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Background

Results of meta-analyses in standardized mean units, commonly used when different outcome measures are found in the primary studies, are difficult to interpret in terms of clinical practice.

Objective

To report meta-analyses in terms of minimal important difference (MID) units to better convey the clinical implications to health practitioners, and to interpret their findings also in terms of clinical relevant difference instead of statistical significance difference only.

Methods

We re-analyzed the data of a Cochrane review focusing on multidisciplinary biopsychosocial rehabilitation (MBR), one of the most used treatment for low back pain. The outcome of interest was pain. We first searched for all pain instruments having an anchor based MID according to Johnston 2010. Imputation of MID was adopted for instruments without an established MID. We considered MBR versus usual care for chronic low back pain in short, medium and long terms. We expressed the results in MID units, which can be interpreted as Johnston 2010: if the overall effect size is greater than 1 many patients will gain clinically important benefits from treatment, if it lies between 0.5 and 1.0 an appreciable number of patients will benefit, and if it falls below 0.5 MID units only a little number of patients will achieve important benefits.

Results

When compared to usual care, in short and medium term follow-up, MBR improves back pain in an appreciable number of patients as the MID is lower than but close to 1 (Figure 1a and b). In longer times, the MID approaches 0 (Figure 1c), meaning that MBR has little or no effect for the majority of patients, this despite a statistically significant difference. There are few plausible explanations: effects decrease in magnitude over time or true efficacy is more limited and early findings are biased or spurious eventually.

Limits

When interpreting meta-analyses in MID units it is important to consider that the real MID is subjective.

Conclusions

Meta-analyses expressed in MID units offer better insights about the clinical relevance of MBR. Multidisciplinary Biopsychosocial Rehabilitation, despite a statistically significant advantage at all follow-up times, has only a clinically modest effect. This results may modify the actual recommendations on the use of MBR for back pain, especially in the long term.

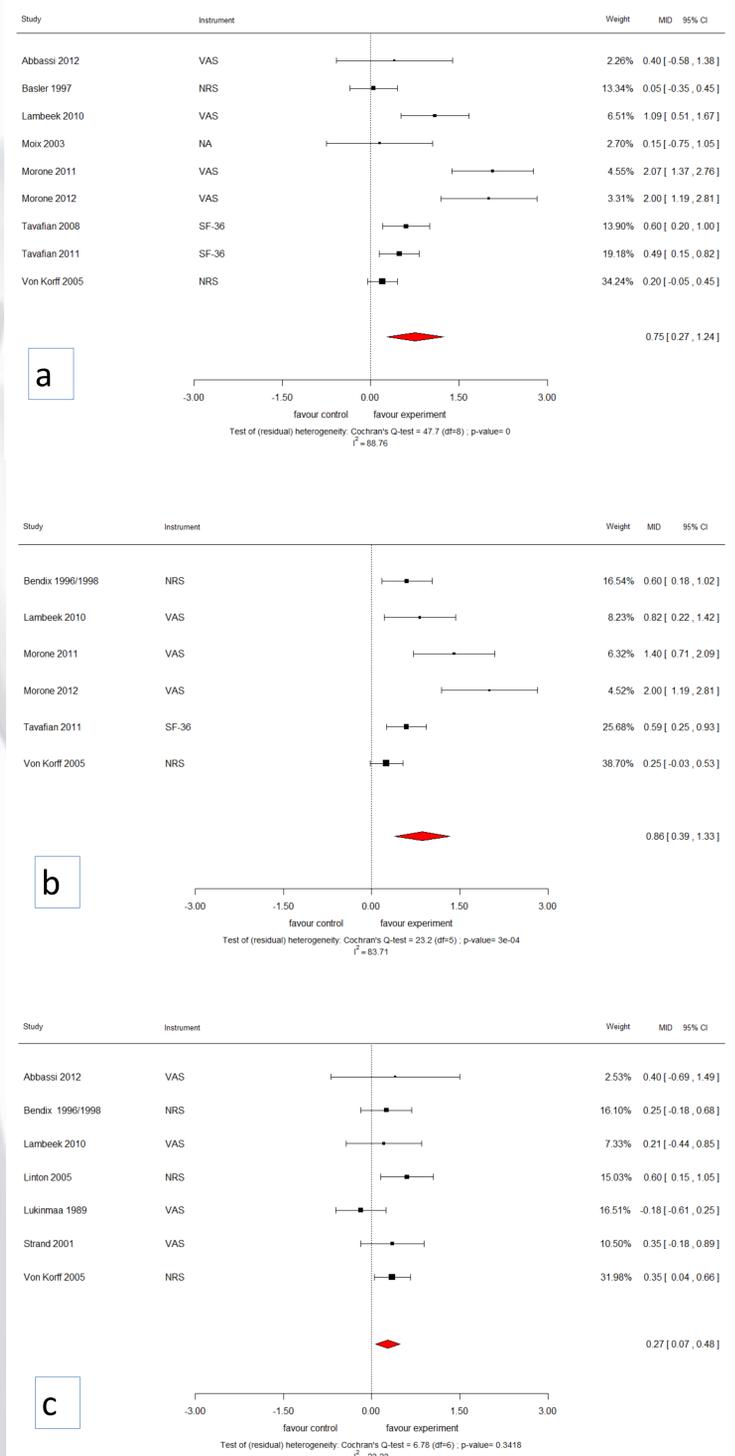


Figure 1. Meta-analysis of MID units for “Multidisciplinary biopsychosocial rehabilitation versus usual care for back pain in short (a), medium (b) and long terms (c)”.

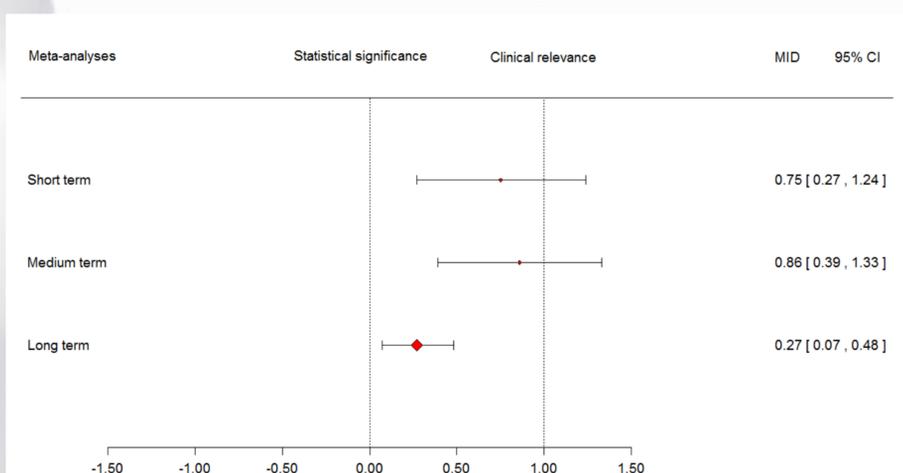


Figure 2. Clinical interpretation of the meta-analyses in MID units.

References

- Johnston et al. Improving the interpretation of quality of life evidence in meta-analyses: the application of minimal important difference units. Health and quality of life outcomes 2010
- Gianola et al. Completeness of Outcomes Description Reported in Low Back Pain Rehabilitation Interventions: A Survey of 185 Randomized Trials. Physiotherapy Canada 2016