

The Pittsburgh Sleep Quality Index: A New Instrument for Psychiatric Practice and Research

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Abstract. Despite the prevalence of sleep complaints among psychiatric patients, few questionnaires have been specifically designed to measure sleep quality in

quality disturbances are frequently reported in essentially all psychiatric disorders,

survey-type questionnaires (which assess difficulties over the previous year or more). A postclean questionnaire may reflect more accurately the night-to-night variations that occur in

seizure disorder, cerebrovascular disease, or dementia. No specific exclusion criteria were used.

As a secondary analysis of validity, we compared PSQI scores with polysomnographic results, being cognizant of the fact that PSQI scores reflect the experience of sleep during the previous month, while polysomnographic data were limited to 2 or 3 nights. PSQI estimates of

differences between T_1 and T_2 . Two differences were noted for depressed patients, who showed a reduction in sleep disturbances ($t = 2.32, p = 0.03$) and daytime dysfunction ($t = 3.46, p = 0.002$) at T_2 .

Table 1. Component-global Pittsburgh Sleep Quality Index (PSQI) score correlations¹

Component	All groups (<i>n</i> = 48)		Controls (<i>n</i> = 52)		Depressives (<i>n</i> = 34)		DIMS ² (<i>n</i> = 45)		DOES ³ (<i>n</i> = 17)			
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>		
Sleep quality			0.83	0.001	0.64	0.001	0.71	0.001	0.68	0.001	0.57	0.01

Age was a significant covariate only for the daytime dysfunction component; but

subject's factors were inversely correlated as reported

**ent-Neuman-
arisons**

ves, DIMS, DOES;
ss, DIMS

ves, DIMS;
ss, DIMS

ves, DIMS;
ss, DIMS

ves, DIMS;
ss, DIMS

ves, DIMS, DOES

ves, DIMS;
ss, DIMS

ves, DIMS, DOES;

