

# Validity of Two Retrospective Questionnaire Versions of the Consensus Sleep Diary: The Whole Week (SASS) and Split Week (SASS-Y) Self-Assessment of Sleep Surveys

Jessica R. Dietch, PhD;<sup>1</sup> Kevin Sethi, PhD;<sup>2</sup> Danica C. Slavish, PhD<sup>1</sup> & Daniel J. Taylor, PhD<sup>3</sup>

1. University of North Texas, Denton, TX

2. South Texas Veterans Health Care System, San Antonio, TX

3. University of Arizona, Tucson, AZ

## BACKGROUND

- Prospective, daily sleep diaries are the gold standard for assessing subjective sleep but are not always feasible.
- Existing questionnaires do not yield the sleep parameters produced by sleep diaries/objective measures.<sup>1</sup>
- Literature comparing the validity of sleep questionnaires to existing sleep diaries is limited.<sup>1</sup>
- Existing questionnaires typically fail to separate weekday and weekend sleep, despite known discrepancies in sleep between these schedules.<sup>1,2</sup>
- The current study sought to develop and validate a brief retrospective self-report questionnaire that addresses these limitations and provides an accurate measure of subjective sleep parameters.

## PARTICIPANTS

- $N = 131$  college students
- $M$  age = 19.4 ( $SD = 1.7$ ); 73% female; 50% non-Hispanic White / 21% Black / 4% Asian / 25% Biracial/Other/Not Reported

## METHOD

**Procedure:** Participants completed sleep diaries<sup>3</sup> for 7 days, then completed either the Whole Week (SASS;  $n = 71$ ) or Split Week (SASS-Y;  $n = 60$ ) Self-Assessment of Sleep Survey

### Measures:

- Consensus Sleep Diary:<sup>3</sup> Prospective sleep diary that produces parameters including time in bed (TIB), sleep onset latency (SOL), wake after sleep onset (WASO), number of awakenings (NWAK), terminal wakefulness (TWAK), total sleep time (TST), sleep efficiency (SE) and sleep quality (QUAL).
- SASS and SASS-Y: Questionnaire versions of the Consensus Sleep Diary;<sup>3</sup> produces same sleep parameters as sleep diary.
- Pittsburgh Sleep Quality Index:<sup>4</sup> Commonly used retrospective questionnaire of several sleep quality dimensions; produces SOL, TST, SE, QUAL.

**Analyses:** Correlations, mean differences, Bland-Altman plots, and limits of agreement.

Both the SASS and SASS-Y are acceptable substitutes when prospective sleep diaries are infeasible

Scan QR code for the full paper and references



<https://doi.org/10.1016/j.sleep.2019.05.015>

Measuring weekday and weekend sleep separately may offer benefits over whole week measures

## RESULTS

### Mean Differences & Correlations:

- No sig. mean differences between SASS and sleep diaries. SASS and sleep diaries were sig. correlated on all sleep parameters ( $r = .24$  to  $.84$ )
- SASS-Y and sleep diaries had sig. mean differences on TST, but not other parameters. SASS-Y correlated with diary on all parameters ( $r = .51$  to  $.85$ ).
- PSQI and sleep diaries had sig. mean differences on TST, SE, and QUAL, but not SOL. PSQI and sleep diaries were sig. correlated for SOL, TST, and QUAL ( $r = .67$  to  $.75$ ), but not SE ( $r = .13$ ).

### Bland-Altman Plots & Limits of Agreement:

- SASS-Y displayed slightly less bias than SASS for estimating TWAK, SOL, SE, and QUAL, whereas SASS displayed less bias than SASS-Y for estimating WASO and TST.
- SASS-Y demonstrated the best precision across all sleep parameters (narrowest limits of agreement)

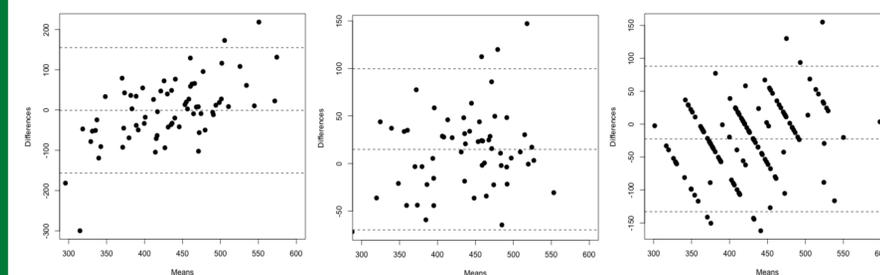


Figure 1. Bland Altman plots for total sleep time; SASS to sleep diary (left), SASS-Y to sleep diary (middle), PSQI to sleep diary (right)

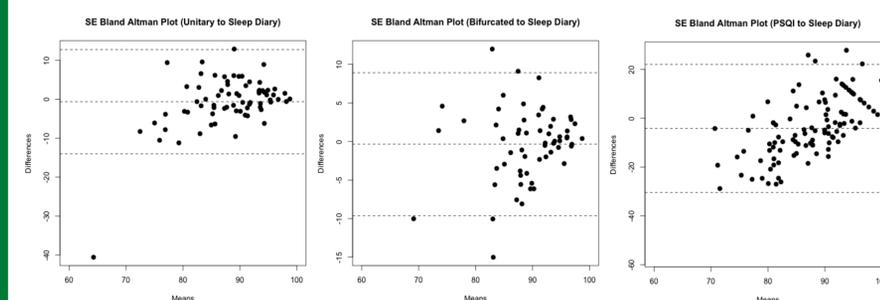


Figure 2. Bland Altman plots for sleep efficiency; SASS to sleep diary (left), SASS-Y to sleep diary (middle), PSQI to sleep diary (right)

## CONCLUSIONS

- SASS & SASS-Y offer clear benefit above existing retrospective questionnaires of sleep.
- Researchers and clinicians must balance validity and reliability with ease of administration and consider the specific needs of the population of interest when choosing a retrospective questionnaire over other measures.

Contact: [J.Dietch@gmail.com](mailto:J.Dietch@gmail.com)

## References

1. Lauderdale DS. Survey Questions About Sleep Duration: Does Asking Separately About Weekdays and Weekends Matter? *Behavioral Sleep Medicine*. 2014;12:158-68.
2. Hasler BP, Dahl RE, Holm SM, Jakubcak JL, Ryan ND, Silk JS, et al. Weekend-weekday advances in sleep timing are associated with altered reward-related brain function in healthy adolescents. *Biological Psychology*. 2012;91:334-41.
3. Carney CE, Buysse DJ, Ancoli-Israel S, Edinger JD, Krystal AD, Lichstein KL, et al. The consensus sleep diary: standardizing prospective sleep self-monitoring. *Sleep*. 2012;35:287-302.
4. Buysse DJ, Reynolds CF, III, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Res*. 1989;28:193-213.