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# Conceptual approaches in the prevention of child overweight in Germany

The research project ‘Systematization of  
Conceptual Approaches’ (SCAP)

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# Conceptual approaches in the prevention of child overweight in Germany—the research project ‘Systematization of Conceptual Approaches’ (SCAP)

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## Abstract

**Background** Childhood overweight is a serious public health challenge. There is a complex landscape of interventions with multiple subjects, target groups, and approaches for different settings in Germany.

**Aims** There is a need to get an overview and to analyze the conceptual approaches of interventions on overweight and obesity prevention in childhood and adolescence.

**Subjects and methods** To provide a systematic overview, SCAP developed as a first step a catalog of descriptive indicators to analyze the conceptual approaches of interventions. The indicators can be assigned to five global dimensions: (1) setting, (2) conceptual approach, (3) target group, (4) quality requirements for the conception of universal prevention (in generic and setting-specific), and (5) determinants. These dimensions were used in the second project step to analyze overweight prevention programs in four settings and to systemize the applied conceptual approaches. The third step entailed identifying gaps, improvement potential, and recommendations for action.

**Results** This project contributes to the improvement of childhood overweight and obesity prevention measures by focusing on setting-specific approaches. It provides a systematic overview of the approaches, which allows an in-depth overview at both a generic and setting-specific level. Recommendations focused on gaps in evidence concerning implementation and a need of transparency. There are further requirements for coordination, checklists, and an intervention database.

**Conclusion** The results of the SCAP project can be used in the quality-oriented development of intervention measures, which could make it valuable for the implementation of the new German Preventive Health Care Act.

**Keywords** Obesity prevention · Health promotion · Conceptual approaches, childhood and adolescence

## background and German context

Overweight and obesity are considered one of the new morbidities, which can be regarded as a shift from infectious and acute diseases to chronic and lifestyle-associated diseases (RKI 2008). Current epidemiological data indicate that while

the increase in prevalence rates in Germany has been slowed down, it has stabilized at a high level (Brettschneider et al. 2015, 2017; Skinner et al. 2016; WHO 2016). According to the WHO (2016), worldwide around 41 million children under the age of 5 were overweight or obese, with the highest prevalence in the European region.

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## Overweight and obesity prevention in Germany

According to the results of the KiGGS Wave 1, in Germany the prevalence rates for 4- to 10-year-old children are 7% for overweight and 4% for obese compared with the prevalence data of the KiGGS baseline survey with 8% overweight and 5.5% obesity levels. With increasing age (11 to 17 years of age), overweight and obesity rises to 19%, indicating no further increase compared with the KiGGS 2007 baseline (Brettschneider et al. 2015). While there are hardly any significant gender differences, children and adolescents with low social status are significantly more often affected by overweight and obesity. Accordingly, there is still a need for action to be taken in establishing successful preventative and curative measures.

At the center of the behavioral prevention of overweight and obesity in childhood and adolescence are interventions with a focus on individual level determinants such as nutrition and exercise. There are also interventions in the context of a setting approach to develop healthy social contexts. In sum, there is no shortage of interventions in Germany in this area (Dadaczynski et al. 2018). On the contrary, the landscape is so complex and diverse that no systematic quantitative or qualitative overview is available—or even possible. As a consequence, it is difficult to provide a summary and assessment of the intervention field, the approaches being used, or the initiation and development of targeted activities.

In general, findings assessing behavioral modification interventions to prevent overweight in childhood and adolescence show positive effects for physical activity, sedentary lifestyles, and dietary habits (Kamath et al. 2008). For many other factors, however, the results are inconsistent or not yet adequately documented (Waters et al. 2011; NICE 2014). Furthermore, there is only weak evidence for the positive effects of setting-oriented factors. Moreover, there are few findings evaluating complex and relationship-related interventions, and those that do exist provide even weaker evidence of a positive effect. This can be attributed not only to methodological challenges, but also to a lack of resources for research into non-behavioral interventions.

### The SCAP project

As part of the project Systematization of Conceptual Approaches for the Prevention of Child Overweight in Settings (SCAP), conceptual approaches underlying interventions on overweight prevention in three different settings (pre-school, school, and municipality/community) as well as in the field of family health promotion were identified and systematized using a newly developed set of criteria. This enabled the development of an overview of the use of the intervention approaches in four different areas. The analysis is the first of

its kind in Germany to provide a systematic setting-specific and comprehensive overview of the conceptual approaches used in the prevention of child overweight. On this basis, gaps and potential for improvement are systematically identified, and recommendations for action are formulated.

The project was initiated and supported by the German Federal Ministry of Health within the framework of the priority area “Prevention of overweight and obesity in children and adolescents” and coordinated by the German Federal Center for Health Education (BZgA). In the period between July 2015 and December 2016, the project was realized by a consortium of the following seven German universities: Coburg University of Applied Sciences, University Medical Center Hamburg-Eppendorf, Hannover Medical School, Leuphana University Lüneburg, Magdeburg-Stendal University of Applied Sciences, Osnabrueck University, and RheinMain University of Applied Sciences, Wiesbaden.

