

# Corporate health management: evaluation of an educational and environmental intervention to promote a balanced, less salty diet

## Part 2: coaching of catering teams

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### Abstract

As part of the Swiss Nutrition and Salt Strategy, a 12-month combined educational and environmental intervention was carried out in 2015–2016 with the aim of promoting a balanced diet with adequate salt content in seven organizations with staff canteens. The programs were evaluated based on survey data with a view to determining their suitability for use in corporate health management. The nutrition education promoted health literacy and food literacy among the employees who participated and it was able to trigger a change in behavior. The coaching of catering teams encouraged the catering staff to reformulate the foods, but for the most part, this change could not be consolidated due to operational barriers. Combined, the two programs offer a solid foundation for longer-term interventions in workplace settings where there is a desire to understand and promote health literacy and hence food literacy as quality features in all areas of a workplace.

**Keywords:** Corporate health management, educational intervention, environmental intervention, nutrition education, food literacy, coaching of catering teams, communal catering, sodium, salt

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### Introduction

This article examines the suitability of two intervention programs for corporate health management (CHM) which were implemented in parallel in seven Swiss-German organizations with staff canteens. The combined educational and environmental intervention in the workplace setting was intended to promote a balanced diet with adequate salt content.

Part 1 of the article (■■■ ERNÄHRUNGS UMSCHAU 12/2019) outlined the background and key protocol points of the intervention trial “Gesund & Gut: Na Klar!” (Healthy and Tasty: Sure!) and showed to what extent the education program implemented for employees could increase the participants’ health and food literacy and thus trigger a change in behavior.

Part 2 now examines the question of the extent to which coaching of communal catering (CC) teams with a focus on quality standards was able to trigger action and thus offer potential for a supportive nutritional environment in the staff canteens of the organizations.

### Methods

#### Logic model

◆ Figure 4 shows the logic model of the intervention trial. This 2nd part of the article concentrates on the marked environmental level, with a focus on the intermediate outcomes of organization-specific coaching of catering teams in the staff canteens for the gradual reduction of the salt content of luncheons.

