

E. Wang^{1,2}, I.B. Rodrigues^{3,4}, L.C. Li^{1,2}

1. Department of Physical Therapy, University of British Columbia, Vancouver, BC, Canada; 2. Arthritis Research Canada, Vancouver, BC, Canada; 3. GERAS Centre for Aging Research, Hamilton Health Sciences, Hamilton, ON, Canada; 4. Knowledge Translation Li Ka Shing Knowledge Institute, St. Michael's Hospital, ON, Canada

Background

- Self-management programs are recognized as an essential component of successful management of chronic musculoskeletal (MSK) conditions.
- Typical programs apply a standardized approach with little customization. Tailored self-management interventions apply a range of strategies to account for patient needs, preferences, and values.

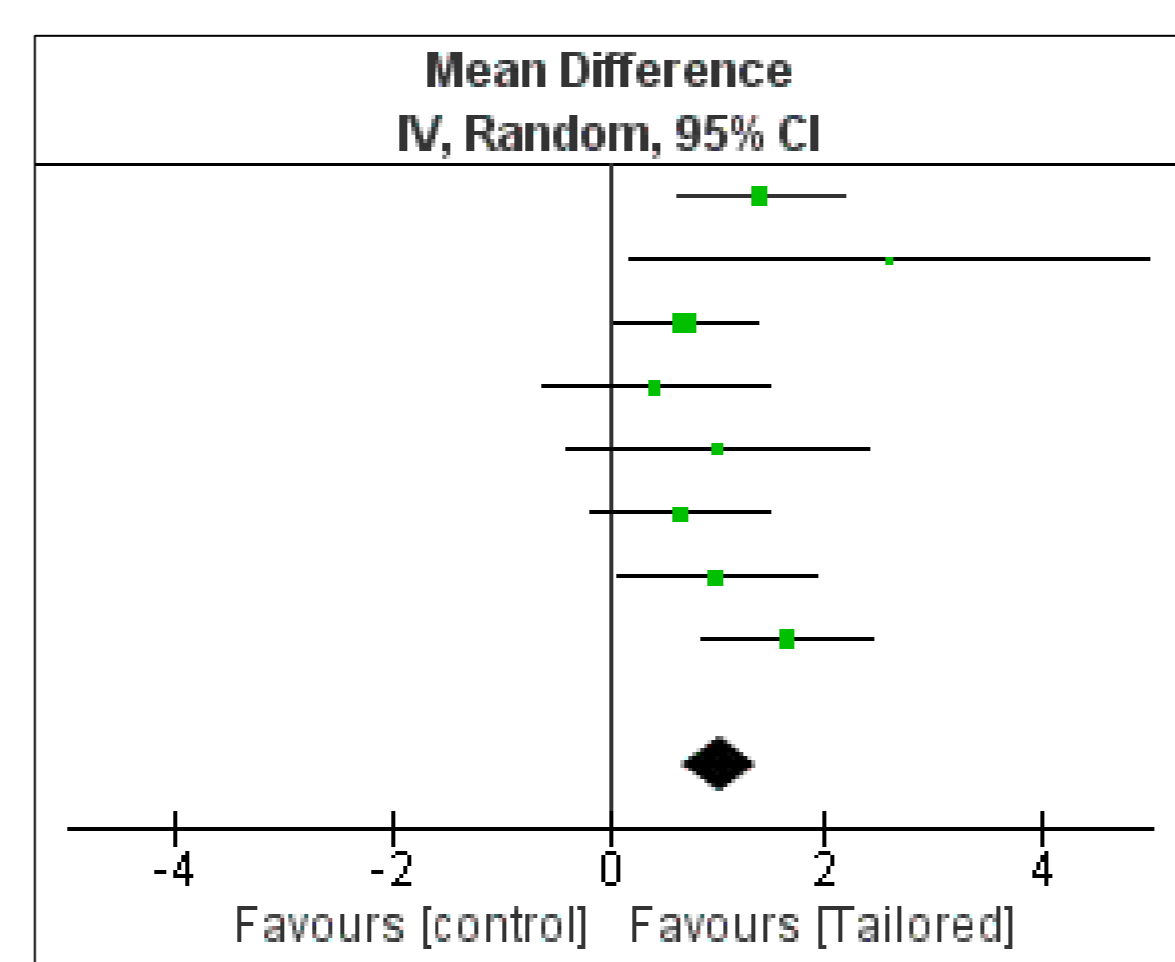
Methods

We searched 5 databases (MEDLINE, EMBASE, CINAHL, PsycINFO, CENTRAL) and grey literature. Two reviewers independently screened titles/abstracts and reviewed full articles.