ves, DIMS, DOES;
ss, DIMS

Fig. 1. Pittsburgh Sleep Quality Index (PSQI): Mean component score profiles

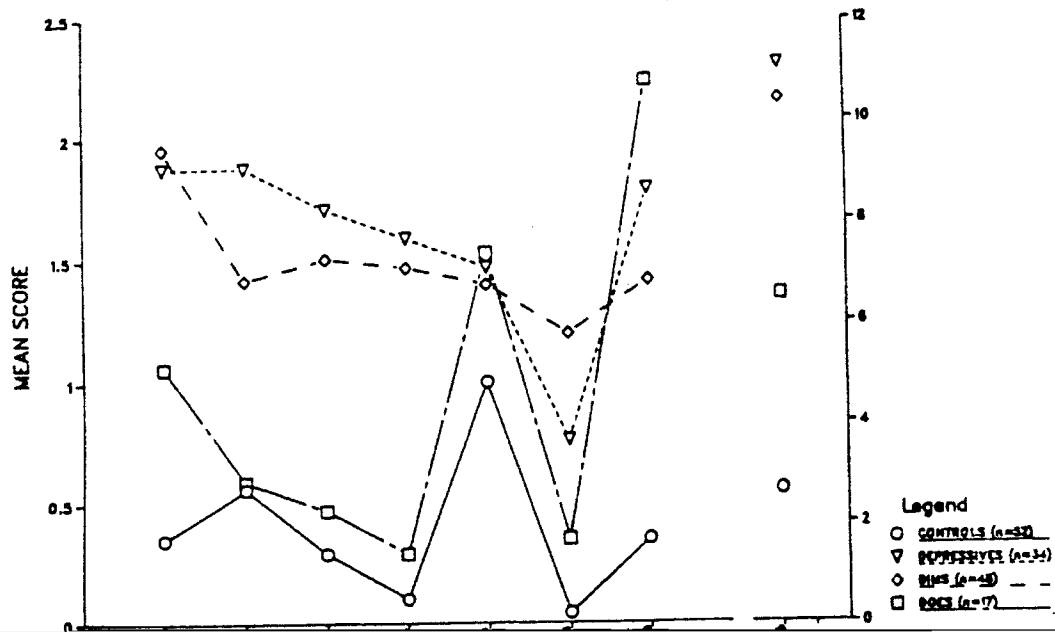
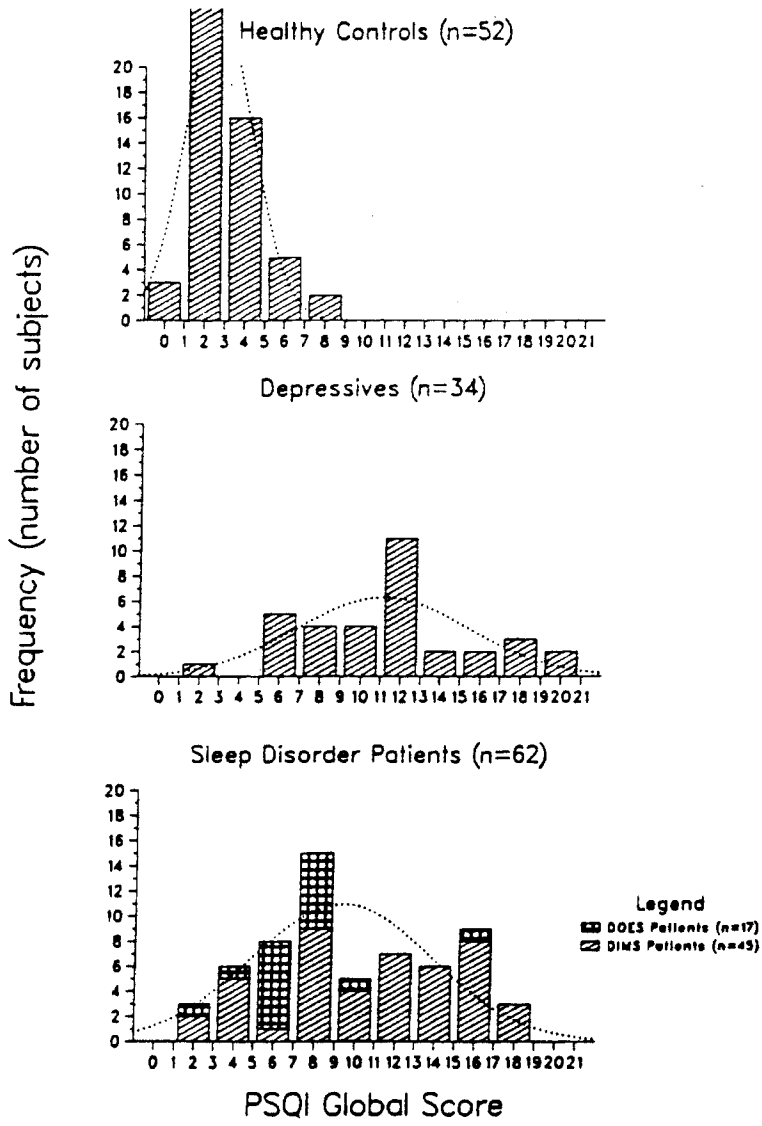


