CONFERENCE ABSTRACT

mHealth self-management solutions for type 2 diabetic patients: The DIALCAT Project
ICIC20 Virtual Conference – September 2020

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Background:

Type II Diabetes (T2D) represents a heavy social and economic burden worldwide, not only because of the direct consequences of the pathology but also because it represents a risk factor for the development of dementia and Alzheimer disease (AD).

Solutions based on Information and Communication Technologies (ICT) devoted to T2D self-management have shown great potential; among them, mHealth -apps and web-based platforms- has proliferated enormously last years. However, the adoption of these solutions by T2D patients is still poor and imposes several barriers.

Objectives:

With the aim of improving adherence to treatment among T2D patients, and reducing health adverse events and AD conversion, the DIALCAT project is carrying out an interventional multicenter 3-arms RCT (ClinicalTrials.gov Identifier:NCT03578991, funded by FEDER: COMRDI15-1-0024)

Methods:

T2D patients (N=174) with Mild Cognitive Impairment (MCI) have been randomized to: 1)Treatment as usual (TAU) (n=58), 2)TAU+Smart Pill Dispenser (SPD) with remote support (n=58), 3)TAU+SPD+web-based platform with interactive support, periodic monitoring and feedback on their metabolic control and how to improve it (n=58).

Prior to interventions, SPD and web-based platform requirements were collected in a convenience sample of professionals and patients representing prototypical final end-users, using beta versions of these two ICT solutions. Throughout the RCT development, multicenter servility and acceptability studies will be carried out too, in a representative number of patients from the RCT sample.

Intervention will last 12 months. All patients will be assessed by a multidisciplinary team baseline, at 4 (telephonically), 9 and 12 months (face-to-face). Main outcome will be cognitive functioning assessed with the Repeatable Battery for the Assessment of Neuropsychological Status. As secondary outcomes, incidence of dementia diagnosis and rate of conversion to AD according to NIA-AA criteria will be considered. Data on other

clinical (APOE, HbA1c), functional (gait speed, independent living, physical performance) and psychosocial factors (i.e., perceived social support, depression, well-being, etc.) will be collected too.

The primary hypothesis is that the progression of MCI to AD will be greater in Group 1 (TAU), followed by Group 2 (SPD) and, by last, Group 3 (SPD +web-based platform)

Results:

Baseline description of the sample and partial results on 4-months follow up will be available by January 2020 and presented at the conference for the first time, together with a qualitative report on the implementation of the technological solutions.

Discussion & conclusions:

The DIALCAT project will serve to improve knowledge about mHealth features and functionalities that are acceptable and useful for T2D patients. Besides, DIALCAT will provide preliminary data on the effectiveness of these solutions to foster adherence to treatment and to delay conversion to dementia or AD in a sample of patients with MCI.

Limitations & suggestions for future research:

A higher number of patients must be recruited and longer follow-up assessments must be planned to better comprehend the potential long-term effects of mHealth solutions for better self-management among T2D patients.

Lessons learned:

We expect that DIALCAT will fill the gap in evidence regarding the effectiveness of technological solutions to control T2D, and their impact on cognitive decline and dementia.