Validation and Test Retest Reliability Testing of The Telematic Fugl Meyer Assessment Scale - Upper Extremity (TFMA-UE)

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Introduction: Stroke remains a significant global health challenge, contributing to high rates of mortality and long-term disability. The Telematic Fugl Meyer Assessment Upper Extremity (Telematic FMA-UE) scale is a remote-friendly adaptation of the traditional FMA-UE, allowing for the assessment of sensorimotor impairments through telemedicine platforms. However, the absence of a validated Hindi version hinders its utility among the over 609 million Hindi speakers worldwide. Addressing this gap is essential to expanding access to remote stroke rehabilitation for Hindi-speaking populations.

Aim: This study seeks to translate the Telematic FMA-UE scale into Hindi, validate the translated version, and examine its test-retest reliability in stroke patients who primarily speak Hindi.

Materials and Methods: Permission from the original authors of the scale will be obtained prior to initiating a structured translation process. The scale will be translated into Hindi independently by bilingual professionals with expertise in healthcare and linguistics. The translations will then be harmonised into a unified version and back-translated into English to verify accuracy and equivalence. Content validation will involve an expert panel using the Delphi method to calculate Item-level Content Validity Index (I-CVI) and Scale-level Content Validity Index Average (S-CVI/Ave). The prefinal version will be tested on a small group of Hindi-speaking stroke patients to ensure its comprehensibility and cultural relevance. Test-retest reliability will be measured by administering the scale twice at a fixed interval, with consistency assessed through Intraclass Correlation Coefficients (ICCs) and Bland-Altman plots.

Results: The Hindi adaptation of the Telematic FMA-UE scale is anticipated to exhibit strong content validity, reflected by high I-CVI and S-CVI/Ave scores. Additionally, reliability testing is expected to demonstrate robust ICC values and consistent results across assessments, as visualised through Bland-Altman plots.

Conclusion: The validated Hindi version of the Telematic FMA-UE scale will serve as a reliable tool for tele-rehabilitation, improving accessibility and supporting more effective rehabilitation for Hindi-speaking stroke patients.

Keywords: Hindi adaptation, Remote rehabilitation, Stroke recovery, Upper limb