VIMS Journal of Health Research and Innovations

Volume 1 · Issue 1 · 2026
eISSN 0000-0000

REVIEW ARTICLE

MULTIDISCIPLINARY NEUROREHABILITATION: INTEGRATING NEURO-PHYSIOTHERAPY ACROSS THE LIFESPAN IN ADULT AND PAEDIATRIC NEUROLOGICAL DISORDERS FOR ENHANCED COMMUNITY INTEGRATION : A NARRATIVE REVIEW

Maheshwari Harishchandre[1*], **Shyam Ganvir**[2], **Suvarna Ganvir**[3], **Jasmine Shaikh**[4]

[1] *Professor, Department of Neurophysiotherapy, DVVPF's College of Physiotherapy, Ahilyanagar, Maharashtra, India*

[2] *Principal, Professor and Head, Department of Community Physiotherapy, DVVPF's College of Physiotherapy, Ahilyanagar, Maharashtra, India*

[3] *Professor and Head, Department of Neurophysiotherapy, DVVPF's College of Physiotherapy, Ahilyanagar, Maharashtra, India*

[4] *Assistant Professor, Department of Neurophysiotherapy, DVVPF's College of Physiotherapy, Ahilyanagar, Maharashtra, India*

*Correspondence: Maheshwari Harishchandre · maheshwariharishchandre@gmail.com

ABSTRACT

Disorders affecting the nervous system are now the leading cause of ill health and disability worldwide and frequently produce impairments of movement, balance, coordination, cognition, communication and self-care. Because the resulting disability is often complex and long-lasting, it is best managed by a coordinated team rather than by any single discipline. This narrative review, based on a structured search of PubMed/MEDLINE, the Cochrane Library, PEDro and Google Scholar, examines the principles of multidisciplinary neurorehabilitation and the contribution of neuro-physiotherapy in adult and paediatric neurological conditions. The core team typically includes a neurologist or physiatrist, neuro-physiotherapist, occupational therapist, speech-language pathologist, psychologist, nurse, dietitian, orthotist or prosthetist and social worker. Adult neurorehabilitation focuses on motor recovery, functional independence, prevention of secondary complications, community participation and return to work, whereas paediatric neurorehabilitation places greater emphasis on early intervention, neuroplasticity, developmental milestones, family-centred care and school participation. Evidence from Cochrane reviews shows that organised multidisciplinary care reduces death and dependency after stroke and improves activity and participation in acquired brain injury and multiple sclerosis. Shared goal setting, regular team communication, standardised outcome measurement, family involvement, community-based rehabilitation and telerehabilitation help to coordinate care in both age groups. Implementation is nonetheless limited by cost, poor access, shortages of trained professionals, communication gaps between disciplines, caregiver burden and inadequate follow-up. Strengthening integrated, community-linked rehabilitation services is essential if functional outcomes and quality of life are to improve across the lifespan.

Keywords: Neurological rehabilitation; Physical therapy specialty; Patient care team; Interdisciplinary communication; Cerebral palsy; Stroke rehabilitation; Family-centred care; Community-based rehabilitation

INTRODUCTION

Disorders affecting the nervous system are an important and growing cause of disability. The Global Burden of Disease Study 2021 estimated that conditions affecting the nervous system collectively accounted for 443 million disability-adjusted life-years, making them the leading cause of ill health worldwide, and that they affected 3.40 billion people, 43.1% of the global population; stroke was the largest single contributor [1]. The need for rehabilitation is correspondingly large: an estimated 2.41 billion people had health conditions in 2019 that would benefit from rehabilitation, and neurological disorders were among the main contributors [2]. Beyond their direct effects on motor

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

control, posture, balance, coordination, cognition, communication and mobility, neurological impairments commonly affect psychological well- being, education, employment, family roles and social participation. The International Classification of Functioning, Disability and Health (ICF) provides a useful framework for describing these consequences in terms of impairments of body function and structure, limitations of activity and restrictions of participation, all shaped by personal and environmental factors [3].

Neuro- physiotherapy has a central role in this field, contributing to the restoration of movement, optimisation of function, prevention of secondary complications and promotion of independence. However, the needs of people with neurological disorders rarely fall within the scope of a single profession. Cognitive, communicative, psychological, nutritional, environmental and vocational needs commonly coexist with motor impairment, and meeting them requires several disciplines working towards shared functional goals.

