Reviewer’s report

Title: Measurement properties of the Minimal Insomnia Symptom Scale (MISS) in an elderly population in Sweden.

Version: 3 Date: 13 July 2010

Reviewer: Ståle Pallesen

Reviewer’s report:

The present study investigates the psychometric properties of the Minimal Insomnia Symptoms Scale (MISS) in an elderly sample.

Major Compulsory Revisions

The authors should be commended for trying to estimate the optimal cut-off score for the MISS by using a ROC-analysis. However, I question the criteria used for this procedure – which simply is the sum score of three other self-rated sleep questions. Normally the cut-off score for an instrument is calculated against a diagnosis which is set by an adequate diagnostic procedure. In this case however, the cut-off is made against a criterion which actually does not have higher diagnostic validity than the MISS itself. I find this problematic.

Again, the authors should distinguish between insomnia and sleep difficulties in general, and specify how these concepts are operationalized. It’s stated that “the criterion validity of the MISS was tested by creating a criterion variable to rate the daytime impairment listed in the ICSD-2 which served as a surrogate gold standard indicator of the incidence of insomnia”. This is very unclear – did this criterion comprise the three previously mentioned sleep items from the USI-25 or is it yet another criterion? How can responses to a sleep questionnaire be regarded as a gold standard? What do the authors mean by “incidence”? Normally, incidence denotes the percentage of new cases of a disease occurring in a defined time interval – but how do the authors use this concept? Much more information is needed in order to clarify these issues.

Minor Essential Revisions

To say that sleep difficulties have been found to increase with age and to be more common among women is not correct, although it is correct for insomnia. This should be specified, thus the authors should use the term “insomnia” instead of sleep difficulties.

There is not good evidence that insomnia or sleep disturbances in women generally are caused by fluctuation of sex hormones – so this should be deleted.

Concerning development of the MISS – what is meant by “was developed from a more sleep questionnaire?” (page 3). Something seems to be missing here.

All the psychometric details of MISS in other samples are irrelevant in the
introduction. It is enough to say that previous research has shown the MISS to have good psychometric properties.

The authors emphasize several places in the introduction the need for short screening instruments. Mentioning this once should suffice.

The comment about the PSQI on page 8 seems out of place as the PSQI was not used in the current study.

I agree with the authors that it’s a problem that the MISS do not contain any item pertaining to the daytime impairment associated with insomnia. All diagnostic systems list daytime impairment as one of the criteria for insomnia. Although using a short scale has many advantages it is a problem that the authors construct and use a scale which do not include a central aspect (daytime impairment) of the concept they aim at measuring (insomnia). In this respect the scale seems to have a low content validity. Thus, the authors should definitely consider including a fourth item to the scale covering daytime impairment.

Discretionary Revisions:

When it comes to the implications of insomnia the authors should also mention sick leave and disability pension – hence focus on the point that insomnia has serious economical implications as well.

In terms of other screening instruments it should be noted that most are considerably shorter than the PSQI, such as the ISI, the Athens Insomnia Scale and the Bergen Insomnia Scale – hence there are already shorter alternatives than the PSQI. Besides the PSQI is not a screening instrument specifically for insomnia, but pertains to sleep problems in general.

In terms of analyses the authors should consider subjecting the data to a SEM-analysis in order to investigate the one-factor structure they are implying for the MISS. Also, the issue of structural invariance across age-groups and gender could be of interest investigating by such statistical procedures.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.