Fig. 2. Pittsburgh Sleep Quality Index (PSQI) global scores

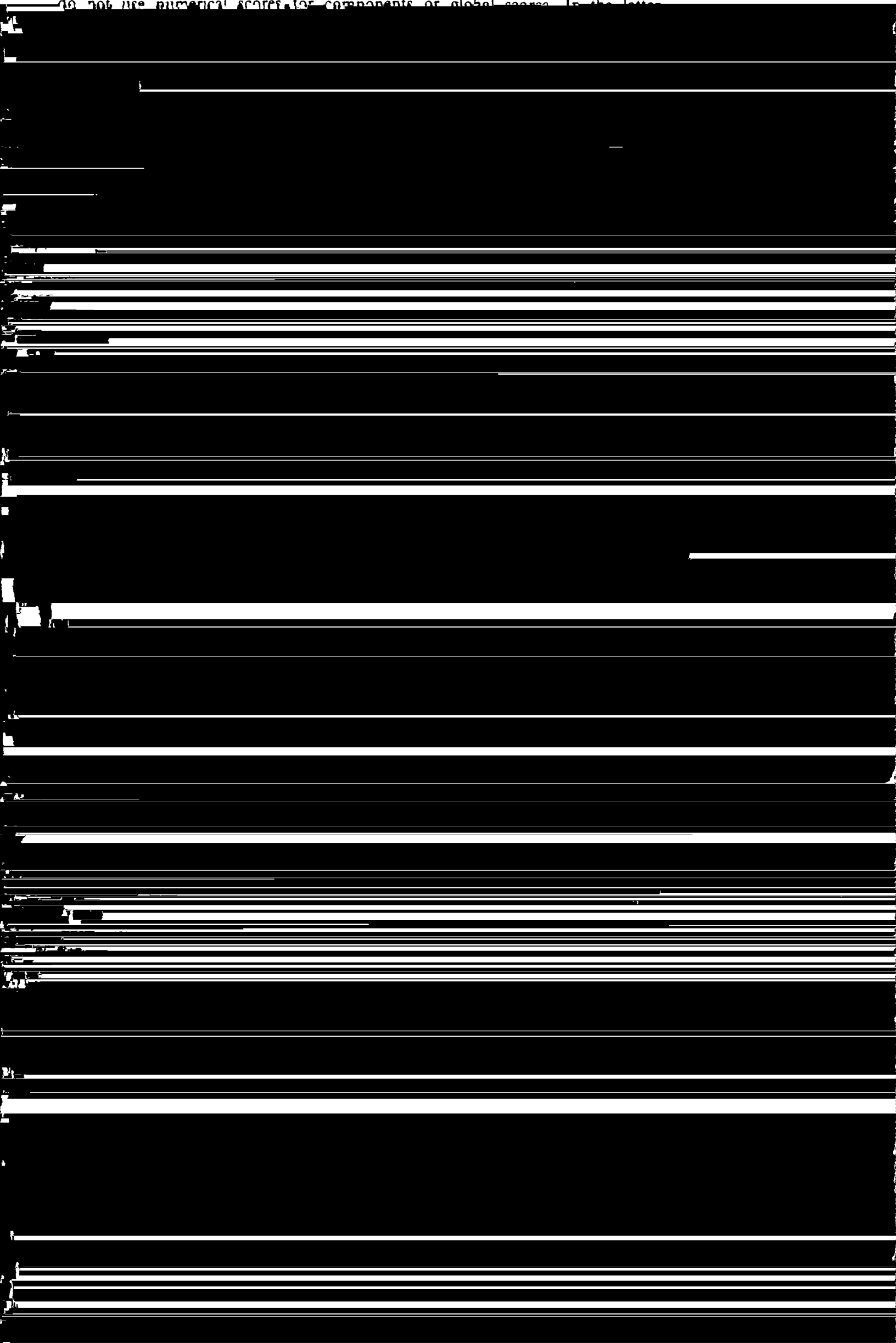


PSQI global scores were significantly lower in DOES patients compared to DIMS patients and healthy controls.

1962; Karacan et al., 1976, 1983; Bixler et al., 1979; Johnson and Spinweber, 1983; Lugaresi et al., 1983; Welstein et al., 1983; Mellinger et al., 1985). The questions are usually few in number and general in scope, typically focusing on sleep duration, the presence of insomnia, and the use of medications for sleep. Habitual sleep

has been used in clinical studies most often to compare

do not use numerical scores for components or global scores. In the letter



Consistency for the PSQI is lower than that reported by Domino et al. (1984), who
measured their reaction to two occasions separated by 10 weeks, and found

found statistically significant differences on self-report sleep questionnaires for insomniacs versus controls. McGhie (1966) compared depressed and nondepressed psychiatric patients, and found no differences on the total sleep disturbance scale of *Psychiatry*. Finally, Webb et al. (1976) found differences between "good" and

over time. Further, the PSQI could be useful in studying the relation between sleep quality and other variables, such as age, gender, health status, medical and psychiatric conditions, and performance on other psychological variables. Finally, the PSQI could be used to examine the longitudinal effects of specific therapeutic interventions for psychiatric disorders or sleep disorders. For example, sleep quality

psychotherapy. Used in this way, the PSQI might also detect relapses heralded by the onset or reemergence of sleep disturbance.

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Welstein, L.; Dement, W.C.; Redington, D.; and Guilleminault, C. Insomnia in the San Francisco Bay Area: A telephone survey. *Sleep/Wake Disorders: Natural History, Epidemiology, and Long-Term Evolution*. New York: Raven Press, 1983. pp. 73-85.

