

How can process-guided methods be successfully implemented in practice in nutrition counselling and dietetic therapy?

Results from the Planning Dietetic Intervention and Dietetic Outcome Evaluation process steps

Maren Peuker, Laura Hoffmann, Karen Amerschläger, Irmtraud Weidenbach, Roland Radziwill, Kathrin Kohlenberg-Müller

Abstract

Nutrition professionals need tailor-made concepts to enable them to implement process models in nutrition counselling and dietetic therapy. The aim of this qualitative study was to collaboratively develop concepts for the process steps Planning Dietetic Intervention and Dietetic Outcome Evaluation in three focus groups consisting of nutrition professionals working in outpatient and inpatient nutrition counselling and dietetic therapy.

The development and testing of the concepts revealed challenges and potential advantages that were reflected upon in collaboration with practitioners and used to develop the concepts further. A distinction must be made between the general conditions in acute care hospitals and those in outpatient clinics, since these different conditions mean different degrees of feasibility for the concepts. The provision of intensive support, together with collaborative reflection and discussion among nutrition professionals promotes the development of practicable documentation concepts.

Citation

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M. Sc. Maren Peuker¹

M. Sc. Laura Hoffmann¹

Dipl. oec. troph. Karen Amerschläger²

Dipl. oec. troph. Irmtraud Weidenbach³

Prof. Dr. Roland Radziwill⁴

Prof. Dr. Kathrin Kohlenberg-Müller¹

¹ Hochschule Fulda – University of Applied Sciences

Fachbereich Oecotrophologie

Modellprojekt für die diätetische Versorgung im Raum Fulda (MoDiVe)

Leipziger Str. 123, 36037 Fulda

kathrin.kohlenberg-mueller@oe.hs-fulda.de

² Praxis für Ernährung, Bad Salzschlirf

³ Klinikum Bad Hersfeld GmbH, Institut für Gesundheitsberufe

⁴ Klinikum Fulda gAG – Apotheke und Ernährungszentrum

Background

Process-guided methods offer nutrition professionals the opportunity to plan, implement and evaluate dietetic interventions in a structured manner [1]. This enables them to make a decisive contribution to quality improvement in nutrition counselling and dietetic therapy (NCDT) [2–5]. The *Dietetic Care Process* (DCP) developed as part of the EU-funded *Improvement of Education and Competences in Dietetics* (IMPECD) project can be used as a process model [6]. It consists of five process steps: Dietetic Assessment, Dietetic Diagnosis, Planning Dietetic Intervention, Implementing Dietetic Intervention and Dietetic Outcome Evaluation [4–7] (♦ Figure 1). These are core steps that the majority of process models used in dietetics, such as the *German-Nutrition Care Process* (G-NCP) [8], have in common [9] and which various professional associations address [8, 10–12]. Work on how these models function in practice has only just begun [4, 5]. The challenge is implementing the

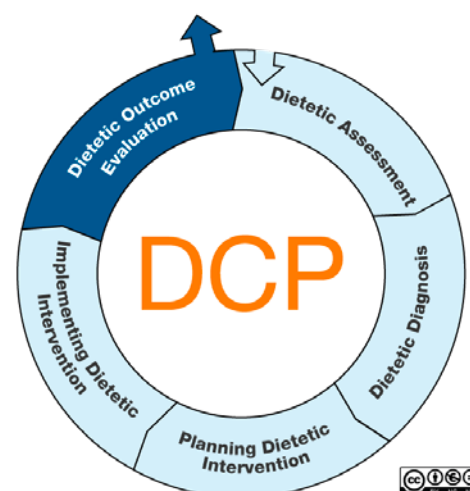


Fig. 1: Process model *Dietetic Care Process* (DCP) (eigene Darstellung nach [6])

model concepts in practice. Translational research focusing on the transfer of knowledge into healthcare practice [13] can make an important contribution to this. Following on from the previously published article on challenges and potential advantages of translating process step 1 (Dietetic Assessment), and process step 2 (Dietetic Diagnosis) [4], into practice, this article focuses on steps 3 and 5: Planning Dietetic Intervention and Dietetic Outcome Evaluation.

