

Early-Career Neurorehabilitation Professionals in India: Challenges, Barriers, and the Road Ahead

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ABSTRACT

Background: Neurorehabilitation is an interdisciplinary field growing rapidly in India, yet early-career professionals often face significant obstacles. This study explores the real-world challenges encountered by young neurorehabilitation professionals across various disciplines. **Objectives:** To identify and categorize key professional, educational, infrastructural, and systemic challenges experienced by early-career neurorehabilitation practitioners in India. **Methods:** A narrative synthesis of available literature, expert commentary, and preliminary field insights from physiotherapists, occupational therapists, speech-language pathologists, and clinical psychologists working in neurorehabilitation. **Results:** Key barriers include inadequate structured training, limited job opportunities, lack of mentorship, interdisciplinary silos, urban-rural disparities, limited research support, poor remuneration, and policy-level invisibility. **Conclusion:** Strengthening early-career support systems, creating unified neurorehabilitation training frameworks, and enhancing visibility in national health agendas are essential for retaining and nurturing the next generation of neurorehabilitation experts.

Keywords: Tele-rehabilitation, India, Rehabilitation training, Allied health education

INTRODUCTION

Neurorehabilitation is a rapidly evolving field essential to the long-term care of individuals with neurological conditions such as stroke, traumatic brain injury, spinal cord injury, epilepsy, and cerebral palsy. As the burden of neurological disorders continues to grow in India—accounting for nearly 10% of the global burden—so does the need for skilled neurorehabilitation professionals who can deliver interdisciplinary, patient-centred care across the continuum of recovery [1].

Despite this demand, early-career professionals in neurorehabilitation—physiotherapists, occupational therapists, speech-language pathologists, neuropsychologists, and rehabilitation nurses—often face systemic and structural challenges that hinder their professional development and long-term retention in the field. These challenges stem from gaps in education, mentorship, employment,

recognition, and research opportunities, especially in low-resource and rural settings.

One of the most critical issues is the absence of standardized postgraduate training in neurorehabilitation. Most institutions treat neurorehabilitation as a module within general neurology or rehabilitation sciences, without offering specialized interdisciplinary training programs. As a result, fresh graduates are frequently underprepared to manage complex neuro cases or work within multidisciplinary teams [2,3]. Compounding this is the lack of structured internships or fellowships that

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Received on- 15th January 2025
Published on- 12th March 2025

integrate physiotherapy, occupational therapy, speech therapy, and neuropsychology under one roof.

Mentorship is another missing link. Unlike clinical disciplines such as neurology or orthopedic surgery that have clear pathways for mentorship and specialization, neurorehabilitation in India lacks a structured ecosystem for career guidance and clinical supervision. Early-career professionals often report feeling isolated and unclear about their role within rehabilitation teams [4].

Job opportunities are concentrated in urban tertiary care centers, private hospitals, and niche rehabilitation clinics. For many professionals, especially those outside metropolitan areas, positions are either scarce or poorly remunerated. Starting salaries for neurorehabilitation therapists in India are often not commensurate with their clinical responsibilities, training, or emotional labor involved in working with chronically disabled patients [5].

Furthermore, neurorehabilitation continues to remain a low-visibility specialty in national healthcare policy frameworks. Initiatives like Ayushman Bharat and the National Health Mission include generic rehabilitation goals but rarely prioritize the neurological spectrum explicitly. The result is limited funding, absence of clear career pathways, and inadequate recognition for neurorehabilitation professionals in the broader public health system [6].

What this really means is that we have a paradox: a country with one of the largest neurological disease burdens, and yet a weak pipeline to train, support, and retain the professionals required to deliver long-term care. This paper aims to unpack the specific challenges faced by early-career neurorehabilitation professionals in India, while suggesting policy-level, academic, and structural solutions.

METHODS

Study Design

This study adopts a **narrative review and qualitative synthesis** approach to explore the challenges and barriers faced by early-career neurorehabilitation professionals in India. Given the limited availability of large-scale empirical data in this domain, a narrative design allows for the

integration of literature, policy documents, expert opinion, and field observations.

Data Sources

Data were drawn from a combination of peer-reviewed journals, grey literature, policy documents, and personal communications from key stakeholders in the Indian neurorehabilitation ecosystem. The following sources were included:

- **PubMed, Scopus, and Google Scholar** for literature published between 2005 and 2024 on neurorehabilitation workforce, training, and health systems in India and similar low- and middle-income countries.
- Reports and white papers from the **World Health Organization (WHO), Indian Federation of Neurorehabilitation (IFNR), Rehabilitation Council of India (RCI), and Ministry of Health and Family Welfare.**
- Professional observations and communications from early-career physiotherapists, occupational therapists, speech-language pathologists, and clinical psychologists working in rehabilitation centers, teaching hospitals, and NGOs across urban and rural India.

Keywords used included: *neurorehabilitation workforce India, early-career challenges, rehabilitation training gaps, interdisciplinary rehabilitation, rehabilitation policy India, and rehabilitation education.*

Inclusion Criteria

- Studies, commentaries, and reports focused on neurorehabilitation practice, education, and workforce issues in India.
- Articles or documents that mentioned allied health professional roles within neurorehabilitation (e.g., physiotherapy, occupational therapy, speech therapy, psychology).
- Perspectives from early-career professionals (defined as <7 years post-graduation).

Exclusion Criteria

- Articles unrelated to neurorehabilitation (e.g., general rehabilitation not addressing neurological conditions).
- Editorials or letters without substantive content on workforce or training.
- Literature focused solely on high-income countries without relevance to Indian or LMIC contexts.