Appendix. Pittsburgh Sleep Quality Index (PSQI)

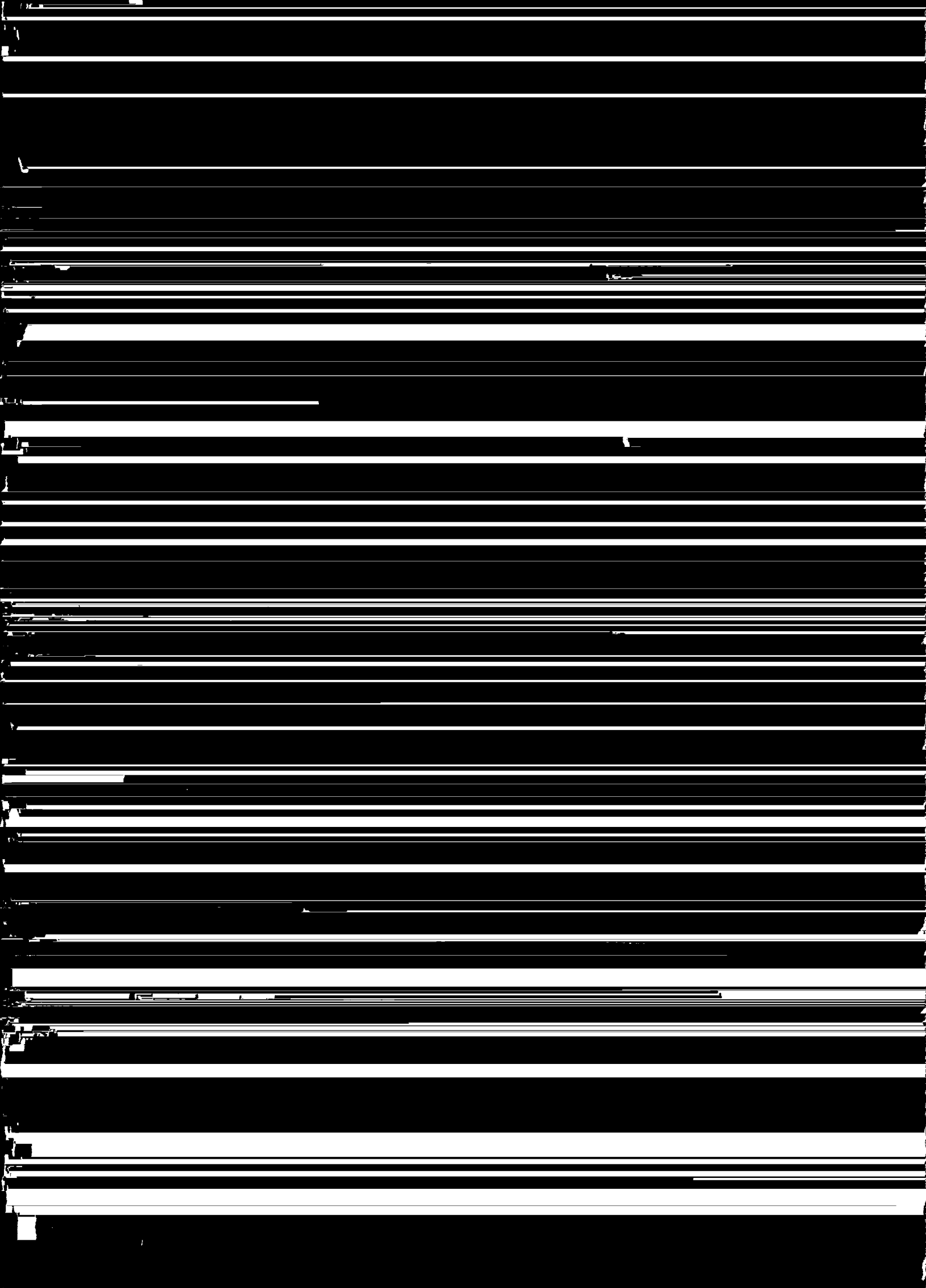
Instructions:

The following questions relate to your usual sleep habits during the past month *only*. Your answers should indicate the most accurate reply for the *majority* of days and nights in the past month. Please answer all questions.