Multidisciplinary care has therefore become a defining feature of contemporary neurorehabilitation, and the evidence supporting it is strongest in stroke. Cochrane reviews have shown that organised inpatient stroke-unit care, delivered by a coordinated multidisciplinary team, reduces death and dependency compared with care on general wards [4], and that early supported discharge by a multidisciplinary team reduces the length of hospital stay and the risk of death or dependency [5]. Comparable benefits of multidisciplinary rehabilitation on activity and participation have been reported in acquired brain injury [6] and multiple sclerosis [7]. Rehabilitation needs also extend across the whole lifespan. Adults commonly present with stroke, traumatic brain injury, Parkinson’s disease and other movement disorders, multiple sclerosis, spinal cord injury, peripheral neuropathies and neurodegenerative disorders, whereas children more often present with cerebral palsy, developmental delay, autism spectrum disorder, neuromuscular disorders, spina bifida, paediatric stroke and other neurological or genetic conditions. Although clinical presentation and developmental considerations differ markedly between these groups, coordinated multidisciplinary care is fundamental to meaningful and lasting functional outcomes in both.

This narrative review describes the principles of multidisciplinary neurorehabilitation, the roles of the core team members, and the contribution of neuro-physiotherapy in adult and paediatric neurological conditions. It also considers models of care and coordination, outcome measurement, the benefits and barriers to implementation, and directions for future practice.

METHODS

This narrative review was prepared following the criteria of the Scale for the Assessment of Narrative Review Articles (SANRA) [8] and established guidance on writing narrative reviews [9]. Relevant literature was identified through searches of PubMed/ MEDLINE, the Cochrane Library, the Physiotherapy Evidence Database (PEDro) and Google Scholar for articles published in English between 2006 to July 2026. Search terms were used in combination and included "multidisciplinary rehabilitation", "interdisciplinary", "neurorehabilitation", "neurological physiotherapy", "stroke", "traumatic brain injury", "spinal cord injury", "multiple sclerosis", "cerebral palsy", "paediatric rehabilitation", "family-centred care", "community-based rehabilitation", "telerehabilitation" and "outcome measures". Priority was given to Cochrane and other systematic reviews, clinical practice guidelines, World Health Organization (WHO) frameworks and seminal conceptual papers; primary studies were included when they addressed specific points not covered by higher-level evidence. Reference lists of key articles were screened for additional sources. Consistent with the narrative design, no formal quality appraisal or quantitative synthesis was undertaken.

CONCEPT OF MULTIDISCIPLINARY NEUROREHABILITATION

Multidisciplinary rehabilitation brings together professionals from different health disciplines who work with the person and their family to identify problems, agree priorities and deliver discipline- specific interventions. Each professional contributes according to their expertise, while communication and coordination across the team ensure that individual interventions converge on shared functional goals.

The multidisciplinary model should be distinguished from the interdisciplinary and transdisciplinary models with which it is often conflated [10]. In a multidisciplinary model, professionals assess and manage the person within their own areas of expertise and coordinate care through shared documentation, meetings or referral pathways. An interdisciplinary model involves closer collaboration, with integrated treatment planning and shared goal setting, whereas a transdisciplinary model involves greater role release and the transfer of skills between team members, often

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

with one key worker delivering interventions on behalf of several disciplines [10]. In practice, many neurorehabilitation teams combine elements of all three. Drawing on a systematic review and a survey of 253 staff in 11 community rehabilitation and intermediate care teams in the United Kingdom, Nancarrow and colleagues identified ten characteristics of effective interdisciplinary teamwork, including strong leadership, clear communication structures, a supportive team climate, an appropriate skill mix, and role clarity balanced by role flexibility [11]. These principles apply directly to neurorehabilitation, where care should remain person- centred and goal- oriented, with decisions shaped by individual needs, functional priorities, available resources and the person's home and community environment.

CORE MEMBERS OF THE MULTIDISCIPLINARY NEUROREHABILITATION TEAM

The composition of the team varies with the clinical condition, the age of the patient, the rehabilitation setting and the resources available. The principal roles of the professionals most commonly represented are summarised in Table 1. Nurses are often the professionals most consistently present throughout the rehabilitation episode, and physicians coordinate the medical aspects of care, including pharmacological management of spasticity with agents such as oral baclofen or focal botulinum toxin injection where indicated [12].

