Introduction: Recently, the prevalence of childhood obesity is increasing significantly. Dietary and physical activity registers are frequently referred to as the “cornerstone” of behavioral weight control programs. Mobile devices such as Personal Digital Assistants (PDAs) are showing their usefulness to facilitate these self-registers. Objective: This study is aimed to analyze and compare the efficiency and feasibility of a PDA and Paper and Pencil (P&P) registers to record dietary and physical activity in a sample of Spanish adolescents with overweight. Methods: Sample was composed by 30 overweight participants aged 9-15 years seeking for obesity treatment. This is a counterbalance study, all participants completing both experimental conditions: PDA and P&P registers. Results: For dietary records, participants filled out more records using P&P than PDA when “total” number of self-registers was considered, but when “complete” records were taken into account, these differences disappeared, and when percentages of “complete” records were analyzed, PDA produced more accurate registers than P&P. For physical activity, PDA produced more records than P&P. PDA was the preferred system. According to participants, the PDA’s strengths are the comfort, easiness to use and to transport. Conclusions: Results showed that P&P produced more incomplete dietary records than PDA. PDA is a reliable system that allows the clinician to be confident in the data recorded. Recently, several applications for mobile devices have been developed, but there are few studies supporting evidence of their efficacy and feasibility in assessment and treatment of childhood obesity. This study tries to provide some evidence in this field.

Keywords
Childhood obesity, Self-monitoring, Information and communication, Mobile devices, eHealth.