Eligibility – Studies published in English that included:

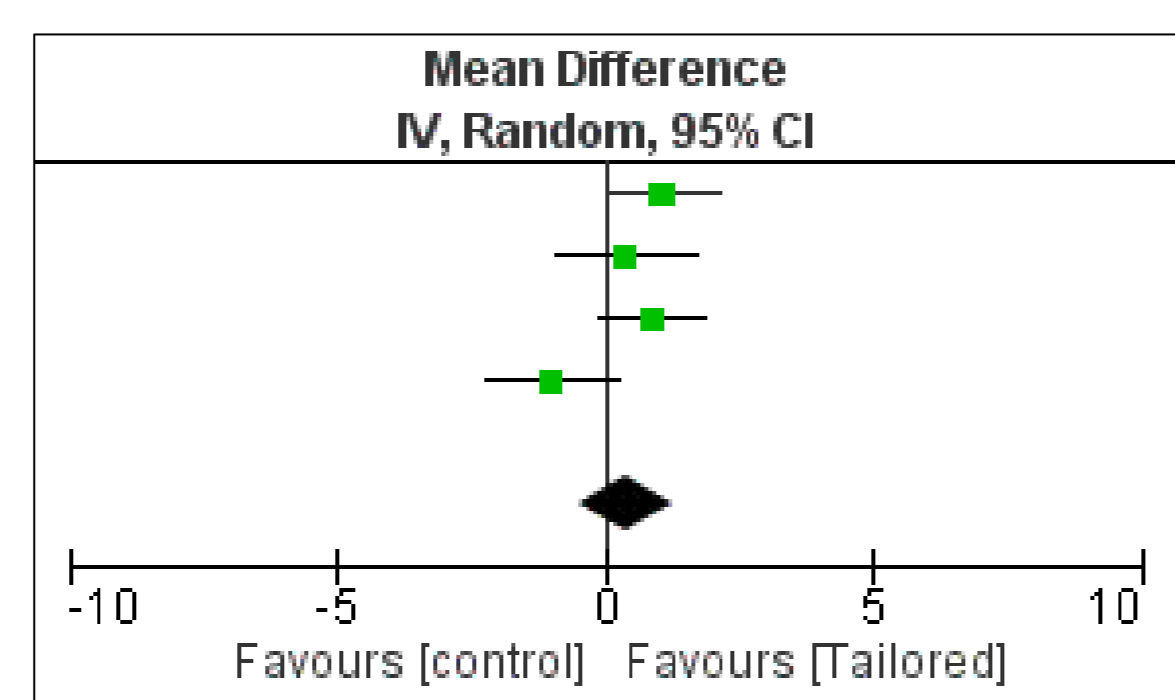
- 1) Participants with a chronic MSK condition (ICD-10)
- 2) Individually prescribed components based on subjective and objective assessments¹
- 3) A usual care or non-tailored control group

Analysis – We conducted meta-analyses for the outcomes of pain, physical function and quality of life. Methodological quality was evaluated using the Cochrane RoB tool and the certainty of evidence was described using GRADE. We conducted a sensitivity analysis including studies deemed “low” risk of bias.