Process step 3: Planning Dietetic Intervention

Planning Dietetic Intervention is based on the Dietetic Diagnosis and the dietetic problems this identifies (the P of the PASR¹ statements). A key element of this process step is the definition of goals for the further course and the desired dietetic outcome [6] (♦ Table 1). The key components of planning can be summarized using the PGIE model (*Problem – Goal – Plan/Intervention – Evidence-Based Rationale*) [14]. All the planned elements of the intervention should be supported by scientific evidence, i.e., they should be evidence-based. These aspects are then incorporated into an intervention plan, which is central to Planning Dietetic Intervention [14] (♦ Figure 2).

♦ Figure 3 shows the steps to be taken when planning the dietetic intervention.

Process step 4: Implementing Dietetic Intervention

The fourth process step is the implementation of the dietetic intervention, which includes the recording of monitoring parameters. Due to the complexity of the individual approaches to this and the diverse methods used [20], this process step is not being considered in the present article.

Process step 5: Dietetic Outcome Evaluation

The Dietetic Outcome Evaluation is the fifth and final step of the DCP. Its aim is to determine how successful the dietetic intervention has been on various levels. To determine this, data from predefined outcome indicators are compared with data from the Dietetic Assessment and the reference standards in order to make statements about whether the objectives have been achieved [6] (♦ Table 2).

♦ Figure 4 shows the steps to be taken when carrying out the Dietetic Outcome Evaluation [1].

| | |
|----------------------------|--|
| Allocation | Planning Dietetic Intervention is the third step of the DCP. |
| Central statement | It is the development of a dietetic intervention plan by setting goals and determining the strategy to solve the dietetic problems. |
| Aims and principles | The aim is to develop an intervention by changing identifiable outcomes in collaboration with the client and other health professionals. All activities are planned with respect of resources. |
| Operationalization | The dietetic intervention plan consists of defined and agreed treatment goals, type of intervention, process and outcome indicators and limitations. |

Tab. 1: Planning Dietetic Intervention (own presentation in accordance with [6]) DCP: Dietetic Care Process

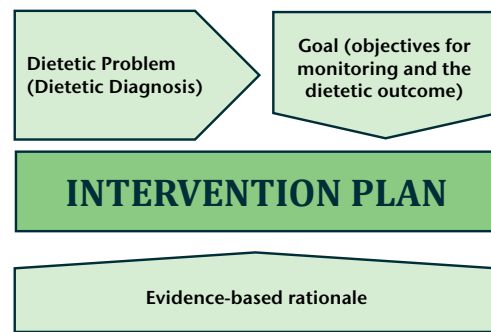


Fig. 2: PGIE (*Problem – Goal – Plan/Intervention – Evidence Based Rationale*) model (own presentation in accordance with [14])

Distinction between monitoring and outcome evaluation

Monitoring and outcome evaluation differ in terms of the timing and frequency of the data collection and measurements [1] (♦ Figure 5).

Objectives and research questions

The aim of this study was to develop and test concepts for the implementation of the process steps Planning Dietetic Intervention and Dietetic Outcome Evaluation in collaboration with practitioners and to reflect on challenges, potential advantages and ideas. The research questions were:

1. How can the model concepts for Planning Dietetic Intervention and Dietetic Outcome Evaluation be implemented in practice?
2. What are the challenges and potential advantages when translating the model into process-guided methods as used in practice?

Methodology

The research process [4] previously developed by the working group was used in this qualitative study. Practitioners were intensively involved in line with the principles of translational healthcare research and participatory healthcare research [22, 23]. The requirements for data protection under the EU General Data Protection Regulation were taken into account [24].

