Regional networks for preventing overweight in children

Important factors in the network’s construction phase

*Sina Scheerer, Halle-Wittenberg*

**Summary**

The term “regional network” implies that several participants cooperate within a common structure, which is a suitable approach for preventing overweight in children. The construction of a stable network may be either supported or discouraged by external factors. These factors have been collected from the available literature and tested by an expert panel using a questionnaire. The tested persons were leading participants in the networks “Regionen mit peb” [regions with peb], a project of the platform “Ernährung und Bewegung e. V.” [Nutrition and Exercise]. The survey found out that most of the supporting factors were indeed considered during the construction phase. It is nevertheless possible that networks in the active phase are sometimes faced with problems such as ineffectiveness, due to difficulties in reaching decisions and wasted time.

**Keywords:** prevention, situational prevention, networking, children, overweight

**Introduction**

These days, children are confronted with health problems caused by industrialisation and its social consequences, including increased urbanisation, mechanisation and medialisation of their environment. Overweight in children and adolescents is one of the main problems caused by these situational changes. Overweight and lack of exercise cause many different health problems, including disturbances in the postural and locomotor systems in children, as well as cardiovascular disease, type II diabetes and disorders in lipid metabolism [1].

These developments raise questions about the possibilities of actively making changes in the children’s situation (“situational prevention”), in order to counteract the problem of overweight in children and adolescents and its sequelae.

The regional network is one possible organisational form to prevent overweight in children, as these networks can concentrate the activities of all participants in a region. In spite of the advantages of this form of organisation, there may be problems in planning and orientation. The current study was part of the project “Regionen mit peb” [regions with peb] from the platform Ernährung und Bewegung e. V. (peb) [Nutrition and Exercise] and was intended to examine the network as an organisational form to prevent overweight in children, focussing on the initial construction of the network. Favourable and unfavourable factors were identified, which can be created or considered when a stable network is to be constructed.

**Background: The social context of networks**

The development of overweight is a multifactorial problem [2, 3], which is why there are many different participants in the prevention of overweight. The most common approach in preventing and treating overweight has been to use behavioural therapy [4]. However, situational prevention is now being increasingly applied to support modifications in behaviour and this is being developed and supported by scientists, experts, politicians and others in collaboration [4].

Situational prevention of overweight must be applied to the children’s immediate environment, where they play, learn, live and experience. One possible participant in the children’s
immediate vicinity is the municipality, the political community in which they live. If all the participants responsible for children’s health within a regionally organised area (such as the municipality) collaborate, this may encourage political interest in the issue of overweight in children and help to avoid duplicated structures. Bureaucratic hurdles could be dismantled and benefits gained from the enlarged pool of resources and knowledge.

When working on an issue, the participants must collaborate in a suitable manner, but still remain autonomous. Constructing a network is one possible mode of organisation. The term “network” implies that various participants collaborate as equals (nodes) in different constellations (individual “threads” or connections). As good results have been obtained in many areas, the network has been a frequently used form of organisation for several years [5–7].

**Advantages and potentials of the network**

Networks are said to have many favourable attributes. They are thought to permit flexible work [8] and to offer the opportunity of concentrating expertise. This makes them a place of learning. A network can be described as having the following properties:

- orientation towards solving problems
- goal directedness
- concentration of expertise/pooling of resources
- low hierarchy
- voluntary character
- win-win situation/potentiality
- open structure
- mutual trust

The characteristic of a regional network – or a network in a municipality – is its geography. Regional networks are formed between communal, economic and social participants or organisations from the same region or conurbation [9].

Although there is no hierarchy in a network and the institutions are linked at the same level, structures are necessary. For example, these may be a steering committee, forums, working parties or a coordination office [10].

**Challenges and problems in a network**

Aside from these advantages, collaboration in a network can lead to difficulties and challenges. These should always be born in mind when deciding whether a network is the best suited form of collaboration. For example, one problem may be that a great deal of time and organisation are necessary [11]. Once the decision has been made to construct a network, it may be considered how to counteract the disadvantages – for example, by creating structures that make the collaboration as effective as possible [12].

**Phases of the network**

Introductions to the network [9–11, 13], often list two phases: the construction phase and the active phase, in which the network operates.

During the phase of constructing the network, important decisions are made on its design and planning. This is referred to as the “initiation and starting phase” [14]. In the active phase, the collaboration must be maintained and the network must be kept up.