### Project aims

The SCAP project targets three major areas:

- (1) Development of a criteria catalog for the systematization of conceptual approaches of child overweight.
- (2) Identification of German interventions aiming at the prevention of childhood and adolescence overweight in three settings as well as in the area of family health promotion.
- (3) Systematization of the conceptual approaches using the criteria catalog and identification of gaps, improvement potential, and recommendations for action.

### Methodological approach

For the development of the criteria catalog, a systematic literature search was conducted to identify relevant criteria catalogs in the field of health promotion/prevention and prevention of child overweight across different settings (Babitsch et al. 2016). The comprehensive criteria catalog developed in this project comprises the following categories: interventions, conceptual approaches, central guiding principles of health promotion and prevention, and descriptive criteria derived from existing quality requirements. In the latter case, reference was made to the quality criteria for health promotion and primary prevention measures against overweight in children and adolescents of the BZgA (2010). These descriptive criteria were complemented by findings from the literature research. In addition, evidence on determinants of overweight in childhood and adolescence was included using and updating the NICE evidence report (NICE 2014). The list of criteria was

developed with the aim of including, where possible, generic indicators and, where necessary, setting-specific indicators. Experts evaluated the criteria catalog as long but adequate and valuable and its use as feasible.

The second part of the SCAP project identified interventions for the prevention of child overweight in the settings preschool, school, and municipality/community as well as in the field of family health promotion. A total of 439 interventions were identified based on a priori defined inclusion criteria. Of these, based on publicly available materials, 233 interventions were included in the in-depth qualitative analysis. The assessment of these interventions proved to be difficult because of the lack of information provided in the available materials. Therefore, the qualitative assessment was extended by an online survey of all intervention providers. Based on criteria from the criteria catalog, a method was developed to classify the applied conceptual approaches in a typology. A cluster analysis was conducted (including number of methods, topics, and settings) to identify specific types of conceptual approaches. The results indicate seven different types, each representing different levels of intervention complexity. The respective ends of the continuum are two types that are designated as “singular interventions” (representing interventions that use few methods and address specific determinants and settings) and “complex coordinated interventions” (representing interventions that use a wide range of methods and address different determinants and/or settings). Results show that only a small percentage (7%) represent the complex-coordinated intervention type whereas about one third (32.6%) is complex with regard to methods used and determinants addressed but operates in a single specific setting.

Finally, the GAP analysis approach was used to identify existing gaps between the expectations specified in the criteria catalog and the current implementation of overweight prevention measures (Paul and Wollny 2014; Horváth et al. 2015). This allowed for a very detailed analysis of gaps and potential for improvement, which has been transferred into a comprehensive list of generic and setting-specific recommendations for action. Wherever possible, generic recommendations for action were given. A fundamental problem in the evaluation was that the literature research yielded heterogeneous and often simplified representation of the conceptual approaches on which the interventions were based. This made it difficult to compare the interventions as well as to evaluate them systematically.

## Lessons learned/ results

During the course of the project it became obvious how challenging it was to develop a systematization of overweight prevention measures for children and adolescents across different settings. The structured and systematic approach of the SCAP project was a key component enabling the summary

and identification of general and specific requirements, potential, and gaps. Furthermore, it was possible to identify different levels of progress in the three settings and the field of family health promotion. The identified gaps and potentials for improvement were formulated as recommendations in the following categories: findings/research, development, quality, and implementation. For instance, a recommendation is to improve transparency by coordination, uniform checklists, and an intervention database (possibly integrated into other databases). Another example is to compensate the lack of support given actors implementing theory- and evidence-based interventions in the four contexts by offering them workshops and advisory services.

The results of the SCAP project can be used in a variety of ways to ensure the continuity and quality-oriented development of settings-based overweight prevention in childhood. It is also useful for the implementation of the new German Preventive Health Care Act, which was adopted in 2015 and came into force in 2016. On the methodological level, this could involve establishing search, evaluation, and assessment strategies as well as multidimensional criteria catalogs. The latter can be adapted for different fields of application and used, for example, in a short form for documentation and quality development in professional practice. With the concurrent and methodologically coordinated study in a joint project of three settings (preschool, school, and municipality/community) and the field of family health promotion, SCAP contributes to moving beyond “setting boundaries” and integrating action approaches. Correspondingly, there are specific indications as to which intervention cultures have been established in the settings, where differences and similarities exist, and how these can be developed and specifically addressed and developed in a broader context. For this purpose, the recommendations for action provide concrete impetus for further development, implementation, evaluation, and evaluative reviews of childhood overweight and obesity prevention measures.

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## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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