¹ The European IMPECD project explicitly agreed upon the abbreviation PASR, which stands for *Problem P, Aetiology A* (British spelling), *Signs/Symptoms S* and *Resources R*. However, in the G-NCP, the abbreviation PESR is used. This stands for *Problem P, Etiology E* (American spelling), *Signs/Symptoms S* and *Resources R*.



| |
|---|
| 1. Prioritize dietetic diagnoses |
| Example: ² 1) sugar intake too high, 2) energy intake too high, 3) dietary fiber intake too low |
| 2. Consult evidence-based guidelines |
| Example: <ul style="list-style-type: none"> • Quantitative recommendation on sugar intake in Germany [16] • S3 interdisciplinary guideline on quality “Prevention and treatment of obesity” [17] • Carbohydrate intake and prevention of selected diet-related diseases [18] |
| 3. Determine progress objectives and the intended dietetic outcome together with the client in a collaborative manner, obtain the client’s consent |
| Example: General objective: Client achieves a long-term reduction in their daily sugar intake Measurable progress objectives: Client... <ul style="list-style-type: none"> • is able to recognize and assess the sugar content of packaged foods based on the nutrition label by the end of the consultation. • is aware of suitable alternatives to sugar-sweetened soft drinks by the end of the consultation. • will have replaced at least half of their daily intake of sugar-sweetened soft drinks with suitable alternatives by their next consultation appointment in four weeks’ time. • will have reduced the amount of sugar in their coffee by half and the amount of candy such as fruit gummies they consume by half (100 g) per day by the next consultation appointment in four weeks’ time. Dietetic Outcome: Client... <ul style="list-style-type: none"> • uses sugar sparingly and reduces their intake of high-sugar foods. • consumes <10% of their daily energy intake in the form of sugar. |
| 4. Create an intervention plan with measures, select the intervention based on the best available evidence |
| Example: Dietary recommendation: A balanced diet that leads to a reduction in daily sugar intake, in particular by reducing the intake of sugar-rich foods such as sugar-sweetened soft drinks and confectionery and by using sugar sparingly. Form of intervention: Nutrition education: specific nutrition education unit on the topic of sugar (which empowers the client to take action) Approach to behavior change: Teaching and learning methods: Insights into the topic of sugar in food (cognitive) Materials: Use of food models (demonstration: cognitive and psychomotor) for working out and discussing low-sugar alternatives (discussion taking resources into account: cognitive, affective), use of recipe suggestions for low-sugar drink alternatives (learning by example: cognitive, psychomotor) |
| 5. Define the duration and frequency of the intervention |
| Example: Six appointments of 45–90 minutes every 4 weeks |
| 6. Define indicators for progress (monitoring) and the dietetic outcome |
| Example: Target indicators for monitoring: Review at all appointments using a food record: <ul style="list-style-type: none"> • Reduced intake of sugar, sugary foods and sugar-sweetened soft drinks • <10% of total energy intake in the form of sugar Target indicators for the dietetic outcome: Review after approx. six months (6th appointment): <ul style="list-style-type: none"> • Reduced intake of sugar, sugary foods and sugar-sweetened soft drinks • <10% of total energy intake in the form of sugar • Fasting plasma glucose <100 mg/dL |
| 7. Define responsibilities |
| 8. Determine necessary resources |
| 9. Optimize the intervention by providing resources |
| 10. Take limitations into account and apply risk management strategies if necessary |

Fig. 3: Steps in Planning Dietetic Intervention (own presentation in accordance with [11, 14, 15, 19])

The implementation of the process steps was investigated in the NCDT of an acute care hospital (AC) and in the outpatient NCDT (oNCDT). Three focus groups (FGs) were formed: FG 1 consisted of all nutrition professionals from the AC (n = 4) and FG 2 consisted of nutrition professionals from oNCDT (n = 4). They were

² The full case study can be found in: Kohlenberg-Müller K, Hoffmann L, Peuker M: *Prozessgeleitet Arbeiten in der Ernährungsberatung und -therapie: Anleitung und Übungen*. <https://fuldok.hs-fulda.de/opus4/frontdoor/index/index/docid/1020> (last accessed on 30 November 2023).



recruited on a voluntary basis from interested participants in the *Fulda Dietetics Forum (Diätetikforum Fulda)*, a regional training and networking event for nutrition professionals [25]. In FG 1 and FG 2, the approach to implementing the process steps was developed together with practitioners. These practical concepts were written in the form of documentation templates and were then tested, assessed and adapted as required – on paper at the AC and digitally in the oNCDT context. In FG 1, all four nutrition professionals conducted two pretests with anonymized clients they had selected themselves. In FG 2, the nutrition professionals took part in a usability test. This was done using anonymized dietetic interventions that were documented in advance in analog form.

