P1-8: Assessing and Reporting Inter-Method Agreement

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Abstract:

**Introduction:** There are multiple statistical approaches for assessing inter-method agreement. Kappa coefficients are commonly used to assess agreement in assigning codes or ratings and Pearson’s Product Moment correlation (PPM) to measure quantities, like duration and frequencies. Additionally, the Bland-Altman method is used to assess bias between measures. The purpose of this study is to demonstrate the use of Cohen’s Kappa, PPM, and the Bland-Altman method to evaluate agreement between two methods for assessing nocturnal sleep—standard polysomnography and wrist actigraphy. The research question is: Under what circumstances should one use Cohen’s Kappa, PPM, and the Bland-Altman method for assessing inter-method agreement?

**Method(s):** Cohen’s Kappa, PPM, and Bland-Altman method will be used to calculate inter-method agreement for scoring sleep and wakefulness and for measuring sleep duration in 20 paired observations. The mean Kappa coefficient, as well as the confidence interval around the estimate of Kappa, the percentage of observations with Kappa > 0.70, PPM, and Bland-Altman method will be presented.

**Results:** Analyses will be completed in December 2009.

**Discussion & Conclusions:** The statistics used to report inter-method agreement begins with determining the unit of analysis. Cohen’s Kappa coefficients are used to assess epochs with categorical data and should include the mean Kappa (with confidence intervals) and percent of observations of Kappa > 0.70. For continuous variables measured at an individual unit of analysis, such as duration, the Bland-Altman method provides additional information about systematic error beyond the PPM. Thus, researchers should consider utilizing all three methods in reporting inter-method agreement.

**Abstract History:**
This abstract has not been presented or accepted for presentation in whole or in part at the SNRS or other scientific meeting.

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