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Editorial

The evolving paradigm of rehabilitation: personalization, equity, and integration

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Editorial

The collection of articles in this issue of the Journal of Rehabilitation Research and Practice presents a compelling and thoughtfully curated snapshot of the contemporary rehabilitation landscape. This journal continues to demonstrate its commitment to publishing high-impact, socially relevant research that pushes the boundaries of the field. Spanning diverse populations—from neurologically impaired children in emergencies to migrant women grappling with psychosomatic distress, and from cancer survivors to individuals with end-stage renal disease—the studies in this issue not only reflect the publication's exceptional breadth and inclusivity but also collectively argue for a fundamental shift in our approach. The compelling evidence gathered here urges us to move beyond standardized protocols toward a future where rehabilitation is fundamentally personalized, equitable, and integrated, leveraging both technological innovation and multidisciplinary collaboration.

The Imperative of Personalization

A recurring theme across this issue is the critical need to tailor rehabilitation interventions to the specific physiological, functional, and personal contexts of the individual. The limitations of generic, intensity-driven approaches are particularly evident in populations with complex comorbidities and unique physiological responses.

Madhavan *et al.* (2025) made a powerful case for this with their introduction of Peak Velocity Interval Training (PVIT) for stroke survivors [1]. They note that traditional high-intensity interval training (HIIT), which relies on percentages of maximum heart rate, is often unsuitable for stroke patients who may have blunted cardiovascular responses and significant motor impairments. By using an individual's peak overground walking speed as the benchmark for treadmill training intensity, PVIT ensures the intervention is both challenging and safe, directly aligning with the principles of task-specific neuroplasticity. This is a prime example of precision rehabilitation in action.

Similarly, Knollhoff *et al.* (2025) revealed that survivors of head and neck cancer who often experience severe and permanent speech intelligibility deficits [2]. This underscores the necessity of personalizing survivorship care plans, ensuring that speech-language pathology services are targeted, sustained, and responsive to the specific locus of the disease and its treatment. Personalization is also about choosing the right tool for the context. Nguyen *et al.* (2025) validate the 2-minute walk test (2MWT) as a highly reliable and time-efficient alternative to the 6-minute walk test (6MWT) for assessing walking performance in the elderly [3]. This offers a pragmatic, personalized approach to assessment in busy clinical settings or for frail individuals, enhancing feasibility without sacrificing validity.

The Pursuit of Equity

If personalization addresses the "how" of rehabilitation, equity addresses the "for whom." Several articles in this issue starkly illuminate the systemic barriers that prevent vulnerable populations from receiving any rehabilitation at all, let alone personalized care.

The challenges are perhaps most profound in low-resource settings. Dukuzimana *et al.* (2025), in their qualitative study of nurses in rural Rwanda, paint a clear picture of the barriers: a critical shortage of trained rehabilitation professionals, a lack of essential equipment and infrastructure, and financial and geographical obstacles that make accessing even primary care a struggle [4]. This is not merely lack of resources but deficiency of systems. Echoing this in the context of humanitarian crises, Someshwar and Surya (2025) highlight how emergencies exacerbate the vulnerabilities of children with pre-existing neurological disabilities [5]. Their proposed solutions—mobile rehabilitation units, training for local health workers, and telehealth—provide a crucial blueprint for building resilient, decentralized rehabilitation services that can reach the most isolated and high-risk populations.

However, equity is not solely a matter of geography or infrastructure. Kizilhan *et al.* (2025) reveal how long-settled migrant women of Turkish and Kurdish origin in Germany experience significantly higher levels of embitterment, depression, and overall symptom severity than their male counterparts [6]. Their psychological distress is rooted not in recent migration trauma, but in decades of cumulative socioeconomic disadvantage, gendered cultural expectations, and experiences of perceived injustice. This work is a potent reminder that equitable care requires cultural competence, an understanding of social determinants of health, and therapeutic models that actively empower marginalized individuals.

Integration as the Way Forward

Facing the dual challenges of personalization and equity requires a synergistic approach that integrates innovative technologies with robust, collaborative care models.

On the technological front, Tahmashi *et al.* (2025), in their umbrella review, synthesize evidence supporting the use of transcutaneous electrical nerve stimulation (TENS) for managing spasticity, pain, and neurogenic lower urinary tract dysfunction in spinal cord injury [7]. As a non-invasive, cost-effective modality, TENS represents a valuable tool that can be integrated into comprehensive home- or community-based programs. Similarly, Dukuzimana *et al.* (2025) point to “digital rehabilitation” as a key strategy to overcome physical distance in rural Rwanda [4], demonstrating that innovation can be as simple as using mobile phones to deliver guidance and support, making it a highly adaptable solution.

Technology alone is insufficient without a supportive and coordinated care structure. Smith *et al.* (2025), in their review of Alcohol-Related Brain Damage (ARBD), powerfully argue for a multidisciplinary approach [8]. Individuals with ARBD present with a complex interplay of cognitive, physical, mental health, and social needs that cannot be addressed by any single discipline. The integration of medical management, occupational therapy, and adapted psychosocial interventions is not just beneficial but essential for recovery. This model of integrated care is equally relevant to other complex chronic conditions. Koley and Kar (2025) advocate for supervised exercise therapy to be a standard part of care for patients with end-stage renal disease, a goal that necessitates close collaboration between nephrologists, physiotherapists, and cardiologists [9].

Conclusion

The future of rehabilitation hinges on our collective ability to build a more adaptable, inclusive, and collaborative system. This necessitates championing personalized protocols that respect individual physiology and advocating for equitable access by investing in community-based and culturally competent services. We must actively break down disciplinary silos and foster integration through interdisciplinary collaboration and the strategic use of technology. To realize this vision, we must translate evidence into diverse clinical practices, while also investing in system-level enablers such as policies and funding for training community health workers, developing telehealth infrastructure, and supporting multidisciplinary teams. Furthermore, research must become more inclusive by prioritizing the needs of underserved populations and evaluating the cost-effectiveness of integrated care models.

Rehabilitation serves as the cornerstone of restoring function, dignity, and hope. By steadfastly committing to the core principles of personalization, equity, and integration, we can ensure its benefits extend to every individual in need, transcending barriers of diagnosis, geography, or social circumstance.

Conflicts of Interest

The authors declare no conflict of interest.

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