ARTIFICIAL INTELLIGENCE POWERED COACHING FOCUSED ON ROUTINE PHYSICAL ACTIVITY TO ACHIEVE DAILY ACTIVITY TARGETS IN SUBJECTS WITH TYPE-II DIABETES

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Objective: Practitioners in South Asia advise people with diabetes (T2DM) to undertake planned or recreational physical activities for achieving the AACE recommended 30 min of daily or 150 min of weekly activity. However, studies have shown that fewer than 10% Indians habitually engage in planned or recreational physical activity. We attempted a different approach to achieve physical activity targets through increasing daily routine activity by equipping participants with a smartphone app that automatically tracks their physical activity and coaches the users using an artificial intelligence (AI) powered health coach chatbot.

Methods: Participants were tracked and coached for increasing routine physical activity using the Wellthy ABSTRACTS – Late Breaking - 306 - Diabetes App, a smartphone application prescribed by treating physicians, that uses the phone's activity sensor to track the duration of time participants were active. This intervention was incremental and supportive to the existing standard of care recommended by the treating physician. For this study, we analyzed de-identified data from subjects who had used the app for at least 21 days and had activity tracking data for at least 15 days.

Results: One seventy-eight participants (Mean Age : 37.3 yrs & 59.6% Males) were tracked for an average of 28.3 days (95% CI: 27.9 - 28.8) resulting in 7,316 persondays and 1,451 person-weeks of activity tracking. Mean weekly active time (MWAT) was 256 min (95% CI: 224 - 289) with the median of 189 min (25th-75th: 116 - 330 min). Mean daily active time (MDAT) recorded was 49 min (95% CI: 43 - 55) with a median of 39 min (25th- 75th: 24 - 60 min). MDAT was significantly higher for males (54.6 min) than females (40.4 min; $p=0.01$). In general, active time was higher on weekdays (mean: 52 min) versus weekends (mean: 48.3, $p=0.005$). The daily target of 30 minutes of activity was achieved on 55.6% of person-days (n=4069, 95% CI-54.5 -56.8) while the weekly target of 150 minutes of active time was achieved in 55.9% of person-weeks (n=811; 95%CI-53.3- 58.5).

Discussion: Participants in the study recorded routine activity at par with AACE recommended time targets for daily and weekly activity. Participants also achieved daily and weekly activity targets frequently.

Conclusion: This early data demonstrates the potential of an AI-powered diabetes management app, focused on coaching and nudging to improve routine daily physical activity, as a promising prescriptive tool for physicians to support people with T2DM in urban South Asia to achieve their physical activity targets.