FG 3 consisted of all participants who attended the *Fulda Dietetics Forum* events “Planning Dietetic Intervention” (January 2022, n = 15) and “Dietetic Outcome Evaluation” (July 2022, n = 7). In FG 3, the practical concepts were tested using a case study, with the nutrition professionals working as a group.

| | |
|----------------------------|--|
| Allocation | Dietetic Outcome Evaluation is the fifth step of the DCP and can be linked to a further assessment and/or other steps of the DCP. |
| Central statement | It is the predefined systematic and structured approach to analyse the outcome of the implemented dietetic intervention at a defined point of time. |
| Aims and principles | It aims to evaluate the success of the planned and implemented dietetic intervention and to which extend the dietetic related problem is solved. |
| Operationalization | The predefined outcome indicators are assessed. The outcome will be evaluated by comparison with corresponding assessment information and reference standards. |

Tab. 2: **Dietetic Outcome Evaluation** (own presentation in accordance with [6])
DCP: *Dietetic Care Process*

The conversations were documented anonymously in the form of minutes or as keywords on pinboards. The feedback was evaluated in joint discussions. The visualizations and minutes were analyzed using the Mayring method of qualitative content analysis [26]. The results were recorded in writing and sent to the participants for comment.

| | | | |
|---|-------------|--|--|
| 1. Analysis, interpretation and decision-making: Monitoring and Outcome Evaluation | | | |
| Client's perspective | | | |
| 1.1 Monitoring: Continuously interpret deviations from target/reference values and counteract them | | | |
| 1.2 Outcome Evaluation: Compare results/measured values with reference values and determine the extent to which the objective has been achieved; make decisions about concluding, re-evaluating or continuing the dietetic intervention | | | |
| Example: | | | |
| | | Target indicator: reduced sugar intake of <10% of total energy intake per day | Target indicator: fasting plasma glucose <100 mg/dL |
| Assessment | 05 Jan 2023 | 204.8 g/day, 35% of energy | 112 mg/dL |
| Monitoring | 09 Feb 2023 | 148.1 g/day, 25% of energy | – |
| | 09 Mar 2023 | 126.5 g/day, 22% of energy | – |
| | 06 Apr 2023 | 130.1 g/day, 22% of energy | – |
| | 04 May 2023 | 83.5 g/day, 14% of energy | – |
| Outcome | 01 Jun 2023 | 83.6 g/day, 14% of energy | 102 mg/dL |
| Overarching objective: Client achieves a long-term reduction in their sugar intake. The target of <10% of total energy intake has not been fully achieved. However, the reduction to 14% of total energy intake is a very positive development. This means that sugar intake was reduced by a total of 21 percentage points. | | | |
| Dietetic care perspective – meta level | | | |
| 1.3 Evaluate the effectiveness of the dietetic intervention across the board (including the extent to which the effects can be extrapolated to all clients in general) | | | |
| 1.4 Also analyze dietetic interventions that have not been completed (due to non-participation and/or discontinuation) | | | |
| 1.5 Evaluate long-term feasibility and impact for dietetic care | | | |
| Nutrition professionals' perspective | | | |
| 1.6 Carry out personal reflection to continuously increase professional performance | | | |
| 2. Documentation, reporting and dissemination | | | |
| 2.1 Document all data and results and integrate them into discharge management | | | |
| 2.2 Share experiences with colleagues in order to continue developing professionally | | | |
| 2.3 Identify and inform any groups with a potential interest, e.g. healthcare professionals, clients, health insurance companies, developers, professional associations, politicians | | | |

