WebDASC: a web-based dietary assessment software for 8-11-year-old Danish children

Biltoft-Jensen, Anja Pia; Trolle, Ellen; Christensen, Tue; Islam, N.; Andersen, L. F.; Egenfeldt-Nielsen, S.; Tetens, Inge

Publication date: 2013

Document Version
Publisher's PDF, also known as Version of record

Citation (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
WebDASC: A Web-based Dietary Assessment Software for 8-11 year old Danish Children

Biltoft-Jensen A¹, Trolle E¹, Christensen T¹, Islam N², Andersen LF³, Egenfeldt-Nielsen S⁴, Tetens I¹.

¹Division of Nutrition, National Food Institute, Technical University of Denmark. E-mail: apbj@food.dtu.dk
²USDA/ARS Children’s Nutrition Research Center, Baylor College of Medicine, Houston TX.
³Department of Nutrition, Institute of Basic Medical Sciences, University of Oslo, Norway.
⁴Serious Games Interactive, Copenhagen N, Denmark.

Background Assessing dietary intake in children is a challenge. Hence, assessment tools should be intuitive, easy and fast to complete, non-intrusive, engaging, and age-appropriate.

Objective The project developed and evaluated a Web-based Dietary Assessment Software for Children (WebDASC). It was part of the OPUS project¹ measuring dietary change after a school-based intervention.

Methods The development was guided by focus groups, expert input, literature review, and usability tests. Special consideration was given to age-appropriate software design issues with an animated armadillo as a guide.

WebDASC includes:
1. Databases containing 1300 food items and 320 photo series containing 4 images each.
2. Registration tools as five search strategies including a spell check function, and a “type in format” (Figure 1b).
3. Memory enhancers as internal checks for frequently forgotten foods, images, sound and questions.
4. Motivators as a food meter, top 10 list, and a computer game. In the game the armadillo has to catch the correct food in the correct basket/category (Figure 2b). The game uses the same food categories as the browse search, and thereby helps the children using the categories.

Acceptability was measured by a qualitative questionnaire answered by 74 children (8-11 y) who had completed seven consecutive days of dietary assessment using the WebDASC in the OPUS pilot study.

Results All liked the user interface design.
• 90% of the children received help from parents to complete WebDASC (Figure 3).
• 80% found the reporting duration acceptable (30 min. on first day; 15 min. on following days).
• 88% found the task of finding and reporting foods more or less easy. Children preferred the category browse search, whereas adults preferred the free text search.
• 85% found the digital images to estimate portion sizes more or less easy to use.
• 77% liked the game, and it was played on 55% of all reporting days.

Conclusion Qualitative testing demonstrated that WebDASC was well accepted among children and their parents. Future improvements includes further adaption to the spelling competences of children (and adults), improved portion size estimation, and adaption to other age groups.