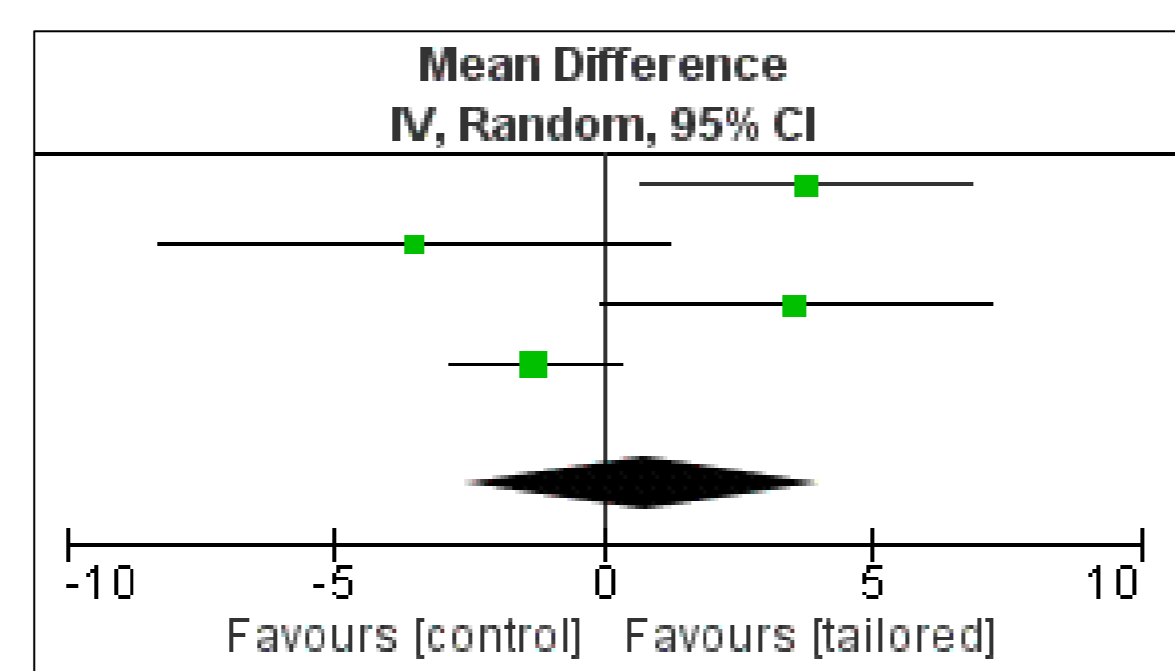
↓ Pain: VAS/NRS

- MD= 1.03 units (0-10 scale) [95% CI: (0.69, 1.37)]
- 884 participants, 8 RCTs
- Moderate certainty evidence
- *MCID*= 1.7 units²



