

PRELIMINARY STUDY OF THE TEST-RETEST RELIABILITY AND CONCURRENT VALIDITIES OF THE PITTSBURGH INSOMNIA RATING SCALE (PIRS)

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Introduction: The PIRS is a 65-item scale designed to rate the severity of insomnia in clinical trials. Subjects rate items asking about subjective distress (Part 1 - 46 items), subjective sleep parameters (Part 2 - 10 items), and quality-of-life (Part 3 - 9 items) in the past week. The global score sums the items, each scaled 0-3. This preliminary study evaluated PIRS test-retest reliability and its correlations with the Pittsburgh Sleep Quality Index (PSQI) (1) and the Spielman Insomnia Symptom Questionnaire (SISQ) (2).

Methods: Adults with a primary diagnosis of an insomnia, depression, anxiety, or sleep apnea were eligible to participate. Subjects completed the PIRS, PSQI, and SISQ at baseline. Some completed a retest PIRS that was mailed to them. Missing data on the PIRS and the SISQ did not exceed 10% of items; average item values were imputed to missing items. PSQI scores were obtained using standard procedures (1). Pearson product-moment correlations were obtained between the two time points for the global PIRS score, as well as sub-part scores. Correlations were also obtained between baseline global scores of the three questionnaires. Statistical testing of correlations utilized t-tests (3).

Results: To date, 20 subjects (5 males, 15 females) have provided baseline data. The mean age was 43 (S.D. = 14). There was no missing baseline data for the PIRS or SISQ, but 4 subjects had missing data that prevented calculating a baseline PSQI score. Sixteen subjects provided retest completions, 13 within a 2-week period and with sufficient data. Nineteen subjects had a primary diagnosis of Primary Insomnia (18 Psychophysiologic Insomnia and 1 Idiopathic Insomnia), and 1 with sleep apnea. The global test-retest correlation ($r = 0.90$) is shown in Figure 1. Correlations within the baseline PIRS and between the test and retest PIRS completions are given in Table 1. The PIRS:PSQI, PIRS:SISQ, and SISQ:PSQI correlations were $r = 0.73$ ($t = 4.00$, $df = 14$, $p = 0.0013$), $r = 0.71$ ($t = 4.27$, $df = 18$, $p = 0.00045$), and $r = 0.56$ ($t = 2.52$, $df = 14$, $p = 0.024$), respectively.

Conclusions: This preliminary psychometric study of the PIRS indicated that the PIRS has good test-retest reliability as a measure of insomnia severity in the past week. It does not have ceiling or floor effects for measuring insomnia severity. Lower, but significant between-subscale correlations suggest separate dimensions of insomnia are rated. It appears to have good concurrent validity with the PSQI and the SISQ. Further evaluation of the PIRS concurrent (i.e. between questionnaires) and discriminant (i.e. between clinical group) validities is needed. The PIRS may serve as a convenient, multidimensional global severity metric for insomnia symptoms in the past week.

References:

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- (2) Spielman AJ, Saskin P, Thorpy MJ. Treatment of chronic insomnia by restriction of time in bed. *Sleep* 1987;10:45-56.
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Figure 1

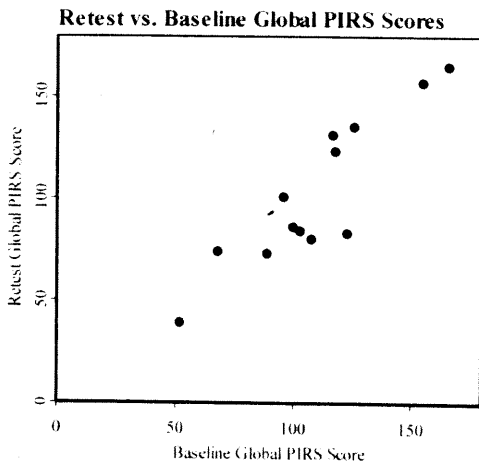


Table 1

		BASELINE			
		Total	Part 1	Part 2	Part 3
BASELINE	Total	1.00			
	Part 1	0.98 [‡]	1.00		
	Part 2	0.72 [‡]	0.60 [†]	1.00	
	Part 3	0.60 [†]	0.50 [*]	0.45 [*]	1.00
RETEST	Total	0.90 [‡]	0.86 [‡]	0.70 [†]	0.65 [*]
	Part 1	0.90 [‡]	0.89 [‡]	0.60 [*]	0.57 [*]
	Part 2	0.56 [*]	0.41	0.89 [‡]	0.53 [*]
	Part 3	0.71 [†]	0.64 [*]	0.53 [*]	0.84 [‡]

‡ p < 0.001 †p < 0.01 * p < 0.05