



Sleep length misperception and its association to subjective sleep quality and objective sleep duration in a large sample of women

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Aim

The present analysis investigates the relation of sleep length misperception with subjective sleep quality, objective sleep length, self-reported anxiety and depression.

Background

Sleep misperception, i.e. the mismatch between subjective and objective sleep length, is a common phenomenon that has been mostly addressed in insomnia patients. The mechanisms behind sleep misperception are still poorly understood; psychological distress has been discussed as one major contributing factor. The present study tests the hypothesis that sleep quality and psychological background factors are associated with sleep misperception in a large random sample of women.

Methods

Sample

- 268 non-pregnant women with complete data (from a random sample of 400 women, oversampling of snorers)
- Age: mean = 49.7 years, SD = 11.2, min = 22, max = 73

Procedure

- One night of ambulant polysomnography recording & questionnaires

Measures

- Subjective and objective total sleep time (TST)
- Sleep length misperception: Objective total sleep time (PSG) – subjective sleep length
- Subjective sleep quality (assessed on a visual analogue scale with a single item question (“How did you sleep?”))
- Self-reported sleep problems (yes/no)
- Self-reported depression and anxiety (HAD-scale)

Statistical analysis

- Multiple regression analyses (with and without adjusting for age, apnea-hypopnea-index, BMI) predicting sleep misperception; weighted for the oversampling of snorers

Results

- Average absolute misperception: 44 minutes (ranging between sleep length overestimation of 295 minutes and sleep length underestimation of 280 minutes)
- Curvilinear relationship between sleep misperception and subjective sleep quality (see Figure 1)
- Significant association of subjective sleep quality and total sleep time with sleep misperception (see Table 1)

Discussion

Sleep length misperception was on average 44 minutes. Over- and underestimation of sleep length were about equally frequent. Short sleepers tended to overestimate their sleep length, while long sleepers tended to underestimate their sleep length.

A curvilinear relation between subjective sleep quality for the respective night and sleep misperception was observed: Women reporting very bad sleep quality showed a strong underestimation of their actual sleep length.

Contrary to the expectation, self-reported habitual sleep problems, anxiety and depression were not significantly associated to sleep misperception.

Future analyses will address the relation between the sleep microstructure and sleep misperception.

Figure 1
Relation between sleep misperception and subjective sleep quality

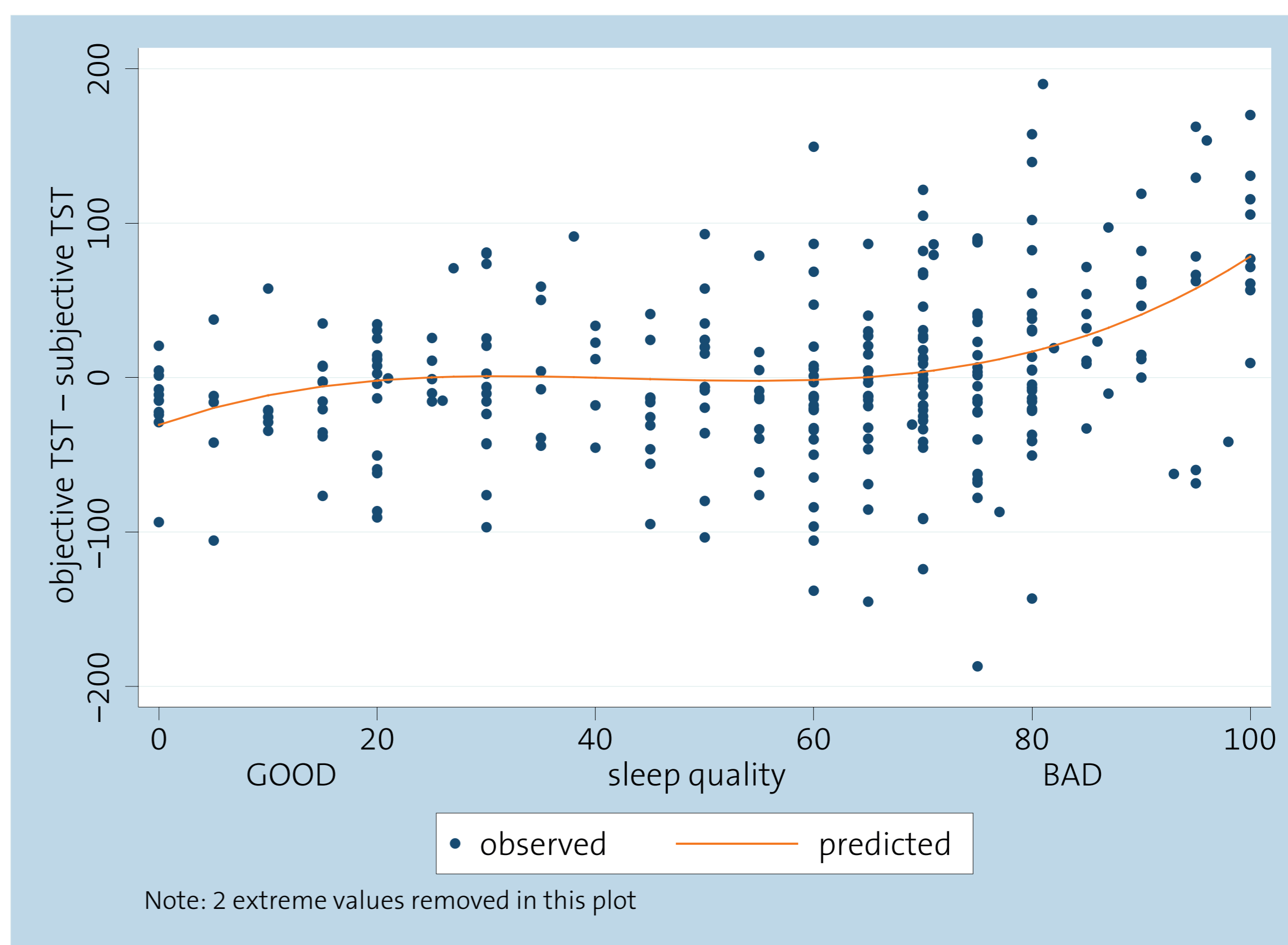


Table 1:
Prediction of sleep misperception (objective total sleep time - subjective total sleep time)

	Coefficient	SE	t	p	95% Conf. Interval	
					lower	upper
Sleep quality (linear)	2,453	1,121	2,19	0,030	0,246	4,660
Sleep quality (quadratic)	-0,056	0,027	-2,09	0,037	-0,109	-0,003
Sleep quality (cubic)	0,000	0,000	2,48	0,014	0,000	0,001
Sleep duration objective (min)	0,404	0,081	4,99	< 0,001	0,245	0,564
Sleep problem (yes/no)	6,142	9,204	0,67	0,505	-11,984	24,269
Depression score (HAD)	0,622	1,739	0,36	0,721	-2,804	4,047
Anxiety score (HAD)	0,235	1,637	0,14	0,886	-2,990	3,459
Age (years)	1,010	0,454	2,23	0,027	0,117	1,904
Apnea-Hypopnea Index	-0,346	0,469	-0,74	0,462	-1,270	0,578
BMI	-1,018	1,305	-0,78	0,436	-3,589	1,553
_cons	-228,306	58,785	-3,88	< 0,001	-344,081	-112,531