Table 1. Core members of the multidisciplinary neurorehabilitation team and their principal roles

Team member	Principal roles
Neurologist or physiatrist	Diagnosis, medical management and prognosis; coordination of the medical aspects of rehabilitation; pharmacological management of spasticity and other neurological symptoms (e.g., oral baclofen, botulinum toxin injection)
Neuro-physiotherapist	Motor relearning, postural control, balance, gait training, strengthening and endurance, mobility, spasticity management, respiratory care, vestibular rehabilitation, functional electrical stimulation, prevention of secondary musculoskeletal complications
Occupational therapist	Upper-limb rehabilitation, fine motor training, sensory processing, self-care and activities of daily living, cognitive-functional training, environmental modification
Speech-language pathologist	Assessment and treatment of aphasia, dysarthria, dysphagia, voice disorders, language impairment and social communication difficulties
Psychologist or neuropsychologist	Assessment and management of cognitive, behavioural, emotional and learning difficulties; psychological support for the person and family
Nurse	Continuous clinical care, medication administration, skin care, monitoring, safety and day-to-day management; reinforcement of therapy goals throughout the day
Dietitian or nutritionist	Nutritional management in dysphagia, altered requirements, muscle weakness, growth-related needs in children and prolonged disability
Orthotist or prosthetist	Prescription, fabrication, fitting of and training with orthoses, prostheses and other devices to improve alignment, mobility, safety and independence
Social worker	Counselling, coordination of community resources, financial and social support, and linkage with services needed for discharge and reintegration

Note: Team composition varies with the condition, the age of the patient, the setting and available resources.

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

MULTIDISCIPLINARY NEURO-PHYSIOTHERAPY IN ADULT NEUROLOGICAL CONDITIONS

Adult neurorehabilitation aims to maximise functional independence, prevent secondary complications, improve participation and support reintegration into family, social, community and working life. The conditions most often requiring multidisciplinary input are stroke, traumatic brain injury, Parkinson's disease and other movement disorders, multiple sclerosis, spinal cord injury, peripheral neuropathies and other neurodegenerative disorders.

Role of neuro-physiotherapy

The neuro- physiotherapist develops an individualised programme based on the person's impairments, activity limitations, participation restrictions and rehabilitation goals, in line with the ICF framework [3]. The main areas of intervention include motor relearning, strengthening, endurance training, postural control, balance training, gait re-education, spasticity management, respiratory physiotherapy, vestibular rehabilitation, functional electrical stimulation and functional mobility training. Evidence for many of these interventions is substantial: a meta- analysis of 467 randomised trials of physical therapy after stroke found beneficial effects for most interventions, particularly those that were task-specific and delivered at higher intensity [13].

Gait rehabilitation may involve assistive devices, orthoses, task-specific practice and technology-assisted approaches where indicated, with training progressing from impairment- focused activities towards meaningful, community-relevant tasks. Structured goal setting supports this progression. A Cochrane review of 39 studies involving 2,846 participants found low-quality evidence that goal setting, with or without strategies to enhance goal pursuit, improves health- related quality of life and self- efficacy in adults with acquired disability, although effects on activity and participation were inconsistent and no single goal-setting approach was clearly superior [14]. Writing goals that are specific, measurable, achievable, realistic and timed (SMART) provides a practical structure for agreeing and reviewing them with the patient [15].

Spasticity management requires coordinated decision- making between physiotherapists and medical colleagues. Positioning, stretching, active movement training, weight-bearing and selected soft-tissue techniques may be combined with pharmacological treatment when clinically indicated [12]. Respiratory physiotherapy is particularly relevant for people with neuromuscular weakness, impaired cough, reduced respiratory function or prolonged immobility, in whom airway clearance and ventilatory support techniques can reduce the risk of respiratory complications.

Spinal cord injury illustrates how strongly the organisation of rehabilitation services can vary. An international comparison of 956 patients admitted to spinal rehabilitation units in nine countries found substantial differences between countries in patient characteristics, length of stay and neurological and discharge outcomes [16]. Such variation underlines the importance of well- resourced, coordinated teams and of shared standards for rehabilitation practice in this population.