There are working introductions for the phase in which the network is active [5, 9, 15, 16]. However, for the construction phase, there are either no available introductions, or this is only briefly mentioned. It would therefore seem to be interesting to describe the construction phase in more detail and to consider the favourable factors that can be created directly in this phase and the unfavourable factors that are to be avoided, in order to provide a stable foundation for the active network phase.

**Methods**

**Literature analysis**

The first part of this study is theoretical and contains an analysis of the literature, in order to identify favourable or unfavourable factors in the phase of network construction.

The subsequent empirical study (written questionnaire) considers whether the favourable or unfavourable factors during the construction phase, as identified in the literature search, can really be identified in the construction phase of real projects in practice and whether these influence the subsequent success of the network.

**Survey**

**Recruitment**

For the empirical study, active members from 28 existing regional networks on preventing overweight in children were sent a written questionnaire. As there are relatively few regional networks on this theme, the existing networks had to be contacted specifically. For the present study, the networks were contacted that had been developed in the project “regions with peb” of the platform Ernährung und Bewegung e.V. (peb). “Regions with peb” are regional networks founded for health support and for the situational protection of overweight in children. The regions are spread throughout Germany [13].

In order to reach all networks and to survey a relatively large number of experts, a written questionnaire was selected as the study method. Within the 28 regions, the questionnaire was sent to the network coordinators and/or the members of the steering committee. This was restricted to
members involved in planning and controlling the network, in order to guarantee that the participants in the survey were familiar with the structures of their network. However, this also meant that between one and 18 persons per network were addressed. In all, the questionnaire was sent to 78 network participants.

Thirty-six (36) questionnaires from 20 regions were returned, corresponding to a response rate of 46.2%. Between one and seven persons per region took part in the survey. As this number of questionnaires per region is both variable and low, no comparison between the networks is possible. Nevertheless, initial insights are possible into the favourable and unfavourable factors in network construction.

The questionnaire was not submitted to a pre-test, as there are only a limited number of regions which work on the issue of overweight prevention and health in children. It was not desirable to reduce this number further with a pre-test. Instead, the questionnaire was checked by two experts on regional network construction and two experts on questionnaire development.

**Questionnaire**

The questionnaire employed a mixture of open and closed questions, depending on the questions in the individual theme complexes:

In order to record the successes and problems in the network, three open questions were put:

– In your opinion, what are the most important successes of the network?

– In your opinion, what are the most important successes that you have been able to achieve by collaborating in the network?

– In your opinion, what are the challenges and problems in the network that still have to be overcome?

The open questions are suitable in this case, as they record what the network members subjectively and individually regard as successes or problems.

The next questions mainly concentrated on the structures of the network. Here it was intended to check the factors identified in the theoretical section. For this reason, closed questions were put here. The first of these questions was a yes-no question to check which structures had been bindingly specified in the phase of network construction (Figure 1).

The next question employed a rating scale (“agree strongly” to “do not agree”) to find out the attitude of the survey participants and the regional situation (Figures 2, 3).

The next questions were open and asked about the professional or institutional origin of the network members, as well as the participating decision makers from regional politics or administration.
Data evaluation

The open questions in the questionnaire were evaluated qualitatively, using MAEHRING'S qualitative content analysis [17]. The closed questions were analysed descriptively by numerically counting the answers.

Results of the literature analysis

Steps and phases in network construction

According to the relevant literature, network construction starts with the vision [5, 16] and the decision for the network [7]. It has been consistently stated that the foundation for the initiation of the vision is that a real problem is perceived and that there is a conviction that this problem can only be solved – or that it can be solved better – if the expertise and resources are concentrated [5].

The subsequent steps in network initiation are not described consistently in the literature. Although some steps are the same, there is no consistent description of this initial phase. In an attempt to standardise the different approaches, we identified seven steps in various articles that were components of the construction of a network (Overview 1).

These phases make it clear that several organisational decisions must be made before a network is founded and the form of the network has already been clarified. We will now consider whether there are additional supporting instruments which can be initially created, or factors that can be influenced.

Favourable factors in network construction that support success

Following PFEIFFER [6], three groups of favourable factors have been identified: factors that depend on network members, factors that strengthen the organisational structure and external factors (Table 1):

Factors depending on network members

– Specifying common goals
  The participants should specify their different expectations by formulating common goals, so that they can achieve a shared basic understanding of the field of work. If there are objectives with which all members can identify, this can serve as a spur and motivation within the network. Moreover, it is advisable to lay down a specific time point by which the goal or secondary goal is to be reached.

