Background and aims: Evidence is required to assess the impact of long-term telemedicine use in treatment of patients with type 2 diabetes mellitus (DMT2). The aim of the present study was to examine the impact of a long-term telemonitoring program for patients with DMT2 on glycemic control, health-related quality of life (HRQOL), physical activity and compliance with the Mediterranean diet compared to usual care. Clinical trial registration number: NCT01498367

Materials and methods: In the Greek pilot of a prospective, randomised, single-blinded, multicenter, one year study 154 patients with DMT2 capable to use the telemonitoring device, with an HbA1c > 55 mmol/mol (7.0 % according to NGSP) were studied after they were randomly assigned in the telemonitoring group (IG, N=74) and in the control group (CG), (N=80) and having signed the informed consent form (Image 1). In the IG group patients’ blood glucose profiles were collected weekly using a mobile phone platform (Image 2), for a period of one year. Allocated health professionals provided by phone the appropriate counseling on lifestyle and medication changes when required (Image 3). Patients in (CG) group received usual care with face-to-face consultations. HRQOL was assessed using a generic (SF36v2) and a disease-specific questionnaire, the Problem Areas in Diabetes (PAID) scale. Physical activity was assessed using the self-administered short form instrument, International Physical Activity Questionnaire (IPAQ) and the compliance with the Mediterranean diet using the Mediterranean Diet Quality Index (KIDMED) adapted for Greek adults.

Results: The table in the image 4 presents the demographics while the table in the image 5 shows the outcome of the variables studied in both groups. A greater reduction in HbA1C was observed in the IG compared to the CG at the end of the study. There was a statistically significant improvement in the generic HRQOL in the MCS, in the disease specific HRQOL and the physical activity in the IG compared with the CG, but there was no improvement in KIDMED in neither of the two groups. Using linear regression analysis, no significant contribution to the reduction of HbA1C level was proven due to patients demographics regarding age (R2 0.099, p=0.103), gender (R2 0.061, p=0.316), level of education (R2 0.034, p=0.572), prior use of computer, (R2 0.062, p=0.309), prior use of mobile phone (R2 0.005, p=0.406).

In the image 6 ancillary analysis of the outcomes is presented.

Conclusion: Our preliminary results indicate that in patients with DMT2, home telemonitoring is more effective than usual care in improving glycemic control with concurrent improvement in patients quality of life and increase of their physical activity. However home telemonitoring does not seem capable to empower patients with DMT2 with to follow a healthier diet.