

Factors Influencing the Uptake of Magnetic Resonance Imaging-guided High Intensity Focused Ultrasound (MR-HIFU) for Painful Bone Metastases in Europe: A Group Concept Mapping Study



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Background

The FURTHER-trial is a randomized controlled trial assessing the effectiveness of magnetic resonance imaging-guided high-intensity focused ultrasound (MR-HIFU) for pain palliation in patients with bone metastases.

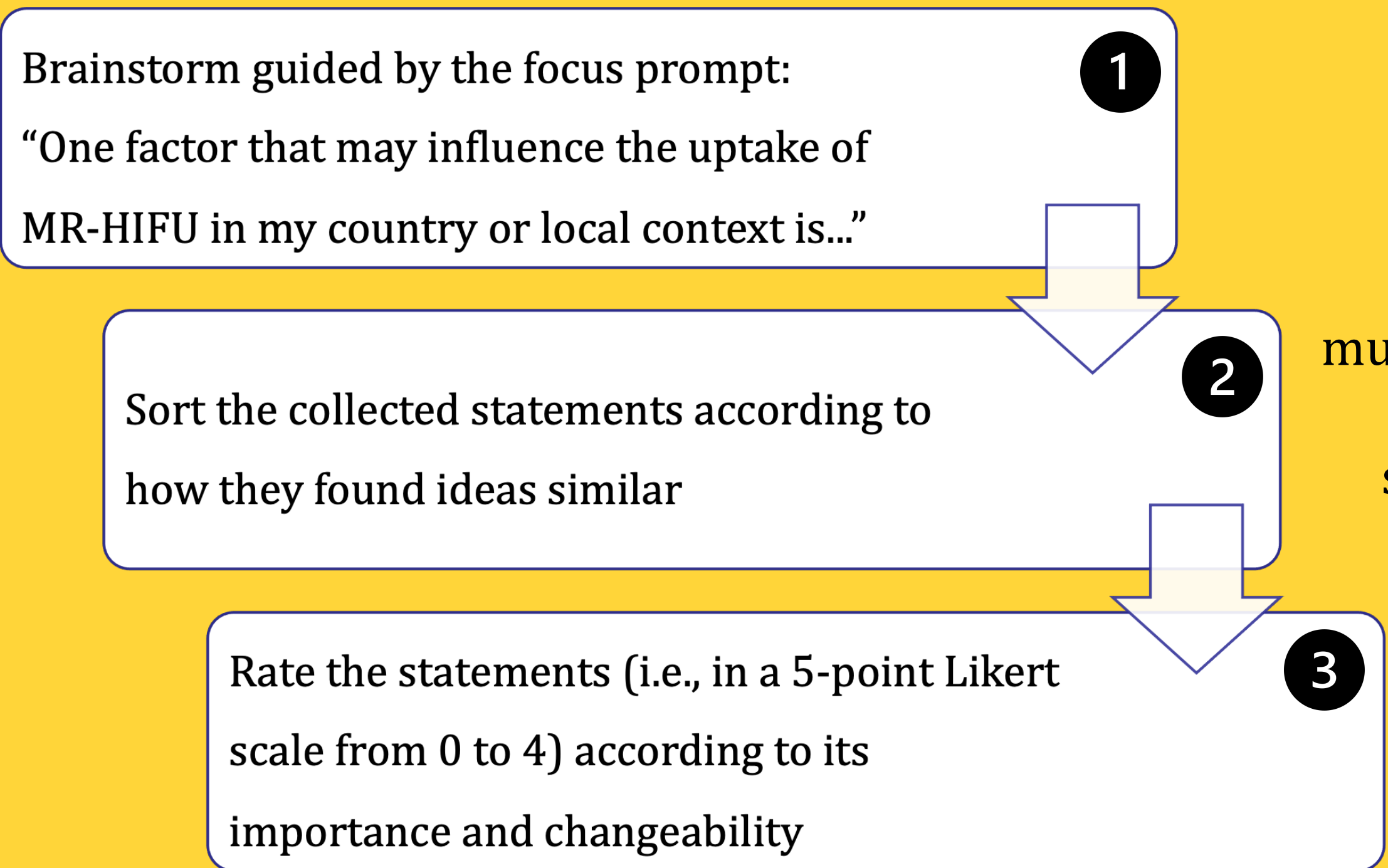
Although evidence from the FURTHER-trial will be paramount to the uptake of MR-HIFU, implementation of medical technologies is often influenced by multiple interacting factors related to the intervention and contextual factors.

To investigate the factors influencing the uptake of MR-HIFU, we conducted a Group Concept Mapping (GCM) Study alongside the FURTHER-trial in four European countries.

Methods

- Participants were selected through purposive and snowball sampling.
- Were invited: members of the FURTHER Consortium, representatives from the industry, medical societies, regulatory and HTA bodies, and patients.
- Data collection and analysis was conducted online using the platform from Group Wisdom™ (Concept System Inc, Version 2020). Participation was anonymous, online and assynchronous.

Participants had three tasks during the study:



Results

- From 79 invited participants, 45 contributed to the brainstorming (n=28) and/or the sorting and rating phase (n=33), resulting in an overall 56% participation rate.



- During the brainstorming task, 49 unique statements were collected, which were then sorted and rated by participants.

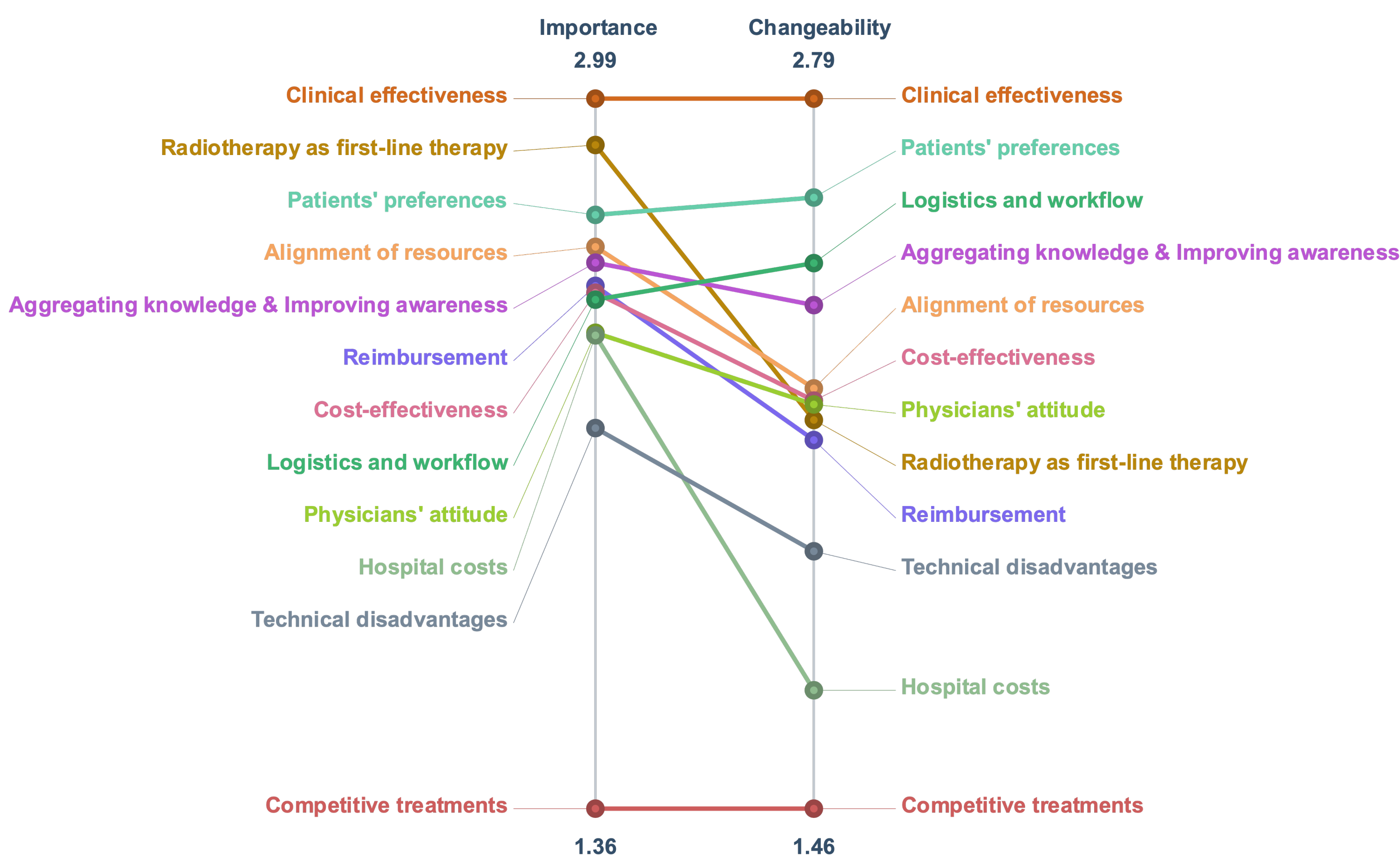


Figure 1. Pattern Match Importance vs. Changeability of clusters.
Axis show the average ratings (Likert scale from 0 to 4) per cluster.

- The resulting concept map had 12 clusters of factors.
- Cluster (8) Clinical effectiveness is perceived as the most important and easiest to act on, and cluster (1) Competitive treatments as the least important (Figure 1).
- The calculated stress value was 0.2560, indicating that participants sorted statements in a similar manner.
- Countries rated the importance of clinical effectiveness and reimbursement differently.
- Patient participation was limited due to language barrier.

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(Supp Material)



Data Analyses

- Sorting data was analyzed through multivariate analyses (i.e., multidimensional scaling and cluster analysis) to generate a concept map, and the computation of average ratings for each factor and cluster of factors.

Conclusion

The results echoed those described in previous implementation empiric studies for other medical devices. GCM offered a structured process that allowed engagement of different stakeholders alongside the clinical trial, thus constructing a basis for advising the implementation of MR-HIFU in Europe.