

SHORT COMMUNICATION

## Knowledge Structure in Rehabilitation within and beyond the Medical Field: Bibliometric Perspectives of the Categories “Physical Therapy, Sports Therapy and Rehabilitation” and “Rehabilitation”

### Estructura del conocimiento en rehabilitación dentro y fuera del ámbito médico: Perspectivas bibliométricas de las categorías “Fisioterapia, terapia deportiva y rehabilitación” y “Rehabilitación”

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#### ABSTRACT

Effective communication is crucial in the fields of Physical Therapy, Sports Therapy, and Rehabilitation. Several studies highlight the importance of communication strategies and their impact on patient outcomes and motivation. A bibliometric study was carried out in the categories “Physical Therapy, Sports Therapy and Rehabilitation” and “Rehabilitation” in the Scopus database. While both fields exhibit robustness and relevance in the academic and research panorama, “Physical Therapy, Sports Therapy, and Rehabilitation” appears to have an edge in terms of volume, impact, and collaboration. However, it’s essential to note that the quality and actual impact on clinical practice and society may require considerations beyond these metrics. In conclusion, research in physical therapy, sports therapy, and rehabilitation is essential to advance the profession, improve patient care, and contribute to society’s overall well-being. The implications of this work extend beyond the clinical realm, influencing education, policy, and health economics. It’s an investment in the future of healthcare and a testament to the ongoing commitment to excellence and evidence-based care.

**Palabras clave:** Physical Therapy; Sports Therapy and Rehabilitation; Rehabilitation; Bibliometrics.

#### RESUMEN

La comunicación eficaz es crucial en los campos de la fisioterapia, la terapia deportiva y la rehabilitación. Varios estudios destacan la importancia de las estrategias de comunicación y su impacto en los resultados y la motivación de los pacientes. Se realizó un estudio bibliométrico en las categorías “Fisioterapia, Terapia Deportiva y Rehabilitación” y “Rehabilitación” en la base de datos Scopus. Aunque ambos campos muestran solidez y relevancia en el panorama académico y de investigación, “Fisioterapia, Terapia Deportiva y Rehabilitación” parece tener ventaja en términos de volumen, impacto y colaboración. Sin embargo, es esencial señalar que la calidad y el impacto real en la práctica clínica y la sociedad pueden requerir consideraciones que van más allá de estas métricas. En conclusión, la investigación en fisioterapia, terapia deportiva y rehabilitación es esencial para hacer avanzar la profesión, mejorar la atención al paciente y contribuir al bienestar general de la sociedad. Las implicaciones de este trabajo van más allá del ámbito clínico e influyen en la educación, la política y la economía sanitaria. Es una inversión en el futuro de la atención sanitaria y un testimonio del compromiso permanente con la excelencia y la atención basada en la

evidencia.

**Palabras clave:** Fisioterapia; Terapia Deportiva y Rehabilitación; Rehabilitación; Bibliometría.

Effective communication is crucial in the fields of Physical Therapy, Sports Therapy, and Rehabilitation.<sup>(1,2,3)</sup> Several studies highlight the importance of communication strategies and their impact on patient outcomes and motivation.<sup>(4)</sup> However, there are challenges in implementing effective communication behaviors, such as a lack of clarity and training. Italian physiotherapists, for example, reported limited knowledge and use of communication strategies, indicating a need for improvement in training and education.<sup>(5,6)</sup>

Additionally, communication partner training programs have shown potential in improving communication between individuals with traumatic brain injury and rehabilitation staff. It is also important for professionals in these fields to be skilled listeners and to consider using various communication avenues, including electronic communication, to supplement face-to-face interactions. Enhancing communication skills and training in these fields can lead to better patient adherence, motivation, and treatment outcomes.<sup>(7)</sup>

A bibliometric study was carried out in the categories "Physical Therapy, Sports Therapy and Rehabilitation" and "Rehabilitation" in the Scopus database.

**Table 1.** General Overview and Collaboration in the field of Physical Therapy, Sports Therapy and Rehabilitation

Metric	Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
International collaboration	34718	663282	19,1	1,55
Only national collaboration	62736	794348	12,7	0,99
Only institutional collaboration	43928	446166	10,2	0,77
Single authorship (no collaboration)	18074	87083	4,8	0,49
Total	159456	1990879	12,48544	1

**Table 2.** General Overview and Collaboration in the field of Rehabilitation

Metric	Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
International collaboration	16361	236561	14,5	1,24
Only national collaboration	41799	467690	11,2	0,93
Only institutional collaboration	28863	263039	9,1	0,73
Single authorship (no collaboration)	9622	32697	3,4	0,39
Total	96645	999987	10,35	0,87

In a thorough review of academic output and collaboration metrics in the fields of "Physical Therapy, Sports Therapy, and Rehabilitation" and "Rehabilitation," there are notable differences and collaboration patterns between the two. The field of "Physical Therapy, Sports Therapy, and Rehabilitation" boasts a considerably higher volume of academic output, reaching 159,456 publications, surpassing the field of "Rehabilitation" by approximately 65 %, which has 96,645 publications. This difference suggests more research activity or possibly a broader range of topics within the former field.

