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Pilot Evaluation of a Digital Dietician – A Novel Smartphone Application

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Introduction: There is a global need for individualized education for diabetes management and prevention. Dietitian consultation achieves better outcomes than primary care alone, but diet counseling for sustained change is costly. Widespread affordable smartphones provide scalable platforms for achieving and maintaining lifestyle changes, and mobile interventions yield high compliance and capacity for personalized programming and feedback. The primary study aim was to determine whether the dietary recommendations from the Project Nourish application (app) were comparable to those of registered dietitians in terms of safety, practicality, nutrition, health, and calorie control.

Methods: Two dietitians analyzed dietary recommendations from the app over 4 months. 12 scoring matrices were analyzed covering a total of 1,950 dietitian assessments. The maximum score for a recommendation was 25 points—five points each for safety, practicality, nutrition, health, and calorie control. The higher the score, the closer the application's recommendation to the dietitian's.

Results: The overall composite score of the application's recommendations was 17.9 out of 25, scoring highest in the safety category, averaging 4.92 out of 5 points ($SD \pm 0.35$), followed by practicality (4.00 ± 1.39), health (3.29 ± 1.09), and nutrition (3.08 ± 1.13), with calorie control receiving the lowest scores (2.65 ± 1.35).

Discussion: The app's recommendations averaged 72% comparability to those of dietitians in terms of safety, practicality, health, nutrition, and calorie control. While there is room for improvement especially in terms of calorie control, this and other nutrition applications for mobile devices have exciting potential and offer a framework for evaluation.