MULTIDISCIPLINARY NEURO-PHYSIOTHERAPY IN PAEDIATRIC NEUROLOGICAL CONDITIONS

Paediatric neurorehabilitation differs fundamentally from adult rehabilitation because the child is continuously growing and developing. Planning must therefore take account of developmental milestones, neuroplasticity, learning, motivation, family involvement, education and participation, in addition to the direct management of neurological impairment. The main objectives are to promote functional development, maximise independence, prevent secondary complications, improve participation and support the child and family over time.

Conditions commonly requiring multidisciplinary paediatric input include cerebral palsy, autism spectrum disorder, developmental delay and intellectual disability, Duchenne muscular dystrophy, spina bifida, paediatric stroke and motor deficits associated with epilepsy. Cerebral palsy is the most common cause of physical disability in childhood [17]. It is defined as a group of permanent disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances in the developing fetal or infant brain; the motor disorders are often accompanied by disturbances of sensation, perception, cognition, communication and behaviour, by epilepsy and by secondary musculoskeletal problems [18]. This multidimensional definition in itself explains why management by a single discipline is insufficient and why coordinated multidisciplinary care is standard practice. Early diagnosis,

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

now possible before six months of corrected age, allows intervention to begin during the period of greatest neuroplasticity [19].

Role of neuro-physiotherapy

Paediatric neuro-physiotherapy focuses on developmental and functional goals, including gross motor development, postural control, trunk stability, sensorimotor integration, gait training, orthotic management, constraint-induced movement therapy, play-based therapy and assistive technology. Assessment and goal setting should be individualised to the child's developmental level, functional abilities, family priorities and participation needs. Treatment choices should be guided by current evidence: a systematic review of interventions for children with cerebral palsy rated active, task-specific approaches such as constraint-induced movement therapy, bimanual training, goal-directed training and mobility training as effective for improving motor function, whereas several traditional impairment-focused approaches, including neurodevelopmental techniques, have weaker support [20].

Family-centred care

Family involvement is central to paediatric neurorehabilitation. The framework of family-centred service described by Rosenbaum and colleagues holds that parents know their children best, that professionals should work in partnership with families rather than in a directive role, and that the strengths and needs of all family members should be considered in planning intervention [21]. A later review focused on cerebral palsy found that family-centred service is associated with greater parental satisfaction, better parental psychological well-being and better alignment between therapeutic goals and family priorities [22]. In practice, parents and caregivers should receive structured education in handling, positioning, home activities, exercise programmes, assistive devices and prevention of complications, delivered in a way that respects the family's own priorities and circumstances.

School-based rehabilitation

School participation should be built explicitly into rehabilitation planning. Coordination with teachers, special educators and other school staff helps to carry gains achieved in clinical settings into educational and social participation, and allows physiotherapy and occupational therapy goals to be reinforced consistently across the child's daily environments.

FAMILY, SCHOOL AND COMMUNITY INVOLVEMENT

Successful neurorehabilitation extends well beyond the therapy department. Families and caregivers provide much of the day-to-day support and are therefore active members of the rehabilitation process rather than passive recipients of information. Family education should cover understanding of the condition, positioning and assistance with mobility, home exercise and activity programmes, prevention of secondary complications, safe use of assistive devices, recognition of fatigue and overuse, strategies to encourage independence, and arrangements for follow-up and referral.

For children, coordination with schools is particularly important given the time they spend in educational settings. Community-based rehabilitation (CBR) can further support continuity of care and participation outside hospital. The WHO CBR Guidelines frame this approach as a strategy for community-based inclusive development that uses local resources and works across the health, education, livelihood, social and empowerment sectors to support people with disabilities of all ages, particularly in low-resource settings where specialised institutional services are scarce [23].

MODELS OF CARE AND COORDINATION

Effective multidisciplinary rehabilitation depends on organised communication and clearly defined goals. Five complementary approaches are particularly relevant.

Goal-oriented rehabilitation. Goals should be specific, measurable, achievable, relevant and time-bound, and should be agreed collaboratively with the patient and family rather than set by the team alone [14,15].

