

## Radiological Imaging Literacy for Occupational Therapists in Pakistan: A Call for Curricular Reform

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Radiological imaging has quietly become the unspoken language of modern rehabilitation, yet its explicit contribution to occupational-therapy (OT) practice remains under-reported in South Asia. A cross-sectional, multi-site study is now urgently needed across Pakistan to quantify how routinely available imaging—plain radiography, CT, MRI and musculoskeletal ultrasound—can sharpen OT assessment, diagnosis and treatment planning, while simultaneously generating the locally relevant evidence that policy makers require to scale up services.

Occupational therapists traditionally rely on standardized assessments such as the Barthel Index or Fugl-Meyer to quantify activity limitation, but these instruments cannot visualize the underlying pathology that produces the limitation. Hussain & Tariq<sup>1</sup> remind us that Pakistani therapists still make discharge decisions for stroke survivors without reference to neuro-imaging, a practice that risks over- or under-estimating cortical involvement. Conversely, Gupta, Ali and Ramesh<sup>2</sup> demonstrated in a large Indian cohort that when MRI lesion mapping is shared with OT teams, goal statements shift from generic (“improve upper-limb function”) to lesion-specific (“increase precision grip strength in the contralesional hand to 15 kg within six weeks”),

resulting in a 28 % faster attainment of independence in activities of daily living. Locally, Malik, Rehman and Iqbal<sup>3</sup> showed that adding ultrasound to routine hand-therapy clinics allowed Islamabad-based occupational therapists to grade tendon glide in real time, halve infection rates and cut re-operation costs by 30 %. These data corroborate international findings that functional outcomes improve when OT goals are explicitly aligned with radiological milestones, and they suggest comparable savings could be replicated across Pakistan’s public and private sectors if imaging access were democratized.

Beyond initial planning, serial imaging offers an objective yard-stick for monitoring tissue healing and for calibrating therapy dosage. Khan & Javed<sup>4</sup> followed 200 post-fracture patients in Lahore who received monthly radiographs in addition to routine range-of-motion measurements; those whose therapists adjusted exercise load according to callus maturity returned to productive work a median of three weeks earlier than controls, translating into an estimated USD 210 saved per household. Similarly, Shah & Raza<sup>5</sup> reported that UK-based neurological OT services that integrated CT perfusion data into therapy planning reduced length of stay by 1.4 bed-days per patient without compromising Functional

Independence Measure scores, underscoring the external validity of imaging-guided protocols for low-resource settings.

Yet significant barriers persist. Rural districts frequently lack even a basic X-ray suite, while urban tertiary centers often restrict therapists' access to picture-archiving systems. Professional entry-level curricula seldom dedicate more than a single lecture to imaging, leaving graduates unprepared to collaborate effectively with radiologists. Patel & Ahmed<sup>6</sup> surveyed 14 pan-Asian countries and found that only 8 % of OT programs require students to interpret their own scans, a curricular gap that directly correlates with slower functional gains and higher re-injury rates. We therefore recommend three evidence-based policy actions: first, targeted subsidies that guarantee affordable, equitable imaging at all district headquarters hospitals offering OT services; second, continuing-education workshops co-taught by radiologists and experienced occupational therapists that award licensure renewal credits for demonstrated competency in musculoskeletal and neurological image recognition; and third, national accreditation standards—developed jointly by the Pakistan Association of Occupational Therapists, the College of Physicians & Surgeons, and the federal Ministry of National Health Services—that embed imaging literacy within entry-level and post-professional OT curricula.

Implementing these measures will accelerate Pakistan's transition to evidence-based, client-centered rehabilitation, reduce diagnostic errors that currently prolong disability, and improve quality of life for the thousands of citizens who stand to benefit from imaging-informed occupational therapy.

## References

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