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LACK OF MULTIDISCIPLINARY COLLABORATION IN STROKE REHABILITATION IN PAKISTAN: A CALL FOR INTEGRATED CARE MODELS

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INTRODUCTION

People who have experienced stroke in Pakistan may encounter significant obstacles beyond the acute period of therapy. While emergency therapies like thrombolysis and acute hospital care can save lives, rehabilitation programs are frequently scattered and inadequate to tackle the complicated implications of a stroke. These implications go beyond motor disability to include communication difficulties, cognitive dysfunction, emotional discomfort, and decreased engagement in everyday life. Clinical experience as a neuromuscular physical therapist in hospital settings has shown that patients can gain motor function while still struggling with speech impairment, cognitive deficiencies, depression, or social isolation. These consequences indicate deficiencies in rehabilitation services, not limitations in recovery capacity.

This position contends that interdisciplinary stroke rehabilitation should become a routine part of stroke care in Pakistan. The debate examines available research, identifies challenges unique to the Pakistani healthcare sector, assesses frequent disagreements, and offers actionable steps to improve rehabilitation systems. The ultimate objective of stroke care should go beyond survival to meaningful rehabilitation and enhanced quality of life.

EVIDENCE FROM INTERNATIONAL GUIDELINES AND STUDIES

Coordinated interdisciplinary therapy for stroke survivors is routinely supported by international recommendations. The American Heart Association and American Stroke Association suggest multidisciplinary rehabilitation after stroke teams made up of doctors, physiotherapists, occupational therapists, speech-language pathologists, psychologists, nurses, and social workers to maximize recovery outcomes.¹ In order to address motor, cognitive, and functional deficits, the National Clinical Guideline for Stroke suggests organized multidisciplinary therapy programs that include many hours of coordinated rehabilitation each day.²

Similarly, the National Institute for Health and Care Excellence recommends that stroke units be directed by multidisciplinary teams capable of providing integrated rehabilitation that addresses physical, communicative, cognitive, and psychosocial requirements.³ Evidence from worldwide stroke unit studies suggests that integrated rehabilitation teams are linked with improved functional recovery, shorter hospital stays, fewer problems, and greater long-term independence than fragmented treatment.

PAKISTANI EVIDENCE: PROMISING DATA WITH IMPORTANT LIMITATIONS

Studies on rehabilitation following a stroke in Pakistan are sparse, but they give helpful information. Babur et al. carried out qualitative research to investigate the views of rehabilitation professionals about multimodal stroke care. The study found that efficient interprofessional communication, role clarity, shared goals, and enough resources are all required for successful interdisciplinary collaboration.⁴ One significant restriction was the tiny qualitative sample size. Khunsha et al. conducted a single-center randomized controlled experiment to compare multimodal rehabilitation (physiotherapy, occupational therapy, and speech therapy) with traditional physiotherapy-focused treatment for stroke patients aged 40-60 years.⁵ At four months, the intervention group showed improvements in balance, fine motor function, swallowing, and speech. The study's limitations were a small sample size and a short follow-up time.

Kanwal et al. conducted a cohort case series examining outcomes of stroke patients getting comprehensive rehabilitation compared to historical controls. Patients handled by a multidisciplinary team had better functional results. The nonrandomized design and single-center arrangement restrict generalizability.⁶ Naz et al. conducted a randomized controlled experiment to evaluate the effectiveness of motor relearning programs for subacute stroke patients in terms of balance and mobility results.⁷ While gains in mo

recovery were found, the intervention focused on only one area of rehabilitation, Malik et al. conducted a situational study of stroke care in Sindh province and discovered that only 20.6% of hospitals had specialized stroke units, with many patients lacking access to speech therapy or cognitive rehabilitation services.⁸

The majority of these studies are single-center and have limited sample sizes, despite the fact that they point to the advantages of interdisciplinary rehabilitation. To provide more solid evidence for the creation of national policy, larger multicenter studies are required.

BARRIERS TO MULTIDISCIPLINARY STROKE REHABILITATION IN PAKISTAN

Multidisciplinary rehabilitation is not widely implemented in Pakistan due to a number of structural obstacles.

Workforce limitations: Clinical psychologists, occupational therapists, neuropsychologists, and speech-language pathologists are still hard to come by in many areas, especially rural ones. The provision of comprehensive rehabilitative services is limited by this limitation.

Infrastructure constraints: Many hospitals lack tailored stroke rehabilitation centers or adequate room for interdisciplinary therapy sessions. Resources are frequently focused on acute care facilities instead of post-stroke rehabilitation centers.

Coordination challenges: Healthcare workers are usually taught using discipline-specific frameworks, with little focus on interprofessional teamwork. This may decrease prospects for collaborative care planning.

Financial barriers: The majority of rehabilitation treatments are paid for out of pocket. Patients who need interdisciplinary care face obstacles due to limited insurance coverage.

Limited awareness: Many patients and caregivers remain unaware of the benefits of comprehensive rehabilitation, resulting in decreased therapy involvement and delayed presentation.

ECONOMIC CONSIDERATIONS

Multidisciplinary stroke therapy has been proved in numerous foreign health systems to minimize long-term impairment, shorten hospital stays, and increase independence for stroke survivors. These results may lower long-term healthcare expenses and

caregiver strain. However, Pakistan-specific economic assessments assessing the cost-effectiveness of multidisciplinary rehabilitation are currently unavailable.