– Ensuring a win-win situation
  BORKENHAGEN et al. [5] describe a personal and institutional win-win situation; the personal benefits can include fun, increase in prestige, social recognition or increase in expertise. The institutional benefits could be cost saving, know-how or marketing advantages.

– Building trust
  Not only is trust in the network participants important, but also trust in the network and its function [19]. A trusting relationship is already necessary in the initial phase and can be built up during the common process of planning and identifying the objective [20, 21].

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Table 1: Favourable factors that can be actively created during the phase of network construction, in order to construct the foundation for a successful and stable network.
Finding and motivating suitable network members

It must be checked who is politically influential in the region and which participants or institutions can provide additional knowledge and experience. Aside from the factors that must be considered in the selection of the members, there are also social factors that the network members must bring with them. Aside from cooperation management and network control, Payer [22] considered that the ability to cooperate was the most essential element in networking. He suggested that the ability to cooperate is formed by the interaction between the following six elements: trust, transparency, obligation, the ability to solve conflicts in a friendly manner, orientation towards solutions and pleasure in communication.

Ensuring equal rights and heterogeneity

Networks are characterised by the lack of hierarchy. Therefore, all network participants should be seen as having equal rights. A high degree of heterogeneity within the network is also recommended. The network participants should bring different expertise profiles with them and come from a very wide variety of areas. This makes it possible to discover and implement new and innovative ideas [16].

Factors that strengthen the organizational structure

Specifying network structures

These structures include the type of communication, the number of meetings, the manner in which themes are identified and processed, whether there should be a network manager, how information and results are documented and stored and whether there should be obligations and rules [15].

Creating rules and obligations

At first sight, this appears to be in contradiction to what constitutes a network. However, according to Payer [22], the low degree of obligation is just what makes the obligation of the network participants to the network so important. Thus, obligation does not only mean compliance with agreements, but also that responsibility is assumed for what takes place within the network.

Nominating the network coordinator

The lack of hierarchy is an accepted characteristic of networks. Nevertheless, it is generally accepted that a network must have a promoter if it is to be effective and efficient. The promoter follows all threads and manages the network [13–15, 24]. The promoter may be in the form of a coordination team. The network coordinator acts as the interface between the participants.

Overview 2: Categories in which the network can lead to successes (either personal or for the network) and in which problems can develop

1) Common goals
   a) better and new collaboration and contacts (collaboration/contacts)
   b) new or improved services
   c) other tasks (other goals)

2) Working within the network
   a) functionality/effectiveness
   b) communication/regular meetings
   c) atmosphere
   d) personal tasks

3) Responsibilities and obligations

4) Network coordinator

5) Network members
   a) commitment/motivation
   b) expertise
   c) suitable members

6) Win-win situation (win-win situation/personal benefit)

7) Heterogeneity

8) Trust
   a) in the network members
   b) in the network

9) Needs and current situation

10) External acceptance

11) Resources (material, financial, personal, time)

12) Equal rights

13) Extending the network

1 additional category with respect to the problems in a network
2 additional category in the personal success factors
3 additional category in the network success factors
**External factors**

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**Ensuring external acceptance**

To ensure that the motivation of the network participants does not fade, it is important that the network and the participants’ work should be accepted and respected by the public, politicians and administrators. PFEIFFER [6] states that, even though financial support is essential, moral support is just as important. This is why regional decision makers must be involved from the start.

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**Marking out resources**

The necessary financial, material and personal resources, as well as the necessary time, must be identified, and it must be confirmed that these resources are available. What is important in practice is that the resources of the network partners are identified and used in such a manner that the tasks can be carried out. It is also important to consider how the resources can be extended if the network is expanded or when additional projects are added.

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**Analysing needs and the current situation**

In order to develop a suitable service for the region, it must be clarified in advance what needs to be done in the region. It is also useful to know whether there are special groups who require special support, or whether there are specific areas that can be improved, such as bicycle paths or playgrounds. It is then possible to make decisions about which areas need financial support, time or personnel. Aside from the need, it is just as important to know about the current situation. This means collecting information about current activities and services and their quality. It may then be agreed to extend or improve these. It may also be possible to benefit from the experience of those involved in current activities.

