

Advancing medication adherence in India: Validating *MedpeR*[®]- your personal Medicinal *helpeR*, a novel assistive technology focused on the elderly - A multicenter randomized controlled trial

Rohan Tripathi¹, Shambo Samrat Samajdar², Arkapal Bandyopadhyay³, Santanu Tripathi⁴

¹Inovocare Healthsoft Solutions Pvt Ltd, KOLKATA, India. ²School of Tropical Medicine, KOLKATA, India. ³All India Institute of Medical Sciences, Kalyani, India. ⁴Jagannath Gupta Institute of Medical Science and Hospital, KOLKATA, India

Abstract

Aim: To validate *MedpeR*[®], a novel assistive device(*supported by Govt-of-India*), for improving medication adherence among the Indian urban elderly population.

Objective: To compare treatment adherence rates among device-assisted persons with those in routine practice.

Methods: A local Ethics-Committee-approved 6-month randomized, 2-arm, controlled trial(n=30), with subjects aged 65+ with polypharmacy and comorbidities, was done. In the experimental arm, 15 elderly chronic stable patients used *MedpeR*[®], a Smart Pillbox enabling anxiety and error-free timely medication consumption, without requiring Wi-Fi or a Smartphone, post setup, after due sensitization. The control-arm had patients continuing the consumption of medication following the routine practice. The initial 2 months were the baseline and the next 4 months involved the use of *MedpeR*[®]. Adherence data from MMAS and self-reporting techniques (*with vernacular translation when required*) and ethical digital medication data from *MedpeR*[®] were also analysed.

Results: We recorded a significant improvement in adherence rates in the device group. Improved health outcomes and reduced anxiety related to medication errors were observed.

Discussion: This study has significant implications for improving medication adherence practices. *MedpeR*[®] has unique Internet-of-Things connectivity benefits with minimal pecuniary and infrastructural requirements, that can revolutionize digital health in emerging economies with grassroots penetration. It incorporates medication adherence data with patient demographics in the form of EMR/EHR in an ethical manner and can empower agencies like medical insurance, clinical research, etc.

Conclusions: This research contributes to the overall health and well-being of the elderly population, emphasizing the importance of tailored interventions to address medication non-adherence.