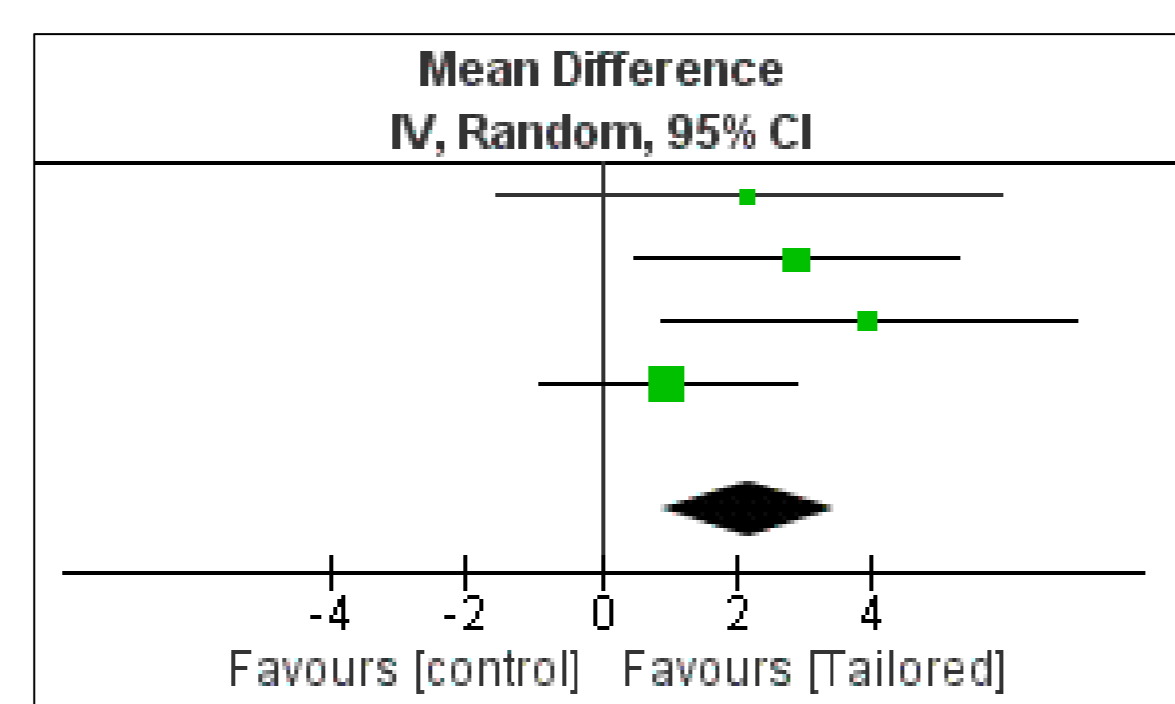
↓ Pain: WOMAC subscale

- MD= 0.39 units (0-20 scale) [95% CI: (-0.50, 1.29)]
- 657 participants, 4 RCTs
- Very low certainty evidence



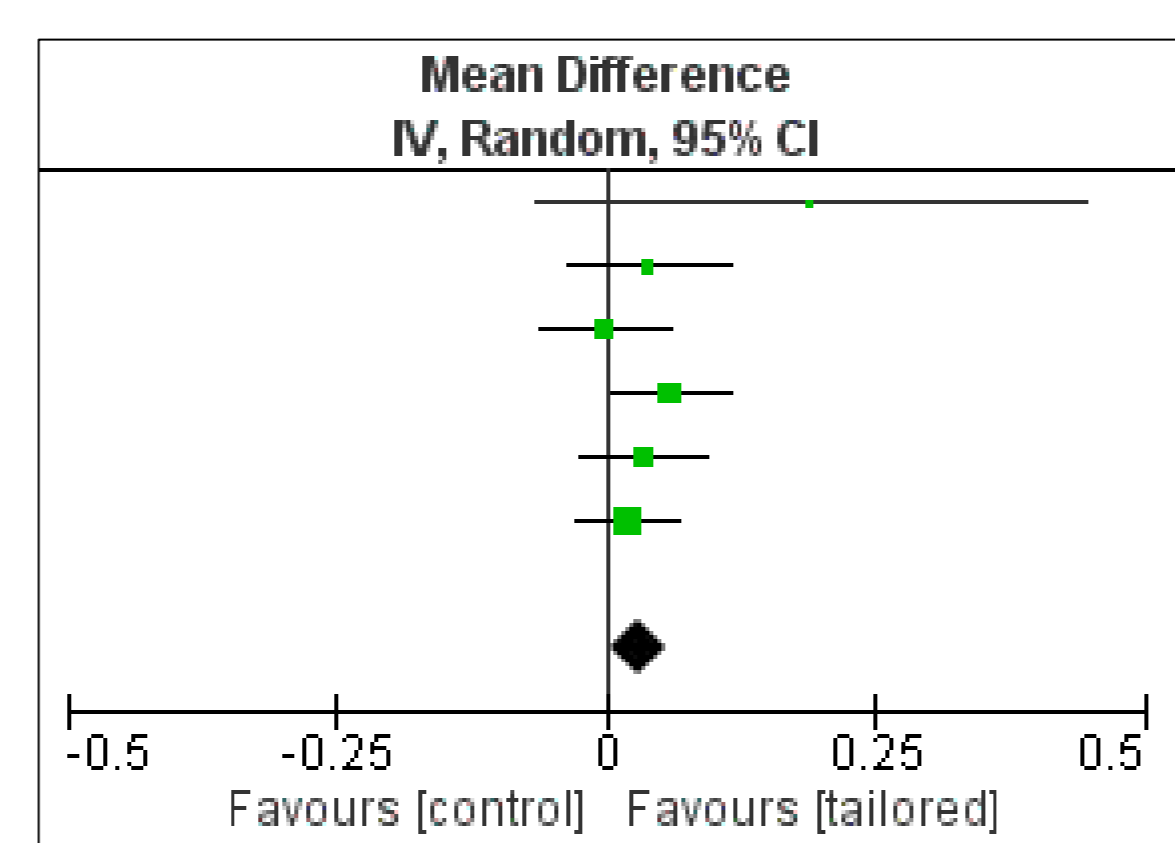
↑ Physical Function: WOMAC subscale

- MD= 0.75 (0-68 scale) [95% CI (-2.55, 4.05)]
- 657 participants, 4 RCTs
- Very low certainty evidence



