

TABLE 1 Linear regression analysis with variable A as the dependent variable

Model		Coefficients			t	Sig.
		Unstandardised		Standardised		
		B	SE	β		
1	(Constant)	0.568	0.342		1.663	0.098
	Variable B	-1.039	0.063	-0.763	-16.606	0.000

Estimated MID for A= -1.5. Sig.: significance.

TABLE 2 Linear regression analysis with variable B as the dependent variable

Model		Coefficients			t	Sig.
		Unstandardised		Standardised		
		B	SE	β		
1	(Constant)	1.758	0.220		8.005	0.000
	Variable A	-0.560	0.034	-0.763	-16.606	0.000

Estimated MID for A= -0.5. Sig.: significance.

Statement of Interest: Statements of interest for both authors can be found at www.erj.ersjournals.com/site/misc/statements.xhtml

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From the authors:

J.W. Dodd and P. Jones argue that anchor-based approaches may lead to unreliable estimates of the minimal important difference (MID) because of measurement error. Using simulated data, they show that MID estimates may vary considerably even if there is a strong correlation between the anchor measures and the outcome of interest (6-min walk distance in our study). Thereby, they illustrate the properties of the correlation coefficient, which does not change if one swaps the x and y variable, and of the fitting line, which changes depending on whether x predicts y or y predicts x .

We agree that anchor-based approaches have their limitations and, therefore, used several anchors in our analyses, as well as

distribution-based approaches. We are, however, not entirely clear as to how J.W. Dodd and P. Jones define measurement error and what they mean by direct methods. We believe that they refer to a question of validity of the anchor rather than measurement error. In statistics, measurement error refers to a single variable whose measurement is prone to some random variability (random error) and perhaps some systematic error. A correlation coefficient, instead, represents a measure for how closely a variable such as an anchor relates to the outcome of interest. Both measurement error and validity of the anchor influence MID estimates. Measurement error can be taken into consideration in the analyses and usually biases estimates towards an underestimation. If we assume, for example, an intraclass correlation coefficient of 0.95 for repeated measurements of the total score of the St George's Respiratory Questionnaire, as reported previously [1], the MID adjusted for the small measurement error (for example using the "eivreg" command of STATA) would be 25.4, instead of the 24.6 as reported in our paper [2]. If the intraclass correlation coefficient was only 0.8, the MID estimate would be 29.3, indicating that an unadjusted MID estimate indeed represents an underestimation of the MID if the anchor is not measured with high reliability.

Options are limited if the anchor is not a valid measure for the outcome of interest. Some authors have proposed correlations coefficients of ≥ 0.3 to be sufficient to derive MID estimates [3], but we believe that such a cut-off is too lenient. In our analysis, the strong correlation between the anchor and the outcome of interest of ≥ 0.5 , as well as the use of multiple anchors, increases our confidence in the reported estimate. In addition, as explained previously, the measurement error of the anchor can be taken into consideration if the intraclass correlation coefficient for measuring the anchor is < 0.9 in order to avoid underestimation of the MID. We believe that these two approaches, used in our analysis, protect against unreliable MID estimates.

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