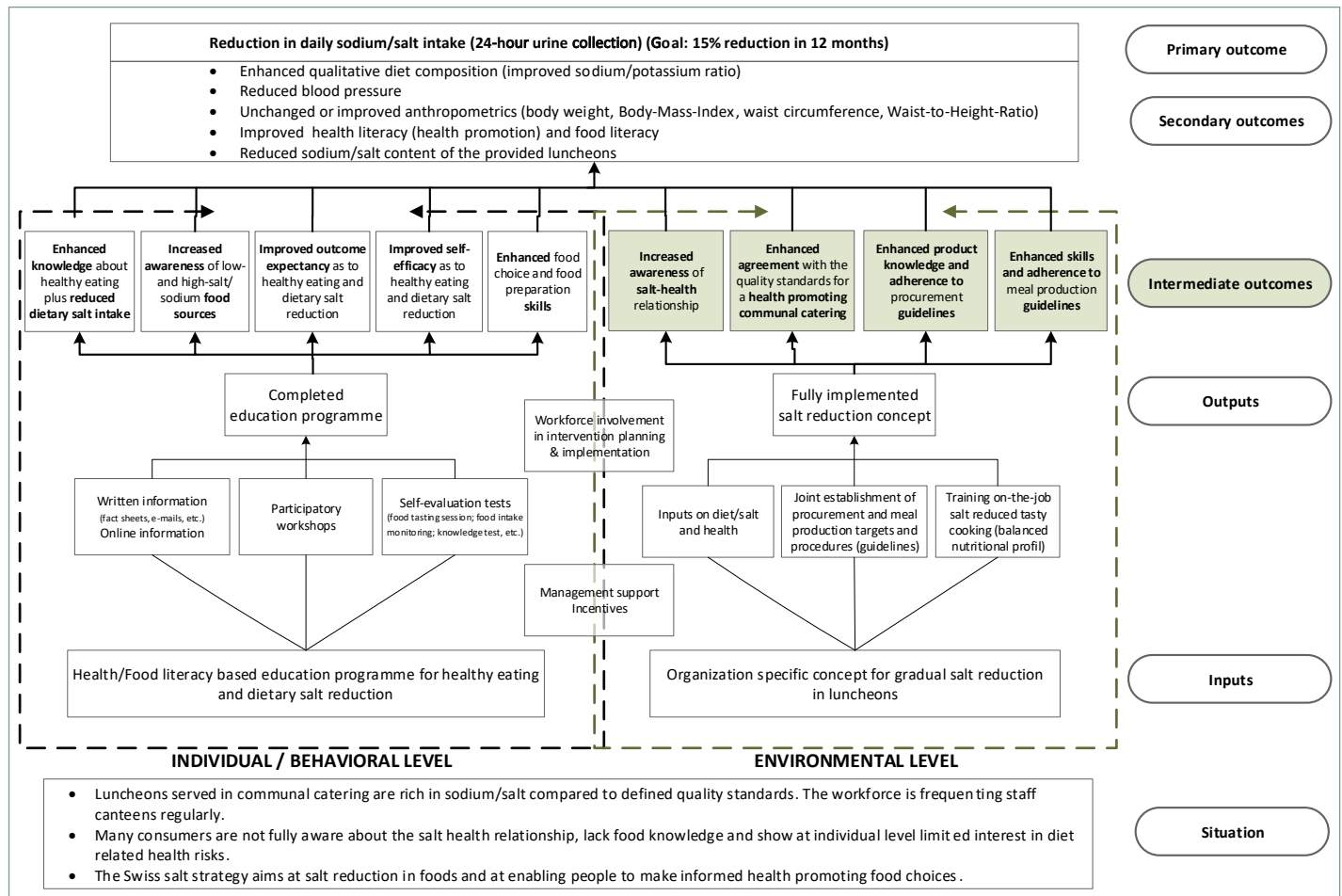


Fig. 4: Logic model of the combined nutrition intervention “Gesund & Gut: Na Klar!” (“Healthful & Tasty: Sure!”)  
24-h urine = 24-hour urine collection

## Coaching of catering teams in staff canteens

The coaching of catering teams followed the good practice approach in order to trigger a continuous change process in the participating CC facilities [47]. The focus was on implementing the Swiss quality standards for health-promoting CC [48] and, in particular, on implementing site-specific practical measures to reduce the salt content of luncheons to 2.5 g per plated menu. The program design took into account findings from earlier studies in Swiss CC [7, 28, 30]. In order to achieve gradual product reformulation, the CC facilities went through the steps of the Plan-Do-Check-Act cycle four times; participatory involvement and co-determination by the catering staff were central to this. Based on the “cognitive-behavior barrier model to HACCP guideline adherence” [49], ♦ Table 4 shows the steps taken in the coaching of catering teams towards sustainable action and thus compliance with the quality standards.

The coach’s function was to impart knowledge and provide advice. On the basis of a situation analysis which revealed a need for improvement in the catering offered, and with knowledge of the internal guidelines and possibilities, the coach assisted the CC teams to define goals and to select one or more suitable areas of

action. The decision to take specific measures and the design of these measures was always made by the CC team. Measures in the areas of food production and service, where appropriate combined with those in the area of management in the staff canteen, were considered.

## Evaluation of the coaching

The expected intermediate outcomes of the coaching of catering teams according to the logic model (♦ Figure 4) correspond to the dimensions of the used model to guideline adherence (♦ Table 4) [49]. They were operationalized and evaluated at the beginning, during and at the end of the coaching using three different questionnaires that took into account the change process. All questionnaires are available online with explanations [34]. The questionnaires were checked for content validity by the research team. In order to assess the actions of the CC facilities, this study used the information from the 23-item evalu-