Data Synthesis

Data were grouped thematically into key domains of challenge:

1. **Educational and training gaps**
2. **Mentorship and professional identity**
3. **Job market and economic challenges**
4. **Interdisciplinary collaboration**
5. **Policy invisibility and structural inequity**

Each domain was analyzed qualitatively to identify recurring patterns, contradictions, and context-specific challenges. These findings were corroborated through expert inputs from academic faculty, rehabilitation directors, and postgraduate trainees from 5 leading neurorehabilitation centers in India.

Ethical Considerations

This manuscript did not involve human subjects research or patient data. However, professional insights and experiences were obtained with informed verbal consent from individuals quoted or referenced anonymously in the discussion. The goal was not to conduct interviews, but to reflect the lived professional reality with accuracy and integrity.

RESULTS

From the narrative review and qualitative synthesis, five major themes emerged as core challenges affecting early-career neurorehabilitation professionals in India:

1. Inadequate Structured Training Programs

Across disciplines, there is a lack of standardized, competency-based postgraduate training specifically tailored to neurorehabilitation. Undergraduate programs offer limited exposure to real-world neurological case management, and interdisciplinary training remains almost absent. Most therapists enter the workforce underprepared for the complex demands of neurorehabilitation practice [5,6].

2. Limited Mentorship and Career Pathways

Few formal mentorship programs exist for new professionals. Unlike medical residencies or nursing fellowships, neurorehabilitation therapists often navigate their roles without clinical supervision or structured career planning. Junior staff frequently report role confusion, lack of feedback, and uncertainty about career advancement [3].

3. Fragmentation in Interdisciplinary Practice

Though neurorehabilitation is inherently team-based, early-career professionals face rigid discipline-specific hierarchies and turf-related tensions. Coordination between physiotherapists, occupational therapists, speech therapists, and psychologists is often poorly integrated, affecting both learning and patient outcomes [7].

4. Economic Disparities and Job Insecurity

Entry-level salaries for therapists in neurorehabilitation remain low, particularly in public institutions and NGOs. Many young professionals work on contract with limited job security, few benefits, and no clear promotion track. Opportunities are largely confined to urban settings, leading to saturation in cities and scarcity in rural regions [8,9].

5. Neglect in Policy and Institutional Support

National health policies, including Ayushman Bharat and district disability programs, rarely mention neurorehabilitation professionals by name. There is no national registry or centralized body overseeing quality assurance or career standards across disciplines in rehabilitation. This results in poor visibility and limited advocacy for professional growth [10,11].

DISCUSSION

The findings highlight a critical gap between the increasing demand for neurorehabilitation services and the systemic support provided to the early-career workforce expected to deliver that care.

Educational Deficiencies Undermine Competence

The lack of specialized neurorehabilitation curricula at undergraduate and postgraduate levels leads to a fragmented learning process. Training often focuses on general rehabilitation or orthopedic practice, leaving new professionals ill-equipped to manage complex cases of stroke, traumatic brain injury, or neurodevelopmental disorders [12]. Recent global guidelines emphasize competency-based, patient-centered education, which remains underdeveloped in the Indian context [9].

Absence of Mentorship Fuels Attrition

Without formal mentorship structures, early-career therapists often struggle in isolation. A study by Dhamija et al. (2017) noted that young professionals reported the highest levels of burnout and role ambiguity in neurorehabilitation services [3]. Mentorship is not just about clinical skill-building—it's about professional identity, emotional resilience, and long-term retention.

Interdisciplinary Collaboration is Theoretically Encouraged, Practically Weak

While textbooks advocate interdisciplinary rehabilitation, real-world execution remains poor. Inadequate case conferencing, siloed departments, and uneven power dynamics reduce team effectiveness. Early-career professionals often learn to “stay in their lane” rather than participate in shared goal-setting and problem-solving [13].

Economic Stressors Push Talent Away

Neurorehabilitation is not just emotionally demanding—it's economically undervalued. Early-career professionals routinely report salaries that do not reflect their workload, leading to financial instability and disillusionment [5]. Many shift to other specialties or emigrate in search of better conditions [10].

Policy Invisibility Stalls Reform

Rehabilitation services have gained attention globally through WHO's Rehabilitation 2030 and Intersectoral Global Action Plan (IGAP) [11]. However, in India, neurorehabilitation is not recognized as a formal subspecialty in most regulatory frameworks. Without policy recognition, funding, accreditation, and workforce planning remain fragmented. Early-career professionals are caught in a system that neither recognizes their contribution nor plans for their future [13,14].

CONCLUSION

India's neurological disease burden is among the highest in the world, yet the systems meant to support those delivering neurorehabilitation remain underdeveloped. This mismatch is starkly evident in the professional journey of early-career neurorehabilitation specialists. Despite their central role in post-acute care, young physiotherapists, occupational therapists, speech-language pathologists, and psychologists face a web of barriers: limited access to structured training, absence of interdisciplinary mentorship, poor remuneration, fragmented teamwork, and a glaring lack of visibility in policy frameworks. These challenges are not just personal career roadblocks—they compromise the quality and reach of neurorehabilitation across India. Talent is lost, innovation is stifled, and underserved communities remain without care. What's needed is a deliberate, system-wide shift: standardized training pathways, robust mentorship models, interdisciplinary capacity-building, fair compensation structures, and policy-level recognition of neurorehabilitation as a core health service. If India is to meet the WHO Rehabilitation 2030 targets and address the long-term needs of its neurological population, investing in its early-career neurorehabilitation workforce is not optional—it's essential.

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CITE THIS ARTICLE:

Someshwar H, Surya N, Someshwar J, Early-Career Neurorehabilitation Professionals in India: Challenges, Barriers, and the Road Ahead *J Ind Fed NR*, 2025, March 2025; 1 (2): 37-41.