Fig. 4: **Steps in the Dietetic Outcome Evaluation** (own presentation in accordance with [1, 19, 21])

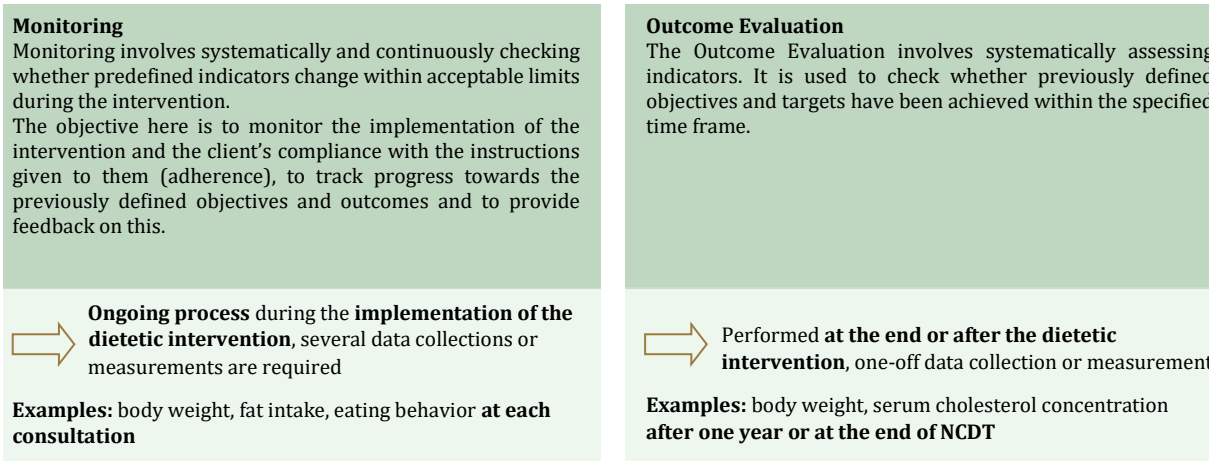


Fig. 5: Overview of the differences between Monitoring and Outcome Evaluation (own presentation in accordance with [1])
NCDT: nutrition counselling and dietetic therapy

The implementation concepts that were developed in a participatory manner were then discussed and reflected upon in the working groups, resulting in practical concepts for achieving the desired digital implementation in the AC and in the oNCDT setting [4].

Results

How do the model concepts for Planning Dietetic Intervention and for Dietetic Outcome Evaluation fit into the AC?

The collaborative process of developing practical documentation concepts in the AC setting initially proved to be challenging. Complicating factors included limited resources in terms of time and the nutrition professionals' limited knowledge and experience of process models. Regular meetings focused on understanding how to switch to this process-guided documentation concept steadily improved the motivation of the participating nutrition professionals. It emerged that the model concepts cannot be fully translated into practice in the AC. Adjustments had to be made, particularly due to the frame conditions at the time.

Process step 3: Planning Dietetic Intervention

The prioritization of the dietetic diagnoses, which was required for the planning, was largely carried out by the nutrition professionals (5 out of 8 pretest forms). However, they did not prioritize the dietetic diagnoses from the Dietetic Diagnosis process step, but instead noted other diagnoses. Instead of the dietetic problems that had been documented in PASR statements, conditions such as obesity were noted again.

According to the nutrition professionals, NCDT in the AC is based on the German Nutrition Society (*Deutsche Gesellschaft für Ernährung*, DGE) dietary recommendations. The literature that was used was listed in the pretest forms, but not always in full. Examples of what the nutrition professionals documented included "healthy nutrition/DGE" or "DGE guidelines".

From the nutrition professionals' point of view, setting objectives in advance is only possible to a limited extent because objectives depend heavily on the client's current condition³. In the pretest, 7 out of 8

questionnaires contained objectives that mostly did not meet the SMART criteria (specific, measurable, attractive, realistic, time-bound).