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**Unfavourable factors in network construction**

During the construction of the network, enough time should be left for collecting opinions, orientation and clarifying interests. It must be born in mind that initial euphoria can lead to unconsidered and premature actions [25]. Favourable factors can then be created and unfavourable factors avoided. Unfavourable factors are only rarely mentioned in the literature. PFEIFFER [6] describes unfavourable factors as the converse of the favourable factors. It is also unfavourable if the favourable factors are not even created, for example, if the network structures are not specified, the resources are not marked out, the need and the current situation are not recorded, or if there is no common process for specifying the objectives. If a win-win situation is to be established, it does not help if some network participants wish to benefit from the network, but are not prepared to disclose their own ideas.

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**Figure 2: Percentage distribution of agreement to the statements on network foundation**

![Percentage distribution of agreement](image_url)
The favourable factor “Ensuring heterogeneity” is the only one that can also have unfavourable effects – for example, if the network participants are so different that they cannot work constructively together. It may happen that the different institutions persist in their normal manner of work, or that there are too many experts in the network, who are not open to other opinions. Other obstacles for efficient collaboration include hierarchical structures, “hidden relationships”, personal reservations and strong dependencies [16].

**Results of the survey**

**Success factors and problems in network construction**

The answers to the questions on the success factors and problems/challenges in network construction (open questions) were evaluated and, on this basis, a category system was developed (see Overview 2). The resulting categories show what the respondents consider to be the elements in network construction that are responsible for successes or problems.

The **success factor** that the network experts most frequently mention is the achievement of common goals – new and better collaboration and contacts, new or improved services. What is important at the personal level is private benefit and achieving personal goals – personal achievement in network activities, win-win situation and personal benefit.

A frequent problem in existing networks is an ineffective way of working. For example, there may be problems with...

...in die verschiedenen Ansatzpunkte, Vorschläge, Einwände, Ideen [...] eine Struktur zu bringen.” (FB22_rn_4)

[“…providing a structure for the different approaches, suggestions, objections or ideas […]” (FB22_rn_4)]

...einfache, aber effective Strukturen zu finden, um Informationen sinnvoll zu verteilen.” (FB23_rn_4)

[“…finding simple but effective structures in order to distribute information in an expedient manner.” (FB23_rn_4)]

This also applies to making decisions. Problems here include:

„Umsetzung der gemeinsamen Vorschläge/Ideen, weil die Abstimmung unter Berücksichtigung möglichst aller Partner mehr Zeit in Form von Informationsweiterleitung durch Gespräche benötigt. […]“ (FB12_rn_4)

[“Implementation of common suggestions or ideas, as discussion with all partners (if at all possible) needs more time for transmitting information during discussions. […]” (FB12_rn_4)]

![Figure 3: Percentage distribution of agreement to the statements on network foundation](image)
It is also thought that a great deal of time is expended, e.g.:

"Für das Bearbeiten von bestimmten Themen gestaltet sich ein zu großer Kreis als schwierig – der Zeitaufwand (neben der eigentlichen Arbeit) ist generell [...]" (FB14_rn_4)

["If the circle of participants is too large, it may be difficult to discuss specific issues. A lot of time is wasted – beside one’s own work [...]" (FB14_rn_4)]

"[...] größtes Problem ist der Zeitaufwand für Netzwerktreffen." (FB24_rn_4)

["[...] the greatest problem is the time needed for network meetings." (FB24_rn_4)]

If the network participants are highly heterogeneous, this can also be an obstacle to the work in the network:

"Da die Beteiligten sehr unterschiedliche Erwartungen an das Netzwerk haben und für jeden zwar konkrete aber sehr unterschiedliche Problemstellungen im Vordergrund stehen, ist es m. E. schwierig übergeordnete Strategien zu finden, die alle Beteiligten gemeinsam tragen wollen und können." (FB16_rn_4)

["As the expectations of the participants for the network are very different and each member focusses on specific – but very different – problems, I consider that it is difficult to find higher order strategies, which all participants can or wish to support." (FB16_rn_4)]

"[...] verschiedene Interessenslagen unter einen Hut zu bekommen." (FB26_rn_4)

["[...] bringing together people with different interests" (FB26_rn_4)]

An additional problem is that the network participants lose their motivation and are not adequately engaged. A typical statement is as follows:

"[...] oft Passivität vieler Mitglieder in Lenkungsgruppen und AGs (es arbeiten immer nur dieselben und bringen Ideen ein)." (FB27_rn_4)

["[...] Many members of the management groups and working groups are passive. The people who work and provide ideas are always the same." (FB27_rn_4)]

Some respondents also stated that work within the network was made more difficult by the lack of resources.

**Network structures**

Closed questions with fixed answers or rating scales were used to enquire about the phase of network construction, as well as favourable and unfavourable factors.

As regards the favourable factors (Figure 1), most respondents to the questionnaire stated that a binding agreement was made during the construction phase of the network that results and information would be documented. Most respondents also stated that the role of the network manager or coordination office was bindingly specified in advance, as was the fact that each member of the network had equal rights. Less binding points included “the manner of reaching decisions”, “rules for collaboration”, “rules for communication within the network”, “written agreement for collaboration” and “binding distribution of tasks”.

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**Figure 4:** The network members as the fulcrum between the two success factors “effective work in the network” and “motivation of the network participants” (own illustration)
In the rating scales the respondents had to state to what extent specific favourable factors had been created in their networks during the phase of network construction. Here 14 of 17 statements were rated as “fully agree” or “largely agree” by more than 50 % of the respondents (● Figures 2). Agreement was only less for “Senior citizens’ health”).

– “Before founding the network, we investigated whether another theme is already emphasised in the region (e.g. “Improvement in pro-family services in the region” or “Senior citizens’ health”).”
– “Before founding the network, we created rules about avoiding conflicts.”
– “When marking out the necessary resources (financial, material, personal), we left some leeway, in case the network is subsequently expanded.”

● Figures 2 and 3 present an overview of all statements and the corresponding distribution on the scale.

The question on the origin of the network members showed that the size and heterogeneity of the network influenced its effectiveness: In Region 18, the network participants come from the areas of “sport”, “university and science”, “teaching facilities”, “politics”, “city administration”, “health and medicine” and “others”. Moreover, the collaboration is between participants from two cities, each with more than 250,000 inhabitants. One of these cities has a population of more than a million. Six of the seven respondents in this region stated that “ineffectiveness” was a problem.

Comparison of the results of the questionnaire with the literature

This examination of the essential factors in the phase of network construction showed that relatively few networks created rules at the start (● Figures 1 and 3). This may turn out to be a disadvantage and may explain why the two problems most often given by the respondents were lack of effectiveness within the network and occasional lack of motivation of the participants.

It was striking in this context that it was the two networks which combined relatively many different areas and which were not geographically near which were confronted with the problems of ineffectiveness, waste of time and difficulties in reaching decisions. Thus, high heterogeneity and number of network participants may lead, as expected, to problems with ineffectiveness.

However, the results of the questionnaire also show that many of the favourable factors for the phase of network construction – as identified in the present study – were considered in the regions examined, at least according to the respondents’ own statements. Thus, the participants seem to be clear that even a network based on voluntary work, lack of hierarchy and lack of obligation, cannot work in a promising manner without intensive planning and specifying the structures (● Figure 4).

Conclusion

The favourable and unfavourable factors for network construction that we examined in this study are orientated towards the factors which support the success of a network during the active phase. If the favourable factors are deliberately emphasised in the phase of network construction, the network may be focussed in the right direction. Indeed, the surveyed network members who predominantly considered the favourable factors were apparently able to report some successes, aside from the problems and difficulties with their network. Considerable time expenditure and additional work appear to be problems, as are (possible or real) deficiencies in the motivation of some participants. It is therefore to be recommended that rules and obligations should be specified to a greater extent in the phase of network construction. If networks cover a relatively large region and combine participants from many different areas, it appears to be particularly important that clear structures should be constructed in advance and obligations specified.

Limitations and outlook

As there is a general tendency for one sided (yes-no) questions to be affirmed, the results of the rating scale may have been too positive. The questions were all formulated positively. Moreover, it is difficult to employ a small and somewhat exploratory study to establish a link between the successes and problems in the active phase of the network and the factors created during its construction. Larger studies could research the phase of network construction in a more precise and intensive manner. For example, it would be expedient to study several networks scientifically from their initiation, as this would permit conclusions about the factors that might influence the problems and successes of the network.

In addition, it should be noted that the factors identified and developed here are presumably independent of
the theme of the network. In any case, networking appears to be an up-to-date and expedient approach to prevent overweight in children. This is why these networks should be constructed on a good and stable foundation, so that the work of preventing overweight can achieve long-term success.

M. A. Sina Scheerer
Martin-Luther-Universität Halle-Wittenberg
Institut Medien, Kommunikation & Sport
Department Sportwissenschaft
Brüderstraße 18, 48145 Münster
E-Mail: sina.scheerer@googlemail.com

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