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## Methodological issues on inter-rater reliability of the Swedish modified version of the Postural Assessment Scale for Stroke Patients (SwePASS)

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Dear editor,

We were interested to read the recent paper by Bergqvist GM and colleagues published in the Jul issue of 2019 *Top Stroke Rehabil.*<sup>1</sup> The aim of the authors was to determine the inter-rater reliability of the Swedish modified version of the Postural Assessment Scale for Stroke Patients (SwePASS) in the acute phase after stroke. Two physiotherapists evaluated 64 stroke patients 3 and 7 days after admission using SwePASS. Inter-rater reliability was determined using percentage-agreement and the rank-invariant method: relative position, relative concentration, and relative rank variance.<sup>1</sup> Based on their results, the agreement between the reader's was  $\geq 75\%$  in the assessments using the SwePASS. For 9 of the 12 items, the percentage agreement was  $>80\%$ . For 8 of the 12 items, there was a statistically significant change in position, revealed in relative position values between 0.08 and 0.15. Also, three items had statistically significant positive relative concentration values between  $-0.11$  and  $0.10$  and except for a statistically significant negligible relative variance value of 0.01 for the items 1 and 8, there was no relative variance.<sup>1</sup>

We would like to explain some methodological issues about this study. First of all, it is important to know that the concept and definition of reliability (precision, repeatability, and reproducibility) should be correctly considered in reliability researches. How to calculate the reliability depends on the type of variable that is either quantitative or qualitative. Intra Class Correlation Coefficient (ICCC) and Bland Altman Plot are among well-known methods to determine the reliability when we are facing a quantitative variable; otherwise, weighted kappa should be applied.<sup>2-6</sup>

They concluded that the SwePASS shows an acceptable inter-rater reliability, albeit with potential for improvement. Also, the reliability can be improved by a consensus how to interpret the scale between the raters prior to implementation in the clinic. Their conclusion should be supported by the above-mentioned methodological issues. Otherwise, misleading message cannot be avoided.

In this letter, we briefly mentioned methodological and statistical approaches to assess reliability. Any conclusion on reliability should be supported by the above-mentioned issues<sup>2-6</sup>

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