1. During the past month, when have you usually gone to bed at night?

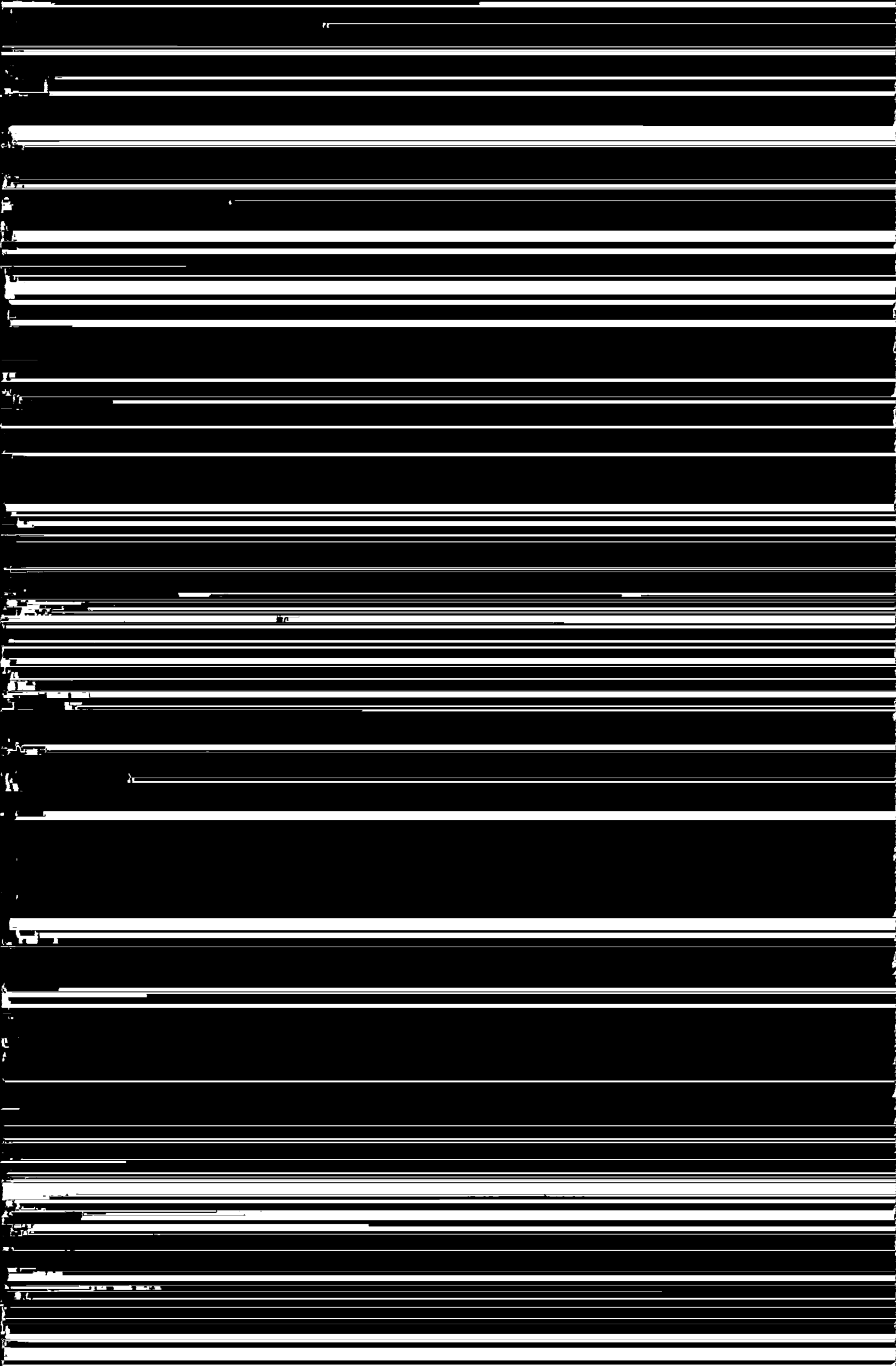
(j) Other reason(s), please describe _____

How often during the past month have you had trouble sleeping because of this?



Scoring Instructions for the Pittsburgh Sleep Quality Index

The Pittsburgh Sleep Quality Index (PSQI) consists of 19 self-rated questions and 5 questions rated by the



Component 4: Habitual sleep efficiency

(1) Write the number of hours slept (question # 4) here:

Number of hours spent in bed: _____

Component 7: Daytime dysfunction

(1) Examine question # 8, and assign scores as follows:

<u>Response</u>	<u>Score</u>
Never	0
Once or twice	1
Once or twice each week	2
Three or more times each week	3

Question # 8 score: _____

(2) Examine question # 9, and assign scores as follows:

<u>Response</u>	<u>Score</u>
Somewhat of a problem	2
A very big problem	3