The nutrition professionals' recording of information on the duration and frequency of the intervention was often incomplete (3 out of 8 pretest questionnaires). The nutrition professionals were in favor of integrating monitoring parameters into the documentation concept. However, there were gaps in the documentation of the monitoring parameters in the pretest forms – the relevant information was not recorded in 7 out of 8 of them.

The aspects of materials used in the dietetic intervention and the involvement of other professions were mostly fully documented. At the nutrition professionals' request, communication with other professional groups such as doctors, nursing staff, parenteral/enteral care service, wound and ostomy care services, kitchen staff and other professional groups was integrated into the documentation concept.

The model concepts suggested that the following content be included: "determine necessary resources", "optimize the intervention by providing resources" and "take limitations into account and apply risk management strategies if necessary". However, it emerged that these aspects were unfamiliar and were therefore not feasible in practice.

³ This publication uses the term client to include both patients with an illness as well as healthy individuals who seek NCDT [1].



Process step 5:

Dietetic Outcome Evaluation

Checking the dietetic outcome poses a particular challenge in NCDT in the AC setting due to the clients' short length of stay. In 4 out of 8 pretest forms, the nutrition professionals documented that the evaluation was not possible because the client had been discharged. It was also difficult to check whether objectives had been met. In 4 out of 8 pretest questionnaires, the nutrition professionals ticked "Evaluation not possible at this time". In the other 4 out of 8 questionnaires they did not provide any information. The nutrition professionals expressed early concerns about the feasibility of evaluating the dietetic outcome and checking whether the objectives had been met. The checkbox for "Evaluation not possible at this time" was added at their request. The fields "Final recommendation(s) for the patient" and "Recommendation for oNCDT (yes/no)" were also included in the documentation concept following suggestions from the nutrition professionals.

Ultimately, the participants in FG 1 and FG 3 assessed the feasibility of the third and fifth process steps in the AC as limited. Particular challenges that were identified included the clients' limited length of stay, clients being discharged, and the limited time available to nutrition professionals.

How do the model concepts for Planning Dietetic Intervention and for Dietetic Outcome Evaluation fit into the oNCDT setting?

The nutrition professionals in the oNCDT setting were highly motivated to develop the concepts for implementing these two process steps in practice and showed great interest in the task. Through the in-depth discussions, it became clear that the model concepts for the process steps could be easily translated into the oNCDT setting with only minor adjustments.

Process step 3:

Planning Dietetic Intervention

The usability test and the discussion in FG 2 showed that – with a few exceptions – the model concepts for this process step were easy to implement. Defining monitoring parameters proved to be a challenge because the meaning of these parameters was not clear to most of the participants. Previously, the nutrition professionals had never used them in practice, or if they did use them, they did

so unconsciously. According to the nutrition professionals, aspects such as content or time cannot always be planned in advance. They said that these aspects would need to be adapted to the client's needs and could therefore change over the course of the dietetic intervention. The duration of the consultations varies depending on whether they are initial or follow-up consultations. The same applies to the frequency of the consultations. This can vary depending on the indication. Also, at the beginning of the intervention, shorter intervals are often planned between the appointments, and later the intervals are longer.

Process step 5: Dietetic Outcome Evaluation

The nutrition professionals judged the implementation of the model concepts for Dietetic Outcome Evaluation in the oNCDT setting to be feasible. An important prerequisite for them is that clear objectives with indicators and target and reference values have been defined in advance. At the nutrition professionals' request, gradations such as "partially achieved" were integrated into the documentation concept for recording the achievement of objectives.

The results from FG 2 and FG 3 showed that the model concepts were feasible in the oNCDT setting, mainly thanks to the duration of the dietetic intervention, which generally extended over a longer period of time. The nutrition professionals judged the documentation concept to be structured, clear and user-friendly. They initially judged its implementation to be time-consuming and asked the question "How can we fit this in?"

What challenges, potential advantages and ideas can be identified for the implementation of process-guided methods in practice?