↑ Physical Function: SF-12&36 PCS

- MD= 2.2 units (0-50 scale) [95% CI: (0.89, 3.50)]
- 935 participants, 4 RCTs
- High certainty evidence
- *MCID*= 2.5-5.0 units³



↑ Quality of Life: Pooled AqoL, EuroQoL 5D-5L&3L index values

- MD= 0.03 units (0-1 scale) [95% CI: (0.01, 0.06)]
- 989 participants, 6 RCTs
- Low certainty evidence
- *MCID*= 0.18 units⁴

Purpose

This systematic review and meta-analysis aimed to evaluate the effectiveness of tailored self-management interventions on pain, physical function and quality of life.

Findings

Our search yielded 1558 articles; of those, 35 articles described 20 unique interventions.

- 2269 participants, 27-65 years, were included in the meta-analyses.
- 55.0%-85.7% of participants were female, 45.9%-96.7% White, 5.9%-59.4% attended university and 11.9%-71.1% were employed (full or part-time).
- 16 interventions were designed for participants with arthritis, 4 for those with chronic pain conditions.
- 18 interventions were multicomponent and combined self-management education, exercise/physical activity, or cognitive/behavioral counselling.
- 19 interventions had an active therapy period of ≥ 6 weeks.
- 16 interventions were compared to usual care controls; 4 were compared to non-tailored controls.

All but one study was at high risk of bias for participant blinding (Performance bias). 5 studies had statistically significant differences between groups at baseline (Other bias). **[Figure 1]**. The sensitivity analysis did not reveal statistically significant differences.

Limitations

We might have missed eligible studies due to the criteria used to define tailored interventions. Nonetheless, we included synonyms such as “individualized” and “personalized” in the search strategy and supplemented with grey literature searching (i.e., Open Science Database, ProQuest Dissertations and Theses).

Conclusion

- Our analyses detected statistically significant differences in favour of tailored interventions for pain (NRS/VAS) and physical function (SF-12&36 PCS) in studies involving individuals with inflammatory arthritis and chronic pain conditions.
- Small differences were observed in pain and physical function as measured by WOMAC subscales.
- Pooled quality of life index values indicated a statistically significant improvement.
- *MCIDs* were unmet across outcomes, suggesting little clinical relevance for patients.
- More comprehensive reporting of tailored components and further investigation of tailoring strategies is required to improve health outcomes for individuals living with chronic MSK conditions.