Family-centred practice. Family priorities should be incorporated into assessment and intervention planning, particularly, though not only, in paediatric rehabilitation [21,22].

Community-based rehabilitation. CBR helps to bridge the gap between institutional rehabilitation and everyday

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

participation by extending support into the home and community [23].

Telerehabilitation. Remote delivery can support follow-up, monitoring of home programmes, caregiver education and continuity of care, particularly where distance or limited resources restrict access to specialist services. A Cochrane review of telerehabilitation after stroke found little or no difference in independence in activities of daily living between telerehabilitation and in-person therapy, suggesting that remote models are a feasible adjunct or alternative for appropriately selected patients [24].

Case conferences. Regular case conferences and structured interprofessional communication improve coordination. Goal review, discharge planning and periodic outcome assessment should be routine parts of the rehabilitation process rather than responses to specific problems [11].

OUTCOME MEASURES IN NEUROREHABILITATION

Standardised outcome measures allow clinicians to establish baseline status, monitor progress, evaluate the response to treatment and communicate functional change across the team in a common language. Commonly used measures for adults and children are summarised in Table 2 [25–38]. Measures should be selected according to the person's age, diagnosis, functional level and treatment goals, and according to their measurement properties, including validity, reliability and responsiveness in the population and setting concerned [39].

Table 2. Selected standardised outcome measures used in adult and paediatric neurorehabilitation

Measure	Main construct assessed	Population	Ref.
Adult measures			
Stroke Rehabilitation Assessment of Movement (STREAM)	Voluntary movement and basic mobility	Stroke	[25]
Spinal Cord Independence Measure (SCIM)	Self-care, respiration and sphincter management, mobility	Spinal cord injury	[26]
Wheelchair Skills Test	Wheelchair mobility skills	Wheelchair users	[27]
Berg Balance Scale	Static and dynamic balance	Older adults; neurological conditions	[28]
Functional Independence Measure (FIM)	Disability in self-care, mobility, communication and cognition	General rehabilitation	[29]
Modified Rankin Scale	Global disability and dependence	Stroke	[30]
Six-Minute Walk Test	Walking endurance and functional exercise capacity	Adults	[31]
Mini-BESTest	Dynamic balance and balance control systems	Neurological conditions	[32]
Dynamic Gait Index	Gait adaptation to task demands; falls risk	Older adults; vestibular and neurological conditions	[33]
Paediatric measures			
Gross Motor Function Measure (GMFM)	Change in gross motor function	Cerebral palsy	[34]
Gross Motor Function Classification System (GMFCS)	Classification of gross motor function (levels I–V)	Cerebral palsy	[35]
Peabody Developmental Motor Scales, 2nd edition (PDMS-2)	Gross and fine motor development	Birth to 5 years	[36]

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

Measure	Main construct assessed	Population	Ref.
Pediatric Evaluation of Disability Inventory (PEDI)	Functional skills and caregiver assistance	6 months to 7.5 years	[37]
Bruininks-Oseretsky Test of Motor Proficiency, 2nd edition (BOT-2)	Fine and gross motor proficiency	4 to 21 years	[38]

BENEFITS OF MULTIDISCIPLINARY NEUROREHABILITATION

A coordinated multidisciplinary approach offers several advantages. Multiple domains of function can be assessed together rather than in isolation, and intervention can be tailored to the person's impairments, goals and context. Coordinated communication supports continuity of care across settings and over time, and any team member can identify secondary complications early and prompt timely intervention. Rehabilitation extends beyond reducing impairment towards meaningful real-world activity, families receive structured education and support, and goals can be carried into home, school, workplace and community settings. In stroke, acquired brain injury and multiple sclerosis these advantages have been shown to translate into better survival, less dependency, or improved activity and participation [4–7].

CHALLENGES IN IMPLEMENTATION

Despite these benefits, implementing multidisciplinary neurorehabilitation is often difficult. The main barriers include a limited rehabilitation workforce, poor access in resource-limited settings, financial constraints, communication gaps between disciplines, a shortage of trained paediatric specialists, caregiver burden and inadequate follow-up after discharge [2,40].

