

Foreword

Methodological procedures followed in a kindergarten-based, family-involved intervention implemented in six European countries to prevent obesity in early childhood: the ToyBox-study

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The ToyBox-study (full title: ‘Multifactorial evidence based approach using behavioural models in understanding and

promoting fun, healthy food, play and policy for the prevention of obesity in early childhood’ <http://www.toybox-study.eu>) is a European Union-funded study (2010–2014) aiming to develop, implement and evaluate

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an innovative and evidence-based obesity prevention programme for 4–6-year-old children and their families (1). To accomplish its targets, ToyBox-study has been planned to:

Step 1. Identify young children's key behaviours and their determinants related to early childhood obesity; evaluate existing behavioural models and educational strategies that best support behavioural change in this age group; assess environments, policies and legislation affecting the implementation of kindergarten-based health promotion activities;

Step 2. Develop a kindergarten-based, family-involved intervention to influence obesity-related behaviours in 4–6-year-olds and their families, adjusting for cultural, legislative and infrastructural diversities in the participating countries;

Step 3. Implement the intervention programme in six European countries; assess its process, impact and outcomes; and estimate its cost-effectiveness;

Step 4. Disseminate the results and make recommendations for European public health policy.

Step 1 included four phases (phases 1–4) (Fig. 1) and was previously presented in the first Supplement Issue of the ToyBox-study, which was published in *Obesity Reviews* (2–12). The outcomes of step 1 guided the following steps

(steps 2 and 3) in developing, implementing and evaluating the ToyBox-intervention, i.e. a kindergarten-based, family-involved intervention aiming to prevent obesity, by targeting four key energy balance-related behaviours (EBRBs), i.e. water consumption, snacking, physical activity and sedentary behaviours.

In the current supplement issue of *Obesity Reviews*, steps 2 and 3 are thoroughly presented. These steps correspond to the intervention mapping and the PROCEED phase (phases 5–8) (Fig. 1). More specifically, in their papers De Craemer *et al.* (13) and Duvinage *et al.* (14) present how the intervention mapping protocol was applied to develop the intervention material of one of the four targeted EBRBs, i.e. for physical activity; Payr *et al.* (15) and Andrououts *et al.* (16) present methodological issues related to the design and implementation of the kindergarten teachers' training sessions conducted during the ToyBox-intervention; Manios *et al.* (17) present the design of the ToyBox-intervention and the characteristics of the study sample at baseline; and Mouratidou *et al.* (18) present the procedures followed and the tools used for the impact and outcome evaluation of the ToyBox-intervention. Regarding the impact evaluation, González-Gil *et al.* (19) present methodological issues related to the core questionnaire, which is one of the tools used for this purpose, while for the

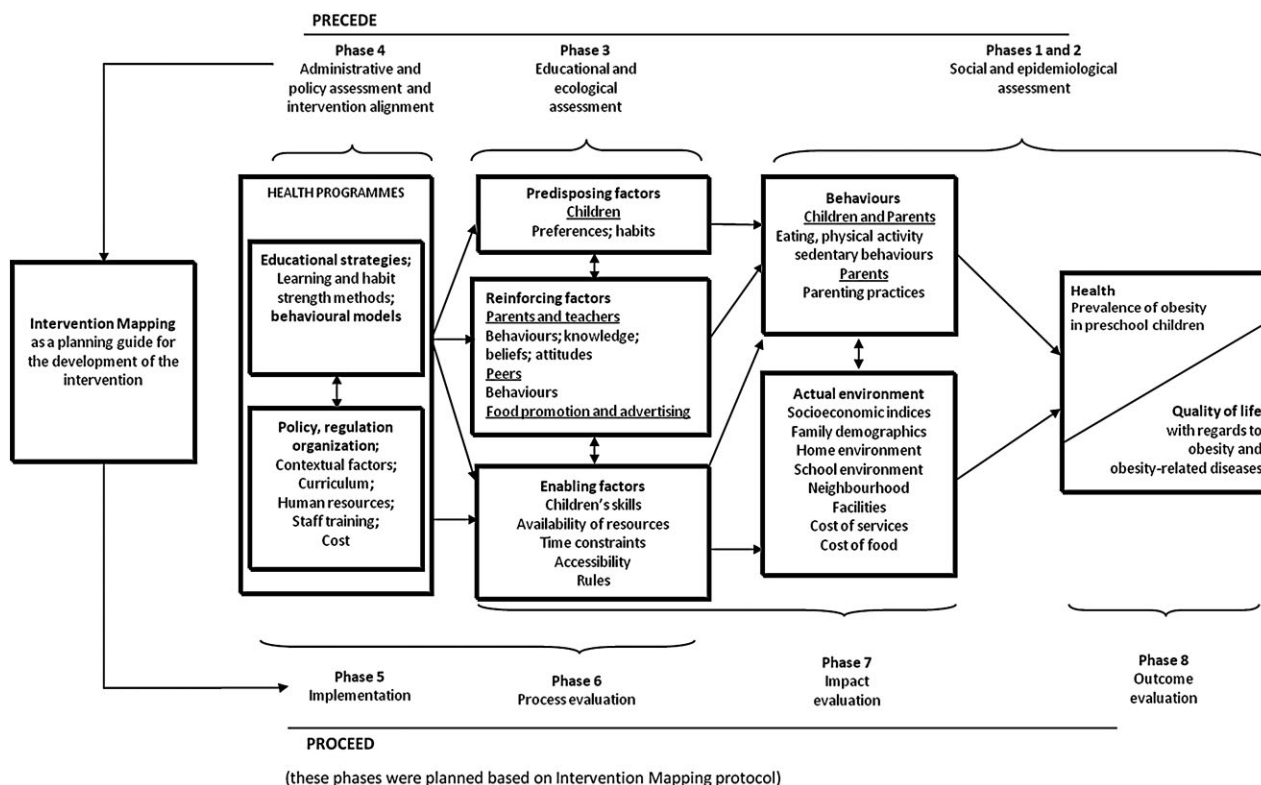


Figure 1 The systematic approach used in the ToyBox-study: the adapted PRECEDE-PROCEED Model combined with the intervention mapping protocol for the development and implementation of the kindergarten-based, family-involved intervention.

outcome evaluation, De Miguel-Etayo *et al.* (20) present methodological issues related to the anthropometric measurements obtained at baseline and follow-up. Androutsos *et al.* (21) present the design and the actual tools used for the process evaluation; and Pil *et al.* (22) present methodological issues related to the cost-effectiveness assessment. The 11 papers included in the current supplement issue were reviewed by four reviewers and the guest editor. Two of the reviewers were also involved as external advisors in ToyBox-study, while the coordinator of ToyBox-study acted as a guest editor for the needs of this supplement. Partners involved in steps 2 and 3, acted also as authors or co-authors in the related papers, thus providing valuable comments and feedback during the preparation of each manuscript.

Hoping that the outcomes of the ToyBox-study will provide some significant insights and further expand our knowledge and understanding on the effectiveness of kindergarten- and school-based interventions targeting early childhood obesity, the coordinator of ToyBox-study would like to thank all partners of the ToyBox-study for their valuable contribution and support in the development and implementation of this study.

Conflict of interest statement

No conflict of interest was declared.

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