Regarding citations received, publications in "Physical Therapy, Sports Therapy, and Rehabilitation" have been cited a total of 1,990,879 times, in comparison to the 999,987 citations in the "Rehabilitation" field. This discrepancy not only reflects the larger number of publications in the former but also suggests a higher impact or visibility of the research in the academic and professional realm.

Delving into the nature of collaboration, publications with international collaboration in "Physical Therapy, Sports Therapy, and Rehabilitation" have an average of 19,1 citations per publication, whereas in "Rehabilitation" it's 14,5. This indicates that while both fields benefit from international collaboration, the former seems to achieve slightly superior recognition in this regard. In contrast, single-author publications in both fields receive less attention, with averages of 4,8 and 3,4 citations per publication respectively, highlighting the potential advantage of collaborations in generating higher-impact research.

Lastly, looking at the "Field-Weighted Citation Impact," which offers a normalized view of the citation impact accounting for differences between fields, "Physical Therapy, Sports Therapy, and Rehabilitation" has an index of 1, whereas "Rehabilitation" has a slightly lower index of 0,87. This reinforces the idea that while both fields are significant and impactful, the former demonstrates a greater degree of influence in the global academic landscape.

While both fields exhibit robustness and relevance in the academic and research panorama, "Physical Therapy, Sports Therapy, and Rehabilitation" appears to have an edge in terms of volume, impact, and collaboration. However, it's essential to note that the quality and actual impact on clinical practice and society may require considerations beyond these metrics.

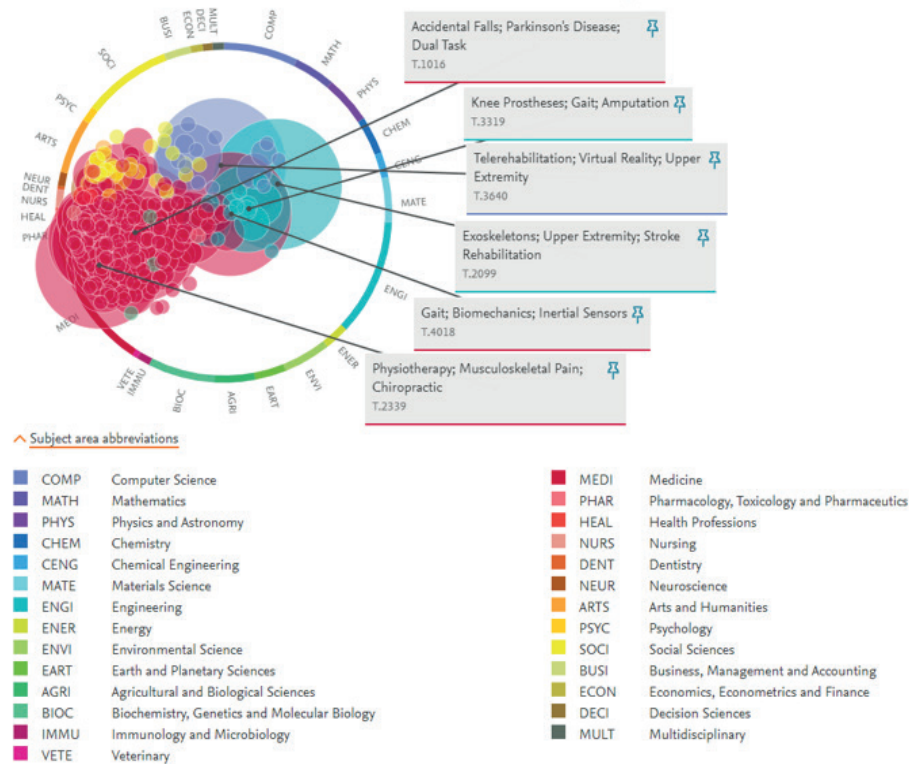


Figure 1. Topics & Topic Clusters in Rehabilitation (420 topics)