In many settings, access to specialised rehabilitation falls sharply after discharge from acute care, even though needs persist. Geographical distance, financial hardship, limited awareness of available services and weak community rehabilitation infrastructure further reduce continuity of care, and these problems disproportionately affect people in low- and middle-income countries [23,40]. Potential solutions include integrated rehabilitation centres, professional training programmes, telerehabilitation [24], community-based rehabilitation [23], stronger referral systems and structured protocols for multidisciplinary communication [11].

FUTURE DIRECTIONS

Neurorehabilitation services should move towards more integrated, person-centred and function-oriented models of care, with greater emphasis on early referral, standardised assessment, shared goal setting [14], caregiver education, community participation and long-term follow-up in place of episodic care delivered in separate disciplinary silos.

Technology-assisted rehabilitation and telerehabilitation offer opportunities to extend specialist services beyond hospitals, particularly to geographically dispersed or under-resourced populations [24]. Interprofessional education can improve understanding of professional roles and prepare practitioners for collaborative practice [41], consistent with the characteristics of effective teams identified by Nancarrow and colleagues [11]. In paediatric rehabilitation, closer integration between health services, families, schools and community resources is particularly important and should build on established family-centred principles [21,22]. For adults, community mobility, vocational participation, social reintegration and long-term self-management should become core rather than peripheral objectives of rehabilitation planning.

LIMITATIONS OF THIS REVIEW

This is a narrative rather than a systematic review. Although the search covered several major databases and prioritised high-level evidence, study selection was not exhaustive or duplicated, the quality of individual studies was not formally appraised, and no quantitative synthesis was performed. Much of the controlled evidence for multidisciplinary rehabilitation comes from adult stroke, acquired brain injury and multiple sclerosis, and from high-income health systems, so extrapolation to other conditions, to children and to low-resource settings should be made with caution.

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

CONCLUSION

Neurological disorders frequently cause complex, multidimensional impairments that cannot be adequately addressed by a single profession [1]. Multidisciplinary neurorehabilitation brings together the expertise of a range of professionals to meet physical, cognitive, communicative, psychological, nutritional, social and functional needs in a coordinated way, and there is good evidence of benefit for several adult conditions [4–7]. Neuro-physiotherapy is an essential part of this team, contributing to movement, postural control, balance, gait, mobility, endurance, prevention of complications and functional independence. Adult rehabilitation emphasises independence, participation and community reintegration, whereas paediatric rehabilitation places more weight on development, neuroplasticity, family- centred care and school participation [18– 22]. A coordinated model that combines standardised outcome assessment, shared functional goals, regular team communication, family participation and community follow-up can strengthen the continuity and effectiveness of care. Improving access to multidisciplinary services, especially in resource-limited settings, remains essential for better long-term function and quality of life across the lifespan [23,40].

DECLARATIONS

All authors read and approved the final manuscript.

Funding: This review received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Conflict of interest: The authors declare no conflict of interest.

Ethical approval: Not applicable; this review is based on published literature and did not involve human participants.