PROSPERO
CRD42022297624

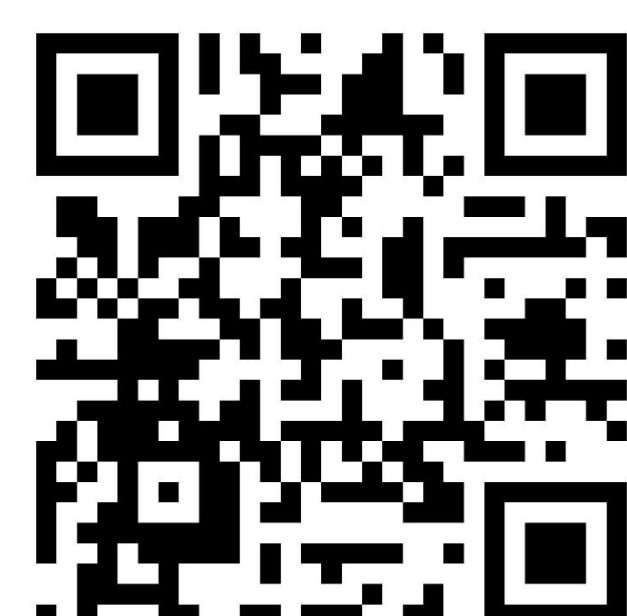
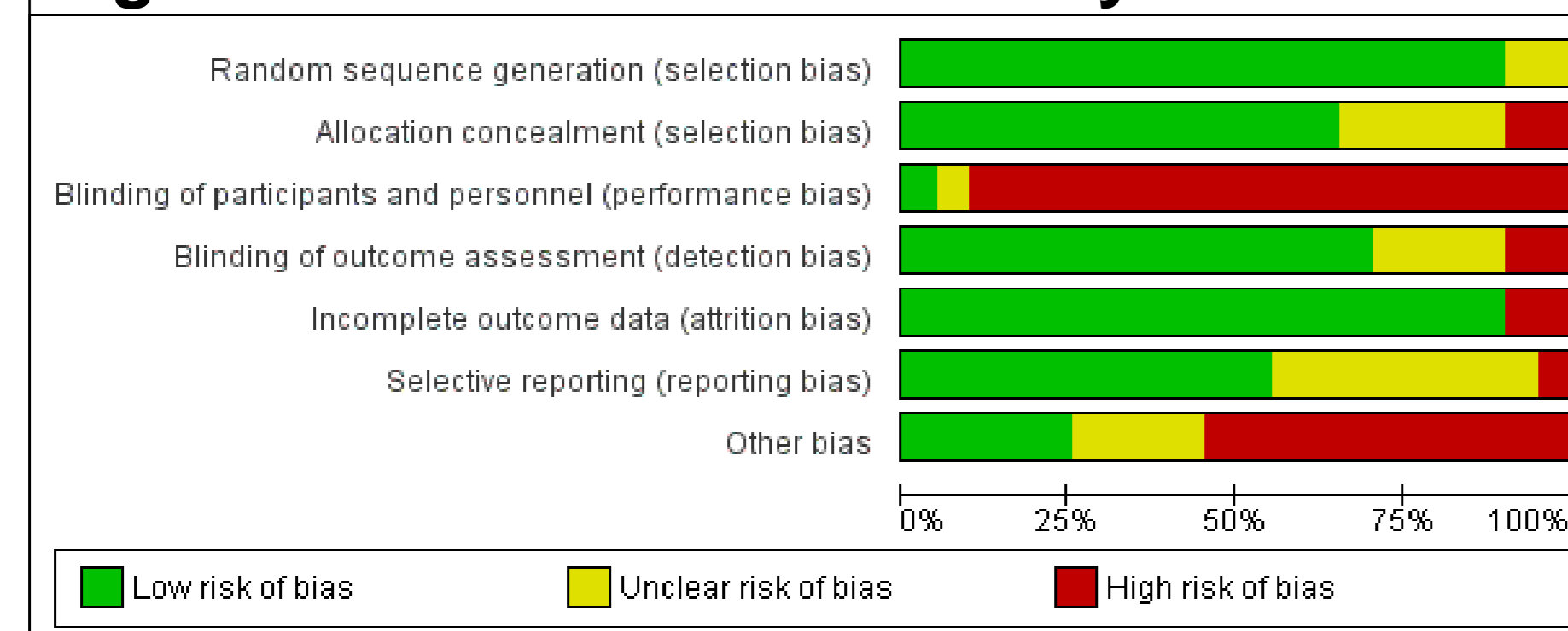


Figure 1. Risk of Bias Summary



References

1. Kreuter, M. W., & Skinner, C. S. (2000). Tailoring: what's in a name? Health Education Research, 15(1), 1–4. <https://doi.org/10.1093/HER/15.1.1>
2. Olsen, M. F., Bjerre, E., Hansen, M. D., Hilden, J., Landler, N. E., Tendal, B., & Hróbjartsson, A. (2017). Pain relief that matters to patients: systematic review of empirical studies assessing the minimum clinically important difference in acute pain. BMC medicine, 15(1), 35. <https://doi.org/10.1186/s12916-016-0775-3>
3. Kosinski, M., Zhao, S. Z., Dedhiya, S., Osterhaus, J. T., & Ware, J. E., Jr (2000). Determining minimally important changes in generic and disease-specific health-related quality of life questionnaires in clinical trials of rheumatoid arthritis. Arthritis and rheumatism, 43(7), 1478–1487. [https://doi.org/10.1002/1529-0131\(200007\)43:7<1478::AID-ANR10>3.0.CO;2-M](https://doi.org/10.1002/1529-0131(200007)43:7<1478::AID-ANR10>3.0.CO;2-M)
4. Coretti, S., Ruggeri, M., & McNamee, P. (2014). The minimum clinically important difference for EQ-5D index: a critical review. Expert review of pharmacoeconomics & outcomes research, 14(2), 221–233. <https://doi.org/10.1586/14737167.2014.894462>