| Steps to achieve sustainable action                                                                    |                                      | Catering staff tasks                                                                                                                                                                                                | Coaching phase                          | Coach tasks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Know-ledge</b><br> | Awareness, acquired facts            | Determining the intention to improve something in the catering offer. Defining the problem/project. Become acquainted with the Swiss quality standards.                                                             | Start                                   | <ul style="list-style-type: none"> <li>• Chairing of meetings and workshops</li> <li>• Specification of the project structure</li> <li>• Initiating the project group</li> <li>• Support for project planning</li> <li>• Presenting Swiss quality standards and other relevant recommendations</li> <li>• Lectures to enhance specific areas of knowledge, e.g. food intake recommendations</li> <li>• Provision of tools, e.g. for situation analysis or progress documentation</li> <li>• Support in setting goals and subgoals</li> <li>• Moderating team discussions on developing measures and outcome criteria</li> <li>• Guidance and advice on planning and implementation in everyday life</li> <li>• Support in monitoring progress and success</li> <li>• Support in reviewing goals and the drawing conclusions about new needs for improvement</li> </ul> |
|                                                                                                        | Familiarity                          | Compilation of documents and information for situation analysis. Discussion of the problem/project in the operational context.                                                                                      | Situation analysis, recognize the cause |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                        | Comprehension                        | Discussion of recommendations that are relevant to the change.                                                                                                                                                      | Recognize the need for improvement      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Attitude</b><br>   | Agreement                            | Recognizing one's own need for improvement. Defining goals and subgoals.                                                                                                                                            | Setting subgoals                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                        | Commitment, pledge                   | Brainstorming potential measures, weighting and selection of measures. Planning implementation steps, introduction to project documentation.                                                                        | Plan                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Action</b>                                                                                          | Introduction, adoption               | Implementation of measures in everyday life, e.g. in menu planning or food production. Documentation of the implementation steps. Passing on information to the entire team. Communication within the organization. | Do & Check                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                        | Sustained implementation (adherence) | Progress and success monitoring of the implemented measures. Inclusion of individual activities into routine activities. Drawing conclusions about new needs for improvement.                                       | Check & Act End                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Tab. 4: Steps and tasks for sustainable action in accordance with Swiss quality standards, by coaching phase [48, 49, 56]

ation questionnaire dealing with the practical implementation of measures and the expected barriers to maintaining them. Multiple answers were possible for each of the items considered. At the end of the coaching, the evaluation questionnaire was completed by the managing persons and CC staff who had taken part in at least one implementation workshop. The survey participants, who held a variety of roles in the CC facility, were asked to provide information from their personal perspective about the measures implemented, their experiences, and their views. Depending on their role in the catering facility, the type and extent of the involvement in the coaching, different answers were therefore expected within CC facility. In addition, the measures taken in a CC facility in the areas of food production, service and management were analyzed qualitatively with regard to their longer-term implementation in a final workshop. A separate questionnaire was used to characterize the CC facility prior to the start of the coaching [29].

### Statistics (part 2)

All of the questionnaires used in the coaching of catering teams were checked for completeness and consistency before data input and data preparation.

The statistical evaluations at the environmental level were carried out with a view to the CC facility of the seven organizations par-

ticipating in the trial. Due to the small sample size both at the organization level as well as in participation in the coaching and the associated surveys in each CC facility, only descriptive analyses were carried out. The survey results were prepared for each CC facility and summarized according to type of organization and type of catering facility operation. The analyses were run with the statistical software R 3.3.2 (www.r-project.org).

## Results

### Participation in the coaching of catering teams

The seven organizations participating in the intervention each represented two social service and welfare institutions, production/service businesses and university/research institutions and a federal administration facility.

• Table 5 shows baseline data for the associ-

| Characteristics                                                                |                |               |
|--------------------------------------------------------------------------------|----------------|---------------|
| Number of organizations with staff canteen                                     | N              | 7             |
| Catering facility operation, number of CC facilities                           |                |               |
| in-house                                                                       | n              | 2             |
| outsourced                                                                     | n              | 5             |
| Number of luncheons sold per day                                               | median (range) | 232 (128–636) |
| Convenience level                                                              | N              | 7             |
| (Specification of the two most common for each CC facility)                    |                |               |
| level 0 (basic level, unprocessed foods)                                       | n              | 4             |
| level 1 (ready-for-kitchen products)                                           | n              | 4             |
| level 2 (ready-to-cook products)                                               | n              | 4             |
| level 3 (ready-to-end-cook products)                                           | n              | 0             |
| level 4 (ready-to-heat products)                                               | n              | 2             |
| level 5 (ready-to-eat products)                                                | n              | 0             |
| Number of staff members, all CC facilities <sup>a</sup>                        | N              | 131           |
| with professional certificate, diploma etc.                                    | n (%)          | 79 (60.3%)    |
| unskilled                                                                      | n (%)          | 52 (39.7%)    |
| Level of knowledge of Swiss quality standards, survey respondents <sup>b</sup> | N              | 54            |
| known (heard of them)                                                          | n (%)          | 35 (64.8%)    |
| seen or read parts of the brochure                                             | n (%)          | 20 (37.0%)    |

Tab. 5: Description of the communal catering facilities [27]

CC = communal catering

<sup>a</sup> Includes all the people who work for the kitchen, restaurant, hotel trade and other areas of CC facilities.

