631-P - Increasing Sleep Duration among Short-Sleeping Type 2 Diabetes Patients via mHealth—A Pilot Randomized Controlled Trial

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Introduction and Objective: Sleep duration is associated with glycemic control, but causality is unclear. Our mHealth intervention promoted earlier bedtime to assess impact on sleep duration and glycemic control.

Methods: We conducted a 12 week single-blind, two-arm RCT with 70 short-sleeping T2D patients in Japan using actigraphs and sleep diaries. The key eligible criteria

included short sleep duration (≤ 6 h), elevated HbA1c levels (≥ 7.5 %), and no sleep disorders. The Intervention group received Theory of Planned Behavior-based interventions targeting earlier bedtimes using achievable bedtime goal setting and feedback.

Results: The arms were well matched, except for BMI (Intervention 24.7 vs. Control 26.6 kg/m2). The Intervention demonstrated a significant 32.8 minute improvement in mean sleep duration (p = 0.004) and suggestive but not significant improvements in BMI (0.24, p = 0.17]) and HbA1c (0.11, p = 0.51). The pooled SD of HbA1c change, at 0.70, exceeded our prior estimate of 0.41.

Conclusion: The intervention improved sleep duration, piloting effective methods. The improvements in BMI and HbA1c, while not statistically significant, are suggestive of a causal link. High pooled SD of change in BMI and HbA1c suggests the need for follow up with larger sample sizes.