Effectiveness of a Diabetes Program based on eHealth on capacity building and quality of care in type 2 diabetes: a pragmatic quasi-experimental study

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Health systems in Latin America face many challenges in controlling the increasing burden of diabetes. Digital health interventions (eHealth) are a promise for the provision of care, especially in developing countries where mobile technology has a high penetration. This study is aimed to evaluate the effectiveness of the implementation of a Diabetes Program (DP) that includes eHealth interventions to improve the quality of care of patients with type 2 Diabetes (T2DM) in a vulnerable population attending the public primary care network at 12 and 24 months. Materials and methods: A quasi-experimental pre-post uncontrolled study was conducted in 19 primary care centers and hospitals in the province of Corrientes, Argentina. We included persons with T2DM, age $\geq 18$ years with access a mobile phone. The multicomponent intervention included a mobile app with a diabetes registry and a clinical decision support tool for providers and a text messaging intervention for patients. Results and discussion: 1065 were included, 72.76% had less than 12 years of formal education and 53.52% without health coverage. Comorbidities were hypertension (60.85%) and overweight/obesity (88.16%). During follow-up there was a significant increase in the proportion of T2DM who underwent laboratory check-ups (HbA1c 20.28% - 64.42%; $p<0.01$) and foot exams (62.15% - 87.25%; $p<0.01$). No changes were observed at 12 and 24 months in the proportion of T2DM with poor metabolic control. The proportion of patients with uncontrolled blood pressure ($\geq 140/90$ mmHg) decreased from 47.25% at baseline to 30.85% at 24 months in those with a follow-up visit. Conclusion: The DP was innovative by integrating eHealth interventions in the public primary care level. The study showed improvements in quality indicators related with diabetes care processes and in blood pressure control.