References

1. GBD 2021 Nervous System Disorders Collaborators. Global, regional, and national burden of disorders affecting the nervous system, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. Lancet Neurol. 2024;23(4):344-81. doi:10.1016/S1474-4422(24)00038-3.
2. Cieza A, Causey K, Kamenov K, Hanson SW, Chatterji S, Vos T. Global estimates of the need for rehabilitation based on the Global Burden of Disease study 2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2021;396(10267):2006-17. doi:10.1016/S0140-6736(20)32340-0.
3. World Health Organization. International Classification of Functioning, Disability and Health: ICF. Geneva: World Health Organization; 2001.
4. Langhorne P, Ramachandra S; Stroke Unit Trialists' Collaboration. Organised inpatient (stroke unit) care for stroke: network meta-analysis. Cochrane Database Syst Rev. 2020;4(4):CD000197. doi:10.1002/14651858.CD000197.pub4.
5. Langhorne P, Baylan S; Early Supported Discharge Trialists. Early supported discharge services for people with acute stroke. Cochrane Database Syst Rev. 2017;7(7):CD000443. doi:10.1002/14651858.CD000443.pub4.
6. Turner-Stokes L, Pick A, Nair A, Disler PB, Wade DT. Multi-disciplinary rehabilitation for acquired brain injury in adults of working age. Cochrane Database Syst Rev. 2015;(12):CD004170. doi:10.1002/14651858.CD004170.pub3.
7. Khan F, Turner-Stokes L, Ng L, Kilpatrick T. Multidisciplinary rehabilitation for adults with multiple sclerosis. Cochrane Database Syst Rev. 2007;(2):CD006036. doi:10.1002/14651858.CD006036.pub2.
8. Baethge C, Goldbeck-Wood S, Mertens S. SANRA—a scale for the quality assessment of narrative review articles. Res Integr Peer Rev. 2019;4:5. doi:10.1186/s41073-019-0064-8.
9. Green BN, Johnson CD, Adams A. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. J Chiropr Med. 2006;5(3):101-17. doi:10.1016/S0899-3467(07)60142-6.
10. Choi BC, Pak AW. Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. Clin Invest Med. 2006;29(6):351-64.
11. Nancarrow SA, Booth A, Ariss S, Smith T, Enderby P, Roots A. Ten principles of good interdisciplinary team work. Hum Resour Health. 2013;11:19. doi:10.1186/1478-4491-11-19.
12. Simpson DM, Hallett M, Ashman EJ, Comella CL, Green MW, Gronseth GS, et al. Practice guideline update summary: botulinum neurotoxin for the treatment of blepharospasm, cervical dystonia, adult spasticity, and headache: report of the Guideline Development Subcommittee of the American Academy of Neurology. Neurology. 2016;86(19):1818-26. doi:10.1212/WNL.0000000000002560.
13. Veerbeek JM, van Wegen E, van Peppen R, van der Wees PJ, Hendriks E, Rietberg M, et al. What is the evidence for physical therapy poststroke? A systematic review and meta-analysis. PLoS One. 2014;9(2):e87987. doi:10.1371/journal.pone.0087987.
14. Levack WMM, Weatherall M, Hay-Smith EJC, Dean SG, McPherson K, Siegert RJ. Goal setting and strategies to enhance goal pursuit for adults with acquired disability participating in rehabilitation. Cochrane Database Syst Rev. 2015; (7):CD009727. doi:10.1002/14651858.CD009727.pub2.

