The implementation of intersectoral community approaches targeting childhood obesity

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Summary

9

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Background

Childhood obesity remains an urgent public health problem. The prevalence of obesity in children is still alarmingly high, and both the psychosocial and medical consequences of childhood obesity are severe. **Chapter 1** elaborates on the issue of childhood obesity, and the quest to find a preventative intervention that can successfully halt the childhood obesity epidemic. It describes the success of the French EPODE approach in reducing childhood obesity, and the subsequent development of several EPODE-derived Intersectoral community Approaches targeting Childhood Obesity (IACOs). Although theoretically promising, the translation of IACOs into practice is often arduous and implementation failure is frequently reported. The aim of this thesis was therefore to evaluate the implementation of five EPODE-derived IACO's in the Netherlands and elucidate critical determinants for implementation success. The process evaluation framework for complex interventions is introduced and the use of this framework in our study is detailed. The framework for determinants of innovation (Fleuren *et al.*), which categorizes implementation determinants into five distinct categories (innovation, innovation strategies, provider, organization, community & context) is also described.

Research Consortium

This study is part of the research Consortium Integrated Approach of Overweight (CIAO). CIAO is a concerted action of Academic Collaborative Centres, local academic institutions, regional public health services and relevant local authorities. **Chapter 2** describes the research aims, concepts and methods used within CIAO, which are based upon prior research revealing lacunas in knowledge of and skills related to five elements of EPODE-derived IACOs; namely political support, parental education, implementation, social marketing and evaluation. The overall consortium aim of CIAO to gain theoretical and practical insight of these elements through five sub-studies is discussed. The output of CIAO will consist of a blueprint the development and evaluation of IACOs, which can potentially support communities to further optimize the implementation and subsequently the effects of this approach.

Systematic literature review

As mentioned in the first chapter, the implementation of an IACO contains many hurdles and is therefore considered challenging. To start our study and help overcome these challenges, we first needed an overview of the evidence to date. **Chapter 3** describes a systematic literature review on the outcome indicators and determinants of implementation success or failure of IACOs. Four databases were searched resulting in the inclusion of 25 studies. Study

quality of each of these studies was then appraised using the Crowe Critical Appraisal Tool (for quantitative research) and the Quality Framework (for qualitative research). All reported implementation outcome indicators and determinants were reviewed via narrative synthesis. Appraisal revealed that the quality of included was on average moderate to low. Fidelity and coverage were the most frequently reported indicators of implementation success, the association between determinants and implementation indicators was however never explicated. The determinants of IACO implementation identified via narrative synthesis were mostly related to the social-political context and the organization. The eterminants 'collaboration between community partners', 'the availability of (human) resources' and 'time available for implementation' received the highest star score. Our review furthermore revealed

that the research field on IACO implementation is still in its infancy. More research on the process of implementing IACOs is needed to (dis)confirm findings, and emphasis should be placed on the elucidation of the relationship between determinants and implementation indicators. Our review also revealed that a 'golden standard' for evaluating and reporting on implementation research is lacking. If such a standard was to be developed, this could improve the comparison of study outcomes and may constitute the cumulative development of knowledge about the conditions for designing evidence-based implementation strategies.

Evaluation of IACO implementation

Chapter 4 presents the result of a case study performed on a community implementing the EPODE-derived Youth At a Healthy Weight (JOGG) approach. This community translated the JOGG approach into a water and fruit campaign targeting children ages 0-12 years. Implement degree (completeness) and determinants of campaign implementation were evaluated longitudinally in five half yearly research waves. Semi-structured observations, interviews, field notes and professionals' logs entries were used to collect the relevant data, which were then analysed using a framework approach. Both within-case and cross-case displays were formulated and subsequently, key determinants identified. Principles from Qualitative Comparative Analysis (QCA) were used to identify causal configurations of determinants. Results showed that implementation completeness differed across professionals, but was highest in the educational and health care sector. The determinants and causal configurations of determinants identified were mostly sector- and implementation phase specific, but key barriers identified varied more than key facilitators. High ownership for campaign goals and high compatibility of the campaign with existing procedures were most often cited as facilitators, whereas a lack of reinforcement strategies, a low priority for campaign use, low procedural clarity and incompleteness of campaign materials were most frequently indicated as barriers. Eleven causal configurations of determinants were identified across sectors and a majority of configurations was related to medium or high

levels of completeness. We argue that these results indicate we should perform multiple 'stitches in time'; tailoring implementation strategies to specific implementation phases and sectors using both the results from this study and a mutual adaptation strategy in which professionals are involved in the development of implementation strategies.

