). Sleep characteristics and their correlation with the M.M.P.I. and the Eysenck Personality Inventory. unpublished study.
- Webb, W. B. (1979). Are short and long sleepers different? *Psychological Reports*, 44, 259–264.
- Webb, W. B. (1990). Ontogenia del sueño. In Buela-Casal, G. & Navarro, F. (Eds) *Avances en la investigación del sueño y sus trastornos*. Madrid: Siglo XXI de España Editores.
- Webb, W. B. & Friel, J. (1970). Characteristics of natural long and short sleepers: a preliminary report. *Psychological Reports*, 27, 63–66.
- Webb, W. B. & Friel, J. (1971). Sleep stage and personality characteristics of natural long and short sleepers. *Science*, 171, 587–588.