<sup>b</sup> Kick-off questionnaire at the start of the coaching

ated, mostly medium-sized CC facilities and their staff. The CC facilities of the two social service and welfare institutions were managed in-house, the operation of the other five was outsourced to catering companies [27]. Of a total of 131 CC staff, 89 were involved in the coaching. Around one third were already quite familiar with the Swiss quality standards before the start of the intervention.

### Outcomes of the coaching of catering teams

The consideration concentrates on the longer-term practical adherence to the guidelines (action), which was the aim of the coaching process (♦ Table 4), in accordance with the logic model (♦ Figure 4).

Participation in the evaluation survey was higher for in-house CC facilities. Not all staff members who were involved in the coaching of catering teams also took part in the survey (♦ Table 6).

♦ Table 6 shows firstly how many of the survey participants (absolute and relative) implemented one or more measures for salt reduction in the various areas. Irrespective of the type of organization or type of catering

facility operation, these were primarily measures in the areas of food production and service. In most cases, changes were made to at least three menu components, but especially to vegetable and starch side dishes. Appropriate steps were taken in seasoning and tasting as well as in cooking methods, and less frequently in the recipes. The salt shakers were removed from the tables in two staff canteens, one with in-house and one with outsourced catering facility operation.

Secondly, ♦ Table 6 shows how many of the survey respondents personally assume that individual reasons prevent the further implementation of the developed measures in their staff canteens. In the assessment of the respondents, regardless of the type of organization or type of catering facility operation, the expectations of the diners in particular could make it more difficult to implement salt reduction measures in the longer term. Resource problems were assessed more critically by the survey respondents from outsourced CC facility operations. On the other hand, the survey respondents from in-house CC facility operations rather saw corporate guidelines as limiting.

### Discussion

The evaluation of the environmental intervention was interested in the CC facilities as study units and not in individuals. Although the staff members involved in the coaching of catering teams were surveyed, the results were examined for CC facilities of the supe-