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

15. Bovend'Eerdt TJ, Botell RE, Wade DT. Writing SMART rehabilitation goals and achieving goal attainment scaling: a practical guide. Clin Rehabil. 2009;23(4):352-61. doi:10.1177/0269215508101741.
16. New PW, Reeves RK, Smith É, Townson A, Eriks-Hoogland I, Gupta A, et al. International retrospective comparison of inpatient rehabilitation for patients with spinal cord dysfunction: epidemiology and clinical outcomes. Arch Phys Med Rehabil. 2015;96(6):1080-7. doi:10.1016/j.apmr.2015.02.016.
17. Graham HK, Rosenbaum P, Paneth N, Dan B, Lin JP, Damiano DL, et al. Cerebral palsy. Nat Rev Dis Primers. 2016;2:15082. doi:10.1038/nrdp.2015.82.
18. Rosenbaum P, Paneth N, Leviton A, Goldstein M, Bax M, Damiano D, et al. A report: the definition and classification of cerebral palsy April 2006. Dev Med Child Neurol Suppl. 2007;109:8-14.
19. Novak I, Morgan C, Adde L, Blackman J, Boyd RN, Brunstrom-Hernandez J, et al. Early, accurate diagnosis and early intervention in cerebral palsy: advances in diagnosis and treatment. JAMA Pediatr. 2017;171(9):897-907. doi:10.1001/jamapediatrics.2017.1689.
20. Novak I, Morgan C, Fahey M, Finch-Edmondson M, Galea C, Hines A, et al. State of the evidence traffic lights 2019: systematic review of interventions for preventing and treating children with cerebral palsy. Curr Neurol Neurosci Rep. 2020;20(2):3. doi:10.1007/s11910-020-1022-z.
21. Rosenbaum P, King S, Law M, King G, Evans J. Family-centred service: a conceptual framework and research review. Phys Occup Ther Pediatr. 1998;18(1):1-20. doi:10.1080/J006v18n01_01.
22. King S, Teplicky R, King G, Rosenbaum P. Family-centered service for children with cerebral palsy and their families: a review of the literature. Semin Pediatr Neurol. 2004;11(1):78-86. doi:10.1016/j.spen.2004.01.009.
23. Khasnabis C, Heinicke Motsch K, Achu K, Al Jubah K, Brodtkorb S, Chervin P, et al., editors. Community-based rehabilitation: CBR guidelines. Geneva: World Health Organization; 2010.
24. Laver KE, Adey-Wakeling Z, Crotty M, Lannin NA, George S, Sherrington C. Telerehabilitation services for stroke. Cochrane Database Syst Rev. 2020;1(1):CD010255. doi:10.1002/14651858.CD010255.pub3.
25. Daley K, Mayo N, Wood-Dauphinée S. Reliability of scores on the Stroke Rehabilitation Assessment of Movement (STREAM) measure. Phys Ther. 1999;79(1):8-19.
26. Catz A, Itzkovich M, Agranov E, Ring H, Tamir A. SCIM—spinal cord independence measure: a new disability scale for patients with spinal cord lesions. Spinal Cord. 1997;35(12):850-6. doi:10.1038/sj.sc.3100504.
27. Kirby RL, Swuste J, Dupuis DJ, MacLeod DA, Monroe R. The Wheelchair Skills Test: a pilot study of a new outcome measure. Arch Phys Med Rehabil. 2002;83(1):10-8. doi:10.1053/apmr.2002.26823.
28. Berg KO, Wood-Dauphinee SL, Williams JI, Maki B. Measuring balance in the elderly: validation of an instrument. Can J Public Health. 1992;83 Suppl 2:S7-11.
29. Keith RA, Granger CV, Hamilton BB, Sherwin FS. The functional independence measure: a new tool for rehabilitation. Adv Clin Rehabil. 1987;1:6-18.
30. van Swieten JC, Koudstaal PJ, Visser MC, Schouten HJ, van Gijn J. Interobserver agreement for the assessment of handicap in stroke patients. Stroke. 1988;19(5):604-7. doi:10.1161/01.str.19.5.604.
31. ATS Committee on Proficiency Standards for Clinical Pulmonary Function Laboratories. ATS statement: guidelines for the six-minute walk test. Am J Respir Crit Care Med. 2002;166(1):111-7. doi:10.1164/ajrccm.166.1.at1102.
32. Franchignoni F, Horak F, Godi M, Nardone A, Giordano A. Using psychometric techniques to improve the Balance Evaluation Systems Test: the mini-BESTest. J Rehabil Med. 2010;42(4):323-31. doi:10.2340/16501977-0537.
33. Shumway-Cook A, Woollacott MH. Motor control: theory and practical applications. Baltimore: Williams & Wilkins; 1995.
34. Russell DJ, Rosenbaum PL, Cadman DT, Gowland C, Hardy S, Jarvis S. The gross motor function measure: a means to evaluate the effects of physical therapy. Dev Med Child Neurol. 1989;31(3):341-52. doi:10.1111/j.1469-8749.1989.tb04003.x.
35. Palisano R, Rosenbaum P, Walter S, Russell D, Wood E, Galuppi B. Development and reliability of a system to classify gross motor function in children with cerebral palsy. Dev Med Child Neurol. 1997;39(4):214-23. doi:10.1111/j.1469-8749.1997.tb07414.x.
36. Folio MR, Fewell RR. Peabody Developmental Motor Scales. 2nd ed. Austin (TX): PRO-ED; 2000.
37. Haley SM, Coster WJ, Ludlow LH, Haltiwanger JT, Andrellos PJ. Pediatric Evaluation of Disability Inventory (PEDI): development, standardization and administration manual. Boston: New England Medical Center Hospitals; 1992.
38. Bruininks RH, Bruininks BD. Bruininks-Oseretsky Test of Motor Proficiency. 2nd ed. Minneapolis (MN): Pearson Assessment; 2005.
39. Mokkink LB, Terwee CB, Patrick DL, Alonso J, Stratford PW, Knol DL, et al. The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes. J Clin Epidemiol. 2010;63(7):737-45. doi:10.1016/j.jclinepi.2010.02.006.
40. World Health Organization. Rehabilitation in health systems. Geneva: World Health Organization; 2017.
41. World Health Organization. Framework for action on interprofessional education and collaborative practice. Geneva: World Health Organization; 2010.

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI