

University of Groningen

The rise of real world evidence and its role for technology

Soer, Remko

Published in:
Journal of Back and Musculoskeletal Rehabilitation

DOI:
[10.3233/BMR-215005](https://doi.org/10.3233/BMR-215005)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):
Soer, R. (2021). The rise of real world evidence and its role for technology. *Journal of Back and Musculoskeletal Rehabilitation*, 34(6), 903-904. <https://doi.org/10.3233/BMR-215005>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

From the Editor

The rise of real world evidence and its role for technology

Remko Soer^{a,b}

^a*Faculty of Health and Physical Activity, Saxion University of Applied Sciences, Enschede, The Netherlands*

^b*Groningen Pain Center, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands*

Tel.: +31 612750780; E-mail: r.soer@saxion.nl

For decades, clinicians and researchers have used a hierarchy pyramid for the determination of evidence levels. In this pyramid, weaker study designs such as basic science or case series are presented at the bottom, followed by case-control, cohorts, randomized controlled trials (RCTs) and at the top meta-analyses. This has taught us the importance of high quality studies. When performed well, the RCT study design will provide valuable knowledge on the effect of a certain intervention and can still be concerned the gold standard to demonstrate internal validity for original studies. Applicability, external validity, whether an intervention also has a good theoretical fundament, or will finally be adopted and implemented by healthcare practitioners or the target group, however, are different aspects. In that matter, some have also stated that the $n - 1$ trial is the most important for applicability in practice [1].

More and more often, studies appear that have been carried out within the context of the patient, making use of so called real world data. While this field of research is in development, designs are less strong, i.e. controlled compared to the RCT, they might provide valuable evidence of how interventions are truly received by patients. In this issue, You and colleagues [2] present the effects of a multidisciplinary rehabilitation program established in the real world, concluding that results found in the RCT indeed reflect those observed in real-world practice.

Furthermore, the role of the RCT is questioned as a good fit for the evaluation of telemedicine services [3].

Ambulant technologies, including activity and heart rate monitors or stress applications, have evolved to reliable and good alternatives to gold (lab) standards and are therefore emerging technologies for research in patients' daily environment. In the current issue Negrini and colleagues have reviewed the current state of these activity monitors for patients with musculoskeletal disorders. They conclude that although, generally, activity monitors may be considered useful, there is still a large heterogeneity between trackers which limits standardization [4].

Next to ambulant technologies, in this issue, authors present emerging technologies such as electromyography to study the effect of manual techniques for ankle dorsiflexion syndrome, for the use of external loads for gluteus medius training and for obtaining the most ergonomic posture during breastfeeding. The last emerging technology discussed here will be the use of ultrasound. While the ethical discussion for the use and misuse of ultrasound for diagnostics in care as usual remains, we can already see that for research purposes, ultrasound becomes an indispensable piece of technology. In the current issue, we will present a study using ultrasound to guide injection therapy for shoulder pain, and study the applicability of ultrasound as an accessible and affordable alternative than CT-scan to model lumbar vertebrae.

For researchers and practitioners with limited access to literature, BMR publishes all review articles as free

to read. Moreover, the Editor's Choice in this November issue is rewarded to an impactful paper by Du and colleagues, who performed an important evaluation in the fixation treatment of upper arm after surgery of triad injury of the elbow [5]. We congratulate the authors on their important work in this field of research.

Enjoy reading all articles in this new issue!

All the best,

Remko Soer, PhD, MSc, Pt.
Executive Editor
Journal of Back and Musculoskeletal Rehabilitation

References

- [1] Murad MH, Asi N, Alsawas M, et al. New evidence pyramid. *BMJ Evidence-Based Medicine*. 2016; 21: 125-127.
- [2] You DS, Ziadni MS, Cooley CE et al. Effectiveness of a multidisciplinary rehabilitation program in real-world patients with chronic back pain: A pilot cohort data analysis. *J Back Musculoskelet Rehabil*. 2021; 34(6): 965-973.
- [3] Jansen-Kosterink S, Vollenbroek-Hutten M, Hermens, H. A renewed framework for the evaluation of telemedicine. In the 8th International Conference on eHealth, Telemedicine, and Social Medicine: eTELEMED. 2016.
- [4] Negrini F, de Sire A, Lazzarini SG et al. Reliability of activity monitors for physical activity assessment in patients with musculoskeletal disorders: A systematic review. *J Back Musculoskelet Rehabil*. 2021; 34(6): 915-923.
- [5] Shenxing D, Lihong W, Bangjian H et al. Dynamic fixation using rigid tape in rehabilitation after surgery of terrible triad injury of the elbow: A randomized trial. *J Back Musculoskelet Rehabil*. 2021; 34(6): 957-964.