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PERSPECTIVE

Preparing for the inevitable earthquake risk in Dhaka: A physiatrist's perspective

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Dhaka, a densely populated megacity, faces a real and potentially catastrophic earthquake risk. Even moderate earthquakes have caused fatalities, highlighting vulnerability to larger events. Unplanned urbanisation, vulnerable infrastructure, and seismic proximity increase its risk of mass casualties. Studies show low seismic risk perception and inadequate household preparedness, revealing critical gaps in public awareness and institutional readiness [1]. Bangladesh's disaster preparedness focuses on mortality reduction and emergency response, with limited attention to injury, disability, and long-term functional loss, reflecting a critical deficiency from a physiatrist's perspective. This study examines the rehabilitation preparedness in Dhaka and proposes a practical, physiatrist-led framework for integrating rehabilitation into disaster response. Recent earthquakes in and around Dhaka (2017–2025), including moderate events up to magnitude 6.2 with reported deaths, injuries, and structural damage, demonstrate ongoing seismic activity and highlight the city's vulnerability, although these events do not represent probabilistic risk projections.

Geographically, Bangladesh lies close to the Indian–Eurasian plate boundary, with several active fault systems capable of producing large earthquakes. Seismological data indicate that Dhaka is at risk from both distant major events and moderate-to-severe earthquakes originating near or beneath the city. In this context, earthquake impacts extend far beyond immediate mortality. Evidence from global disasters shows that many survivors sustain fractures, spinal cord and traumatic brain injuries, crush injuries, amputations, and soft-tissue trauma, leading to substantial long-term disability without early rehabilitation. Although Bangladesh-specific data are limited, findings from disaster-affected settings such as the 2017 Bangladesh landslide indicates substantial unmet rehabilitation needs and system constraints [2]. Similar patterns are likely in Dhaka due to urban and health system vulnerabilities, which may overwhelm response and, without integrated rehabilitation, convert survivable injuries into long-term disability [3]

Physiatry plays a central yet often overlooked role in disaster response. Physiatrists focus on function, independence, and participation beyond the acute phase of injury [4]. In disaster settings, physiatrists serve as team leaders, multidisciplinary coordinators, policy advocates, and liaisons between acute care and long-term functional recovery. Early rehabilitation during acute care reduces complications and, as demonstrated in earthquakes in Nepal and Türkiye, improves functional outcomes and reduces long-term disability. Key interventions including mobilisation, positioning, pain management, and timely provision of assistive devices further enhance recovery [5]. Without physiatrist-led coordination, these opportunities are often missed.

At present, rehabilitation preparedness in Dhaka remains inadequate. Disaster response frameworks prioritise emergency surgery and critical care but rarely incorporate functional assessment or rehabilitation triage. Most tertiary hospitals lack surge-ready rehabilitation beds, equipment, and trained multidisciplinary teams, while access to physiotherapy, occupational therapy, and assistive

Key messages

Dhaka's earthquake preparedness remains survival-focused, neglecting the predictable burden of injury, disability, and longstanding functional loss. Integrating physiatrist-led rehabilitation into disaster planning, acute response, and recovery is essential to prevent avoidable disability, protect vulnerable populations, and build a resilient, humane health system for Bangladesh.

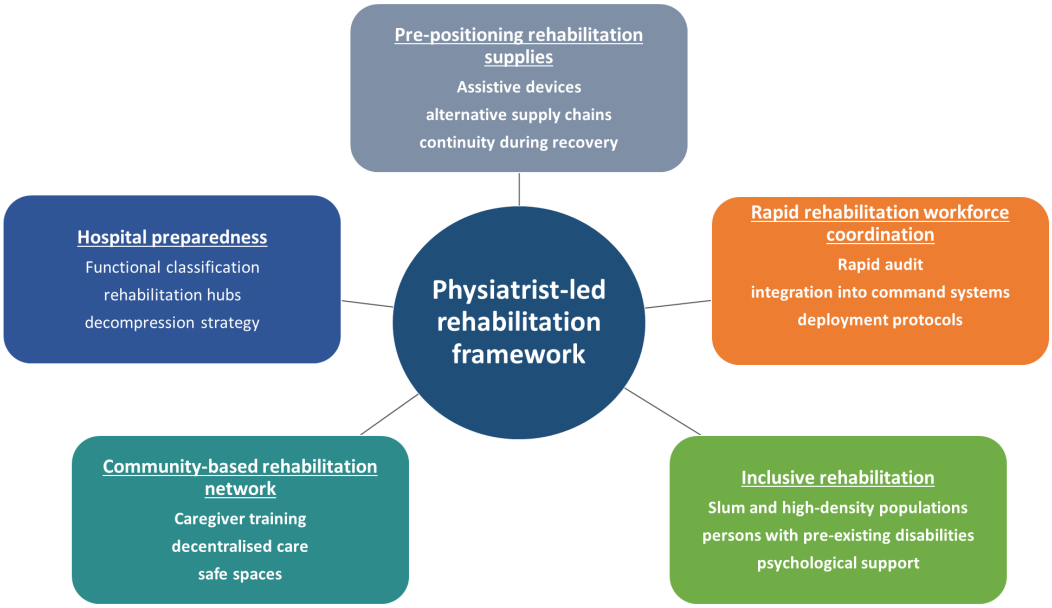

Figure 1 Physiatrist-led rehabilitation preparedness framework for earthquake response in Dhaka

technology remains limited at district and upazilla levels. The rehabilitation workforce is insufficient and unevenly distributed, making rapid deployment during mass casualty events challenging. Available evidence suggests that workforce distribution, bed capacity, and assistive technology access remain limited, posing significant challenges for surge response [6]. A structured rehabilitation preparedness framework is proposed in Figure 1.

Equally concerning is the vulnerability of people with pre-existing disabilities. Individuals who depend on wheelchairs, prostheses, orthoses, or caregivers face heightened risks of injury, displacement, and loss of independence during earthquakes. Disaster preparedness plans seldom address accessible evacuation, continuity of rehabilitation care, or replacement of assistive devices, contradicting principles of disability-inclusive disaster risk reduction and further marginalising this population.

Integrating rehabilitation into national disaster policies and emergency medical team frameworks is essential for system-level implementation. As a major earthquake in Dhaka remains inevitable, preparedness must address the predictable surge of disability. A physiatrist-led approach can reduce suffering and support resilient, function-focused health systems.

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Conflict of interest

We do not have any conflict of interest.

Data availability statement

We confirm that the data supporting the findings of the study will be shared upon reasonable request.

AI disclosure

We take full responsibility for the content of this manuscript. ChatGPT (version 5.2; OpenAI) was used solely for assistance with English language editing and sentence clarity. Prompts were used to improve grammar, vocabulary, and structure where needed. All AI-generated suggestions were critically reviewed, revised, and approved by the authors to ensure accuracy, originality, and integrity of the work.

Supplementary file

None

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