As described in our systematic review, IACO implementation has mostly been assessed using qualitative methods and the relationship between implementation degree and determinants of IACO implementation had never quantified. To bridge this gap, we assessed the relation between implementation degree and determinants of implementation quantitatively using the MIDI questionnaire. **Chapter 5** provides an overview of this study and its results. Professionals implementing an EPODE-derived IACO in five communities in the Netherlands were purposefully sampled, and implementation was evaluated via an adapted version of the MIDI questionnaire. A three-step hierarchical multivariate linear regression revealed that 65% of the variance in implementation adherence was predicted by our model. Higher levels of self-efficacy, being an implementer embedded in community B, and having more than one year of experience with IACO implementation were associated with higher degrees of adherence, whereas formal ratification and a high number of prescribed IACO activities were related to lower degrees of adherence. We argue that if IACO implementation strategies and plans are designed, particular attention herein should be paid to the enhancement of professionals' self-efficacy, the number of activities prescribed and allocation of sufficient time for professionals to get acquainted with IACO implementation.

In **Chapter 6**, we report on our longitudinal study on the implementation of five EPODE-derived IACOs in the Netherlands. Aim was to unravel which determinants influenced IACO implementation and if differences across communities, sectors and in time were present. To this end, we held semi-structured interviews with 189 community stakeholders implementing an IACO in one of these communities. Twenty-two key determinants of implementation were identified. Key facilitators identified were mostly internal (stakeholder level), whereas the key barriers identified were mostly external (at the level organization or community context level). We furthermore found that the key determinants identified varied significantly across sectors and in time. There was especially a striking contrast between the key determinants identified for on the one hand the educational & health care sector and on the other hand the private, welfare & sports sector. Only 'perceived importance of IACO goals' was identified as an implementation facilitator across sectors, communities and in time. One other important finding is that stakeholders expressed they needed possibilities to adapt the approach in order to optimize compatibility with their local setting. In conlusion, results of this study undeline the need for tailored implementation plan per sector and in time, preferably using a 'mutual adoption strategy'. Via mutual adaption, community

stakeholders and local IACO project managers can jointly optimize implementation efforts by formulating implementation strategies based on scientific evidence and local best practices. Strategies should then be amended iteratively, to ensure the implementation plans remain salient with the local context.

Network development & IACO implementation

An IACO can be considered as a 'whole system approach', in which stakeholders from different levels of the community of the child are mobilized to help establish a non-obesogenic environment. It is however not yet clear how intersectoral collaboration between stakeholder, and in turn, network development is associated with IACO implementation success. We therefore used Social Network Analysis (SNA) to examine how obesity prevention networks developed over time within three communities implementing an IACO in the Netherlands. We also evaluated if and to which extent network development was related to implementation degree. **Chapter 7** describes this study and its results. With regard to implementation degree, our results showed varying degrees across communities. Implementation degree was highest for the domain 'local organization' and lowest for the domain 'linkage between preventative and curative care'. As for network parameters; network size differed across communities and was largest in community A and lower in communities B&C. Project management was identified as the most influential and prominent actor in all communities. We also found indication for a an association between a well balanced distribution of actors per sector and a higher degree of IACO implementation. Indication for a negative associations with implementation degree were found for a high level of collaboration, a large network size, a less centralized network and a decrease in centralization over time Overall, we found that a change in network parameters over time might be more strongly associated with implementation degree than the assessment of these parameters at one single point in time. Results of this study provide leads for the formulation of network development strategies that could potentially optimize IACO implementation. More research is needed to further explore and test these leads and potential strategies in practice, to refine EPODE program objectives with regard to network development and ultimately improve IACO implementation.

General discussion and implications of findings

Chapter 8 discusses and compares the findings of the studies presented in this dissertation, compares these findings to the previous literature and discusses methodological issues. It also provides practical implications derived from our study findings for practice as well as research. Finally, it highlights paths for future research.