

LETTERS TO THE EDITOR

Low repeatability of the Epworth Sleepiness Scale and the need to redefine the minimal clinically important difference

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Grewe et al¹ have raised questions about the commonly used Epworth Sleepiness Scale (ESS) in medicine. They report discrepancies of at least 2 points between sequential ESS scores that occurred in 63%, at least 3 points in 48%, at least 5 points in 20%, and at least 7 points in 8% of the total of 40 participants. Alcohol consumption and sleep medication intake were not significantly associated with differences between ESS scores. However, they do not report if ESS had any correlation with intake of food in same-day group of patients. There is evidence to indicate a role of carbohydrate intake on sleep indexes. Both high-carbohydrate and low-carbohydrate diets are associated with changes in sleep architecture.² Part of the explanation of the variance in ESS observed may also be related to the food intake and circadian rhythm in same-day group of patients. One drawback of test-retest reliability is effects of memory. The test and the retest do not occur under the exact same conditions. If people respond to questions a second time, they may remember the first time, interfering with the true measurement. This may be mitigated to some extent by testing at approximately the same time of day on the next day to negate any influence of circadian effect and food intake.

Even with this limitation, the study has to be taken seriously as many in sleep research are moving forward using patient-reported outcomes as a measure of the success of therapy in lieu of objective evidence. This fad of replacing the outcome success measurement with patient-reported outcome has significant limitations, as demonstrated in the study. It is time to accept that the reliability of the ESS is not adequate to provide the basis for clinical decisions or to assess treatment effects because baseline fluctuation of scores reaches or exceeds the MCID (minimal clinically important difference). It is important to define MDC (minimal detectable change), which is the minimal amount of measured change before we can eliminate the possibility that measurement error is solely responsible. If measured change exceeds the MDC value, we can conclude that at least a portion of the measured change was due to real improvement (or decline) in performance. This is different from the MCID. It is estimated that the minimum clinically

important improvement in the ESS lies between -2 and -3 .³ Taking this variance in ESS into consideration it is time to reconsider the MCID to be between -5 and -6 . It is time to re-evaluate using patient-reported outcome questionnaires as the primary effectiveness endpoint and use these as an additional measurement.

CITATION

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DISCLOSURE STATEMENT

The author reports no conflicts of interest.