

24-hour recall for parent-reporting of children's food intake

Diogo Branco¹, Sérgio Alves¹, Hugo Simão¹, Ana Gomes², Ana C. Pires¹,
Maria Ana Barroso², Joana Sousa³, Luísa Barros², and Tiago Guerreiro¹

¹ LASIGE, Faculdade de Ciências, Universidade de Lisboa
{djbranco,sfalves,hsimao,cdpires,tjguerreiro}@fc.ul.pt

² Faculdade de Psicologia, Universidade de Lisboa
{ana.fernandes.gomes,lbarros}@psicologia.ulisboa.pt
{maria.ana.barroso}@gmail.com

³ Faculdade de Medicina, Universidade de Lisboa
{joanamsousa}@medicina.ulisboa.pt

Abstract. Recently, we have witnessed an emergence of digital behaviour change applications, particularly in the areas of fitness and nutrition. Digital platforms promise several benefits over their paper-based counterparts, particularly in collecting information from users and in the personalized delivery of notifications and contents. One crucial aspect for nutritional behaviour change is capturing the user's food intake, which is normally achieved through 24-hour food recall, i.e., reporting everything people ingest. Past instruments have focused on self-reporting, mostly performed by adults. In this work, we co-designed, within a team of computer scientists, dietists, psychologists, and parents, how the latter could report their children's food intake through an application. One particular challenge of third-party reporting is having an incomplete picture or not being fully available to report when intake is taking place. Another challenge was how to report food intake quantities. We decided to go with an already validated approach that measures food portions using children's hands. Different food had different ways of reporting, e.g., fruits and vegetables were reported using fists and handfuls. After an iterative process, we created a standard for each portion. Parents had to choose between full, three quarters, half, and one-quarter of a portion. We evaluated our prototype in a preliminary study (4 weeks free-living usage, with logging, plus interview) with 5 parents. We found a constant need to reduce the burden (even more than when self-reporting), allow more flexibility, and simplify the steps for parents while reporting their children's food intake. Parents highlighted the difficulty to fill in the report in the requested time. From those insights, we decided to reduce the number of days to report, allow extra opportunities to continue within the program, improve the tutorial for portions and how to measure them, and allow parents to decide the day of reporting.

Keywords: mHealth · mobile apps · co-design · application · children · parents · feeding practices.

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