| Type of organization                                  | Organizations with staff canteens |                     |                      |                |
|-------------------------------------------------------|-----------------------------------|---------------------|----------------------|----------------|
|                                                       | Social service and welfare        | Production, service | University, research | Administration |
| Number of organizations (N)                           | 2                                 | 2                   | 2                    | 1              |
| CC, type of catering facility operation               | In-house                          | Outsourced          |                      |                |
| Number of staff members (coaching) (N)                | 33                                | 23                  | 19                   | 14             |
| Number of survey participants (N) <sup>b</sup>        | 11                                | 5                   | 4                    | 2              |
| <b>AREAS OF MEASURES</b>                              |                                   |                     |                      |                |
| <b>Food production and service</b>                    | <b>n (%)<sup>c</sup></b>          | <b>n (%)</b>        | <b>n (%)</b>         | <b>n (%)</b>   |
| 1–2 menu components <sup>d</sup>                      | 2 (18.2%)                         | 2 (40.0%)           | 1 (25.0%)            | 0 (0.0%)       |
| 3–8 menu components                                   | 7 (63.6%)                         | 2 (40.0%)           | 3 (75.0%)            | 2 (100.0%)     |
| Cooking methods                                       | 1 (9.1%)                          | 2 (40.0%)           | 2 (50.0%)            | 0 (0.0%)       |
| Seasoning and tasting                                 | 5 (45.5%)                         | 2 (40.0%)           | 4 (100.0%)           | 1 (50.0%)      |
| Portion size, scooped amount                          | 2 (18.2%)                         | 0 (0.0%)            | 2 (50.0%)            | 1 (50.0%)      |
| <b>Management</b>                                     | <b>n (%)<sup>c</sup></b>          | <b>n (%)</b>        | <b>n (%)</b>         | <b>n (%)</b>   |
| Menu planning (the menu)                              | 2 (18.2%)                         | 1 (20.0%)           | 0 (0.0%)             | 0 (0.0%)       |
| Recipes                                               | 3 (27.3%)                         | 2 (40.0%)           | 0 (0.0%)             | 0 (0.0%)       |
| Procurement, food selection                           | 1 (9.1%)                          | 1 (20.0%)           | 1 (25.0%)            | 0 (0.0%)       |
| Salt and salt containing condiments in the restaurant | 1 (9.1%)                          | 0 (0.0%)            | 2 (50.0%)            | 0 (0.0%)       |
| Communication with the diner                          | 0 (0.0 %)                         | 1 (20.0 %)          | 1 (25.0%)            | 0 (0.0%)       |
| <b>BARRIERS TO MAINTENANCE</b>                        | <b>n (%)<sup>c</sup></b>          | <b>n (%)</b>        | <b>n (%)</b>         | <b>n (%)</b>   |
| Organization or catering company guidelines           | 4 (36.4%)                         | 1 (20.0%)           | 0 (0.0%)             | 0 (0.0%)       |
| Personnel shortage                                    | 0 (0.0%)                          | 2 (40.0%)           | 1 (25.0%)            | 0 (0.0%)       |
| Personnel changes                                     | 2 (18.2%)                         | 2 (40.0%)           | 0 (0.0%)             | 0 (0.0%)       |
| Time pressure                                         | 0 (0.0%)                          | 2 (40.0%)           | 2 (50.0%)            | 0 (0.0%)       |
| Measures not considered to be useful                  | 0 (0.0%)                          | 1 (20.0%)           | 0 (0.0%)             | 0 (0.0%)       |
| Diners' wishes/expectations                           | 4 (36.4%)                         | 2 (40.0%)           | 4 (100.0%)           | 2 (100.0%)     |
| Other                                                 | 0 (0.0%)                          | 1 (20.0%)           | 0 (0.0%)             | 1 (50.0%)      |

Tab. 6: Frequency of implementing salt reduction measures and expected barriers to their maintenance among survey respondents, by type of organization and catering facility operation<sup>a</sup>

CC = communal catering

<sup>a</sup> According to evaluation questionnaire [34]: In which of the following areas were you able to implement measures of the catering coaching? What reasons might there be that the measures developed could not be implemented in your staff canteen in the future? Several answers are possible.

<sup>b</sup> The questionnaire was completed independently of the respondents' role in the CC facility. The data refer to the activities and views of the survey participants (N) who were involved in the coaching of catering teams.

<sup>c</sup> Frequency of the various responses among the survey participants in the CC facilities in each type of organization. Multiple answers were possible.

<sup>d</sup> Vegetable, starch, meat and fish, vegetarian protein components, multi-component dishes, soups, meat and pasta sauces, salad dressings

rior organizations. The coaching of catering teams allowed the seven CC facilities to familiarize themselves better with the Swiss quality standards [48] and use them as a benchmark for their work. The structured coaching of catering teams was suitable to trigger action; measures were taken in all CC facilities to improve the range of food offered in staff canteens (♦ Table 6). There was therefore potential to provide a supportive nutrition environment for the employees in the organizations and, in particular, the participants in the nutrition education. However, the involvement of the individual CC staff members in the coaching activities, includ-

ing the surveys, varied between and within the CC facilities, depending on the catering management's decision and the number of staff available. After a good deal of thought (♦ Table 4), the CC teams considered the various options for reducing the salt intake of their diners in the staff canteen. They acknowledged that the composition and balance of luncheons at the workplace were important for salt intake because of how frequently they

were eaten and the fact that they often had a high sodium density [50]. Targeted product reformulations are considered promising to be able to influence consumer health positively [51]. The approach promoted by the coach of making continuous improvements to the meal formulation according to Swiss quality standards [48], but above all only reducing salt in small, hardly noticeable steps, was not consistently implemented by all teams. This was aggravated by the fact that there were either no recipes available or they were not adapted or followed (♦ Table 6). The measures in the area of meal production resulted in reductions in salt content, some of which were noticeable in the taste, which were immediately counteracted for fear of losing customers. This made it more difficult to generally stabilize the salt content at a lower average level. Overall, the median salt content of the most frequently consumed plated menus hardly changed at all. The changes ranged from -2.4 to +3.2 g/plate, but the recommended value in the quality standards of 2.5 g/plate [48] proved to be feasible [25, 52].

