

GLOBAL EXPERIENCE IN CONTINUOUS ASSESSMENT OF THE EFFECTIVENESS OF REHABILITATION OF CHILDREN WITH DISABILITIES

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Abstract. Continuous assessment of rehabilitation effectiveness in children with disabilities has become a cornerstone of modern pediatric rehabilitation systems worldwide. This literature review synthesizes findings from ten peer-reviewed studies published between 2015 and 2025 in Scopus and Web of Science databases, exploring global experiences, methodologies, and frameworks for evaluating rehabilitation outcomes. The studies emphasize the use of standardized assessment instruments such as the Pediatric Evaluation of Disability Inventory (PEDI), WeeFIM, ICF-CY-based models, and Goal Attainment Scaling (GAS), which enable objective and dynamic measurement of progress in motor, cognitive, and social domains. Developed countries, including the United States, Canada, and Japan, have integrated digital and tele-rehabilitation platforms that allow real-time monitoring and adaptive goal-setting for each child. Meanwhile, low- and middle-income countries have increasingly adopted WHO's International Classification of Functioning, Disability and Health (ICF) framework to establish baseline data and monitor long-term outcomes within resource-limited settings. Evidence across studies indicates that continuous, multi-dimensional assessment leads to improved care coordination, more individualized rehabilitation plans, and better long-term functional outcomes. Furthermore, integrating caregivers' feedback and interdisciplinary collaboration enhances the sustainability of interventions. Despite advances, disparities in access to standardized assessment tools and digital monitoring technologies persist, especially in developing regions. The global experience highlights that systematic, data-driven, and family-centered assessment approaches are essential to optimizing rehabilitation quality and equity for children with disabilities.

Keywords: rehabilitation, children with disabilities, continuous assessment, PEDI, ICF, goal attainment, monitoring, pediatric rehabilitation, functional outcomes, global experience

This systematic review compared commonly used functional outcome tools (PEDI, WeeFIM) and found both instruments show statistical responsiveness to change during rehabilitation but suffer from ceiling effects and limited evidence of clinically meaningful responsiveness in some settings. For continuous assessment, the paper stresses the importance of selecting measures with adequate sensitivity across the full ability range of children served and using repeated measurements to detect meaningful trajectories rather than single pre/post snapshots [1].

Through expert consensus and evidence review the authors produced a practical toolkit recommending specific validated measures for domains (function, participation, quality of life) and guidance on measurement timing. The work illustrates a model for continuous assessment: define domain-specific core measures, standardize measurement intervals, and combine clinician-, performance-, and caregiver-reported instruments to capture multidimensional recovery trajectories [2].

This review discusses how routinely collected EHR data and analytics can enable longitudinal monitoring of child outcomes, identify responders/non-responders, and support real-time quality improvement. The paper highlights barriers (data standardization, missingness, privacy) but offers a road map for harnessing EHRs and registries to operationalize continuous assessment at scale in pediatric rehabilitation programs [3].

This review synthesizes evidence on determinants and strategies for embedding outcome measures into routine care. Key findings for continuous assessment: success requires clinician training, IT integration (EHR templates/score dashboards), leadership support, and feedback loops where results inform care decisions. The study underscores implementation science — not just measure choice — as critical to sustaining continuous evaluation [4].

The review mapped commonly used performance-based measures, linked them to ICF constructs, and evaluated measurement properties. It recommends combining performance-based tests with caregiver-reported measures for richer longitudinal assessment and emphasizes standardized test intervals to build individual recovery curves useful for clinical decision-making and program evaluation [5].

This consensus work produced a core outcome measurement set for pediatric critical care research and practice, demonstrating the value of stakeholder-driven core sets to harmonize outcomes across centers. For rehabilitation, the study models how a core set—agreed timings and measures—enables pooled longitudinal analyses and continuous benchmarking across services [6].

This scoping review catalogued PROMs relevant to children with chronic and disabling conditions and discussed proxy-report issues. It argues that routine integration of PROMs (electronic or paper) into clinical workflows allows repeated capture of health-related quality-of-life and participation outcomes, which complements functional measures for continuous, child-centred assessment [7].

This narrative review highlights the rapid uptake of technology-assisted assessment (wearables, motion analysis, apps) and evidence-based standardized measures (GMFM, COPM) in pediatric physical therapy. The authors show how combining traditional measures with sensor-derived continuous data supports high-resolution monitoring of progress between clinic visits [8].

The paper argues for stronger measurement culture in pediatric rehabilitation — routine, standardized outcome capture, better registry use, and multi-centre data sharing. It advocates repeated measurement (routine intervals) and use of aggregated longitudinal data to inform best practice, thus providing a practical rationale for continuous assessment systems [9].

This review of interdisciplinary programs for pediatric chronic conditions found consistent pre→post improvements but noted heterogeneity in outcome selection and timing across studies. Authors recommend standardized, longitudinal outcome protocols (including functional, psychosocial, and participation measures) to permit continuous assessment of program effectiveness and cross-site comparisons [10].

Conclusion. The global experience in continuous assessment of rehabilitation for children with disabilities demonstrates that effective evaluation is not limited to measuring outcomes at the end of treatment but requires ongoing, structured observation throughout the rehabilitation process. Continuous assessment allows healthcare teams to promptly adjust therapy goals, track functional progress, and involve families in decision-making. Developed countries have achieved notable success through the integration of electronic health systems, tele-rehabilitation platforms, and standardized measurement scales such as PEDI, WeeFIM, and ICF-based tools. These innovations ensure that each child's developmental trajectory is monitored comprehensively and dynamically. Conversely, many low- and middle-income nations face challenges in implementing such systems due to limited financial and technological resources. However, adopting simplified and culturally adapted versions of global models has shown promising results in improving rehabilitation outcomes even under constrained conditions. The findings of this review underscore that the future of pediatric rehabilitation depends on the widespread adoption of data-driven, continuous assessment mechanisms that support individualized, equitable, and sustainable rehabilitation services. Establishing unified monitoring frameworks across countries and investing in training for rehabilitation professionals can further strengthen the effectiveness and comparability of outcomes worldwide.

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