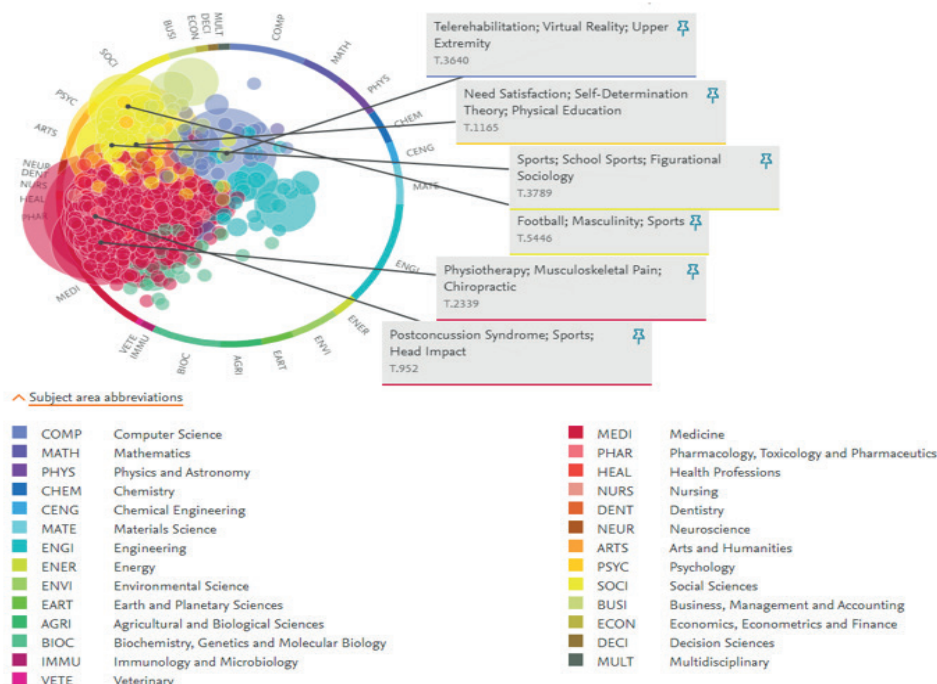
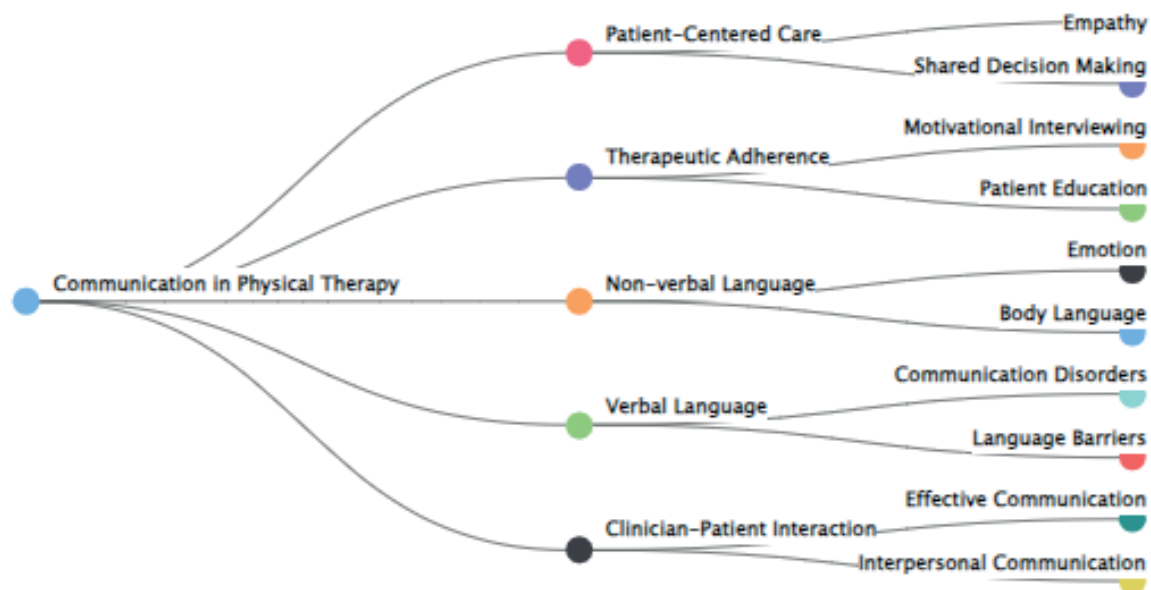


Figure 2. Topics & Topic Clusters in Rehabilitation (853 topics).



**Figure 3.** Keypoints in the communication in the field of Physical Therapy, Sports Therapy and Rehabilitation.

Physical therapy, sports therapy, and rehabilitation are crucial areas of medical care that focus on the maintenance, recovery, or enhancement of mobility, function, and physical well-being. Over the years, research has been a foundational pillar in advancing and developing these disciplines. This research not only deepens our understanding of the human body and its workings but also provides the foundation for creating more effective techniques, interventions, and protocols. The importance of research in these areas is highlighted below:

1. **Better understanding of conditions and injuries:** Research in these fields often involves detailed studies about specific injuries, conditions, and diseases that affect mobility and function. These studies can offer insights into the cause of injuries, risk factors, underlying biological processes, and pathomechanics. With a better understanding of these conditions, professionals can develop and apply more precise and effective treatments.
2. **Development and validation of treatment techniques:** As medical science progresses, so do the techniques and tools available for physical therapists and sports therapists. Research is essential for assessing the efficacy, safety, and applicability of these new techniques. This ensures patients receive evidence-based treatments that maximize their recovery and minimize the risk of complications or relapses.
3. **Injury prevention:** In the sports realm, injury prevention is as critical as treatment. Research helps identify both intrinsic and extrinsic risk factors and develops evidence-based prevention strategies. This benefits not only elite athletes but also the general population participating in physical activities.
4. **Optimization of sports performance:** Beyond recovery and prevention, research in sports therapy extends to the area of performance enhancement. Studying biomechanics, physiology, and other sports-related aspects can offer insights on how athletes can optimize their performance, improve their technique, and reduce fatigue.
5. **Interdisciplinarity and collaboration:** Research in these fields often takes place in collaboration with other disciplines like sports medicine, biomechanics, neuroscience, and psychology. This interdisciplinarity enriches the field, bringing diverse perspectives and allowing a more holistic approach to patient care.
6. **Improvement of quality of life:** Many conditions and injuries treated in physical therapy and rehabilitation significantly impact the patient's quality of life. Researching methods to improve mobility, reduce pain, and restore function can have profound benefits in patients' daily lives, allowing them to return to their regular activities and enhance their overall well-being.
7. **Policy and guideline formulation:** Solid, well-founded research can influence policies and guidelines at local, national, and international levels. Evidence-based recommendations can guide clinical practice, professional training, and decision-making in health systems.
8. **Training and education:** Research findings get integrated into educational programs for physical therapists, sports therapists, and related professionals. This ensures that new generations are

equipped with the most up-to-date knowledge and best practices in their field.

9. **Health economics:** Research can demonstrate the cost-effectiveness of certain treatments and approaches, influencing funding and resource allocation decisions in health systems. By identifying interventions that provide the best outcomes at the lowest cost, resources can be optimized, and quality care provided to a larger number of patients.

In conclusion, research in physical therapy, sports therapy, and rehabilitation is essential to advance the profession, improve patient care, and contribute to society's overall well-being. The implications of this work extend beyond the clinical realm, influencing education, policy, and health economics.<sup>(8,9)</sup> It's an investment in the future of healthcare and a testament to the ongoing commitment to excellence and evidence-based care.

## REFERENCES

1. Al-Wardat M, Etoom M, Lena F, Pellicciari L, D'Amone F, Kossi O, et al. Exploring Communication Practices in Italian Physiotherapy: Knowledge and Use of Effective Communication Strategies—A National Descriptive Study. *Healthcare (Switzerland)* 2023;11. <https://doi.org/10.3390/healthcare11162247>.
2. Wang W. Social environment's effect on athletes motivation for professional development. *Current Psychology* 2023;42:29628-36. <https://doi.org/10.1007/s12144-022-03951-w>.
3. Burke KL. CONSTRUCTIVE COMMUNICATION IN SPORT. *Routledge Handbook of Applied Sport Psychology: a Comprehensive Guide for Students and Practitioners*, Second Edition, 2023, p. 371-9. <https://doi.org/10.4324/9781003173588-43>.
4. Gamboa AJP, Cano CAG, Castillo VS. Decision making in university contexts based on knowledge management systems. *Data and Metadata* 2022;1:92-92. <https://doi.org/10.56294/dm202292>.
5. Christensen I, Power E, Togher L, Norup A. "Communication Is Not Exactly My Field, but It Is Still My Area of Work": Staff and Managers' Experiences of Communication With People With Traumatic Brain Injury. *American Journal of Speech-Language Pathology* 2023;32:827-47. [https://doi.org/10.1044/2022\\_AJSLP-22-00074](https://doi.org/10.1044/2022_AJSLP-22-00074).
6. Abaraogu UO, Aguji KR, Duru DO, Okafor UC, Ezeukwu AO, Igwe SE. Physiotherapist-patient communication in entry-level physiotherapy education: A national survey in Nigeria. *Hong Kong Physiotherapy Journal* 2019;39:77-87. <https://doi.org/10.1142/S1013702519500070>.
7. Chapman CR, Woo NT, Maluf KS. Preferred Communication Strategies Used by Physical Therapists in Chronic Pain Rehabilitation: A Qualitative Systematic Review and Meta-Synthesis. *Physical Therapy* 2022;102. <https://doi.org/10.1093/ptj/pzac081>.
8. Castillo JIR. Identifying promising research areas in health using bibliometric analysis. *Data and Metadata* 2022;1:10. <https://doi.org/10.56294/dm202210>.
9. Ledesma F, González BEM. Bibliometric indicators and decision making. *Data and Metadata* 2022; 1:9. <https://doi.org/10.56294/dm20229>.

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## CONFLICT OF INTEREST

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