Individual CC facilities took advantage of the adjustment in the scooped amount of individual menu components to improve the salt content but also the balance of a plated menu [53] (♦ Table 6). However, in the context of customer satisfaction, this measure was not prioritized for implementation into everyday life [54]. The diners' expectations or the fear of customer dissatisfaction were identified as the most important barrier to a longer-term change in the range of products and services on offer for salt reduction. The other barriers mentioned for a permanent implementation of the developed measures (♦ Table 6) reflected the resource problems experienced during the intervention in individual staff canteens. They also supported the research group's observation that the support and motivation provided by organization management and the management of the CC facility as well as within the catering team were decisive drivers for successful intervention at an environmental level and for sustainable continued application of the measures.

## Strengths and limitations

An essential limitation of the intervention trial "*Gesund und Gut: Na Klar!*" (Healthy and Tasty: Sure!) was the low participation of organizations and consequently also of CC facilities in the coaching of catering teams. The coaching itself was also limited due to circumstances at the level of the individual organization and CC facility. Depending on the organization, the implementation as part of a standardized research project did not meet with the same approval at all hierarchical levels and among all employees of the CC facilities. The number of staff members per CC facility who participated in the surveys during coaching therefore varied greatly and was generally low, which is why only descriptive analyses were possible. However, the final workshop provided an opportunity to discuss the measures taken and experiences in detail with each CC facility and to generate valuable practical input to optimize the coaching program.

The methodology of the program was sound and included repeated food analyses, which allowed objective monitoring of the reformulation activities [27]. It was not possible to measure the effect of removing the salt shakers from the tables – or of diners giving up their use – by checking the sodium content of the menus; however, this measure may have contributed to a reduction in the salt intake of training participants and other diners. Since participation in the nutrition education program was voluntary in the research context, there was a tension for the CC facilities between the expectations of relatively fewer diners who wanted a concrete change in what was offered (balanced diet, preparation with less salt) and a majority of non-participants who were not sensitized to such changes. In contrast, a combination of an educational intervention with an environmental intervention within the framework of the CHM offers an organization-specific platform to include possibly all employees in the education program in a targeted manner (■■■ Part 1 ERNÄHRUNGS UMSCHAU 12/2019) and to define and shape the focus of the coaching of catering teams in line with needs. In principle, it was possible to adapt the program for coaching of catering teams flexibly to the strongly varying general conditions in the CC facilities, which benefits its use in the CHM but limits comparability between the facilities in the research context. It was not possible to estimate exactly what influence the changes in the CC or the training alone had on the food consumption and in particular on the salt intake of the education participants. This requires a much more complex study design, which is difficult to carry out in an everyday context and within the framework of standard research resources.

## Conclusion

To the best of our knowledge, the present partial evaluation of the project "*Gesund & Gut: Na Klar!*" (Healthful & Tasty: Sure!) to promote a balanced diet with adequate salt content in a workplace setting [27] provides the first insights into the suitability of a simultaneous educational and environmental intervention for CHM

in organizations with staff canteens in Switzerland. This study, as well as other studies (e.g. [55]), showed that parallel changes on the educational and environmental level in the workplace setting are important in order to promote a balanced diet for employees. The nutrition education program and the coaching of catering teams proved their worth in practice and were able to stimulate positive changes in the behavior and actions of the participants at both intervention levels within 12 months. To ensure the transfer of knowledge into practice, the intervention programs were published as manuals for professionals, taking into account practical experience and the findings of the evaluation [33, 56]. These manuals form a basis for longer-term interventions in the workplace setting which aim to understand and promote health literacy and thus also food literacy [31] as quality characteristics in all areas of an organization [57, 58]. This requires close interaction between CC staff and workplace employees in order to promote mutual understanding and cooperation in the context of CHM.

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#### Conflict of Interest

The authors declare no conflict of interest.

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