Future studies should incorporate cost-utility and cost-effectiveness assessments from both the healthcare system and the society level. Such assessments might include disability-adjusted life years, caregiver burden, and productivity loss as evidence for policy choices.

PATIENT AND CAREGIVER ENGAGEMENT

Recovering from a stroke involves more than just clinical results. Patients' and caregivers' active participation in rehabilitation planning can enhance long-term results, satisfaction, and adherence. Rehabilitation routes might be tailored to Pakistan's sociocultural circumstances by including patient viewpoints by conducting group discussions, caretaker education programs, and collaborative service planning workshops.

PRIORITY ACTIONS FOR IMPROVING STROKE REHABILITATION

In light of resource constraints, a number of workable and significant initiatives might improve stroke rehabilitation services in Pakistan.

Establish multidisciplinary stroke teams: The creation of multidisciplinary neurological rehabilitation units of physiotherapists, occupational therapists, speech therapists, and psychologists collaborating with doctors and nurses should be a top priority for teaching hospitals and tertiary care facilities.

Integrate interprofessional education: Interprofessional learning should be included in rehabilitation training programs to encourage teamwork among medical practitioners.

Develop national rehabilitation guidelines: National stroke rehabilitation standards might establish core team structures, standardize care routes, and facilitate coordinated rehabilitation services across medical facilities. Developing community-based rehabilitation initiatives, enhancing worker training, and growing rehabilitation infrastructure are examples of longer-term methods.

Some suggestions for different levels and stakeholders are given in Table 1.

Table 1: Suggestions for Actions

Stakeholder / Level	Actions
	• Include stroke rehabilitation explicitly in national NCD and neurology health strategies.
National / Provincial Policy Makers	• Issue guidelines mandating minimum rehabilitation standards for hospitals (core MDT members, infrastructure, therapy hours). • Institute financial incentives / subsidies or health insurance coverage for comprehensive rehabilitation. • Allocate budget for capacity building (training, equipment).
Academic / Training Institutions	• Revise curricula of physiotherapy, occupational therapy, speech therapy, psychology to include interprofessional education, team-based care, communication skills. • Create fellowships or certification courses in stroke rehabilitation, covering non-motor domains (speech, cognition, mental health). • Culturally adapted interventions. Promote local research into integrated rehabilitation outcomes, cost- effectiveness, culturally adapted interventions.
Hospitals / Rehabilitation Centers	• Establish or designate stroke rehabilitation units, not only in tertiary care and teaching hospitals, but on district and tehsil level hospitals as well with multi-disciplinary teams. • Conduct regular multidisciplinary meetings (assessment, goal-setting, follow up). • Use existing space and staff creatively: cluster therapy sessions, share infrastructure, tele-therapy outreach. • Embed caregiver and family training into rehabilitation plans.
Community / Patient Advocacy	• Public education campaigns to raise awareness of stroke rehabilitation importance (not just “getting up” but speaking, thinking, mental health). • Build community rehabilitation or home-based therapy where hospital access is limited. • Support networks for caregivers and stroke survivors to share experiences and resources.
Monitoring and Research	• Gather local data: functional outcomes, quality of life, caregiver burden • Evaluate pilot programs and scale successful models. • Publish outcomes in local and international journals, to build evidence and attract funding.

EXAMPLES OF THE MULTIDISCIPLINARY REHABILITATION SUCCESS FROM THE AUTHOR'S PRACTICE PERSPECTIVE

The advantages of coordinated treatment are demonstrated by clinical experience from multidisciplinary rehabilitation settings. Patients frequently show gains in mobility, communication, self-care, and the avoidance of complications when physiotherapists, occupational therapists, and speech therapists work together early after a stroke. Delaying the engagement of expert therapists, on the other hand, may result in a slower recovery and more reliance. To illustrate concretely: In Peshawar, while practicing at a spinal cord injury specialized multi-disciplinary clinical setting, we observe that when a physical therapist, occupational therapist, and speech therapist are all involved early after stroke (within one month) in acute stage in collaboration with the medical, surgical & nursing team, patients regain not only mobility but better speech & communication, feeding, self-care and complication-prevention much more effectively. However, often the speech therapist is consulted only later (if at all), cognitive screening is neglected, and psychological support remains absent. This leads to plateauing of recovery, increased dependency, and greater caregiver strain. If the steps above begin to be implemented, we could reduce hospital stay, improve ADL independence, and reduce chronic disability at population level.

WHAT IF WE FAIL TO ACT?

The cost of inaction is steep. Continuing with the status quo means:

- Thousands more stroke survivors will live with avoidable disability.
- Increased caregiver burden and out-of-pocket costs.
- Lost economic productivity: patients unable to return to work or needing lifetime care.
- Worsened disparities: urban areas may gradually improve; rural areas will be left further behind.

CONCLUSION

Pakistan's stroke rehabilitation programs have substantial resource and structural obstacles. However, the research that is now available and clinical experience indicate that improving multidisciplinary teamwork might significantly enhance stroke survivors' quality of life and functional rehabilitation. Improving interprofessional education, creating national rehabilitation guidelines, and giving priority to multidisciplinary rehabilitation teams are doable initial steps toward enhancing stroke care in Pakistan. To turn these suggestions into long-lasting reforms to the health system, further research and policy assistance will be necessary.

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