ADVANCING MEDICATION ADHERENCE IN INDIA: VALIDATING MEDPER® A NOVEL ASSISTIVE TECHNOLOGY FOCUSED ON THE DIABETIC AND ELDERLY - A MULTICENTER RANDOMIZED CONTROLLED TRIAL

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Background: Elderly individuals with diabetes often face challenges in medication adherence due to polypharmacy, comorbidities, and technology barriers. Smart pillboxes like MedpeR® offer a promising solution for promoting anxiety-free, error-free, and timely medication intake without the need for Wi-Fi or smartphones after initial setup.

Aim and Objective: To validate MedpeR®, a novel assistive device (supported by Govt.-of-India), for improving medication adherence among the Indian diabetic and elderly population. To compare treatment adherence rates among device-assisted persons with those in routine practice.

Methodology: A local Ethics-Committee-approved, 6-month randomized, 2-arm controlled trial (n=30) will be conducted. Diabetic subjects aged 65 and above will be randomized into two groups. The experimental arm (n=15) will use MedpeR® after appropriate sensitization, while the control group (n=15) will continue routine medication practices. The first two months will serve as the baseline period, followed by four months of intervention. Medication adherence will be evaluated using the Morisky Medication Adherence Scale (MMAS), self-reporting methods (with vernacular translation if needed), and ethical digital medication data captured by MedpeR®.

Results: We anticipate a significant improvement in adherence rates in the device group. Improved health outcomes and reduced anxiety related to medication errors are to be observed. This study has significant implications for improving medication adherence practices. MedpeR® has unique IoT 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 empowers agencies like medical insurance, clinical research, etc.

Conclusion: This research contributes to the overall health and well-being of the diabetic and elderly population, emphasizing the importance of addressing medication non-adherence.

Keywords: Diabetes, medication, MMAS