Participants at the *Fulda Dietetics Forum* (FG 3) identified challenges as well as potential advantages and ideas for the practical implementation of the Dietetic Intervention and Dietetic Outcome Evaluation (♦ Figure 6 and ♦ Figure 7).

Discussion

Addressing how process models can be implemented in practice is a crucial factor for quality improvement in NCDT [4, 5, 7]. The results show that the model concepts for the process steps Planning Dietetic Intervention and Dietetic Outcome Evaluation are currently implemented in practice to varying degrees. The main reason for this is that the general conditions in the AC and in outpatient clinics differ significantly. Gaps in the implementation of the Dietetic Assessment and the Dietetic Diagnosis have a strong impact on the feasibility of the two process steps under consideration here because the data collected together with the dietetic diagnoses form the foundation of Planning Dietetic Intervention and Dietetic Outcome Evaluation [4].

The implementation of the process steps in the AC setting is severely limited (FG 1 and 3). The way NCDT is practiced there only partially fits the process-guided methods' model concepts. The time required for Planning Dietetic Intervention competes with the need for prompt treatment of clients' acute dietetic problems. This means that it is

| Planning Dietetic Intervention | |
|---|--|
| Challenges | ↔ Potential advantages and ideas |
| General conditions in the healthcare system | |
| Time constraints and financial pressures have a limiting effect on comprehensive planning | ↔ Create greater transparency and understanding of the individual work steps and the resources required for them: make the process step Planning Dietetic Intervention visible by documenting it |
| | ↔ Provide evidence that demonstrates the value of the planning |
| | ↔ Provide a digital documentation system that takes the process steps into account |
| Planning is limited by incomplete data due to difficulties in collaborating across professions, especially in the category of clinical status in the dietetic assessment | ↔ Use of mobile devices such as tablets so that documentation can take place directly during the consultation with the client |
| | ↔ More intensive contact with other professions (e.g., through discharge letters from the oNCDT to medical practitioners) |
| | ↔ Participation in AC team meetings |
| The short duration of stay in the AC leaves little time for intensive planning | ↔ When selecting indicators for monitoring and outcome, pay particular attention to those for which the data can be collected by the nutrition professionals themselves |
| | ↔ More intensive interface management: e.g., through the implementation of referral or discharge letters so that the oNCDT process can continue seamlessly |
| Structure for Planning Dietetic Intervention | |
| Time consuming nature of Planning Dietetic Intervention in accordance with the DCP criteria | ↔ Prioritizing the dietetic diagnoses helps to structure the dietetic intervention |
| | ↔ If unavoidable due to the circumstances: compress individual steps, e.g., do not fully evaluate food records in nutritional value calculation software |
| Client-specific characteristics and state of health of the client, for example expectations and desire or need for rapid problem solving, low motivation | ↔ Address problems in dealing with clients in training and networking events such as the <i>Fulda Dietetics Forum</i> |

Fig. 6: Challenges, potential advantages and ideas for the practically feasible implementation of the process step **Planning Dietetic Intervention from the point of view of nutrition professionals** (own presentation)
 AC: acute care hospital; DCP: Dietetic Care Process; oNCDT: outpatient nutrition counselling and dietetic therapy

only possible to set precise objectives to a limited extent. The Dietetic Outcome Evaluation usually cannot be fully implemented because the period for dietetic intervention in the AC setting is normally very limited since the average length of stay is only 7.2 days [27]. Time constraints have also been described as a relevant influencing factor in other publications [28, 29]. Monitoring is at least partially feasible provided that more than one client contact can take place. The nutrition professionals are aware of this problem. Comprehensive Dietetic Assessment that could be used as a basis for ongoing dietetic intervention in the oNCDT setting could be beneficial.

In the **oNCDT** setting, it is easier to implement the process steps than in the AC setting (FG 2 and FG 3) because clients are usually supported over a longer period of time in oNCDT. Nevertheless, nutrition professionals still face challenges in implementing the process steps, such as the limited availability of data about clinical status from other professions – data that is required for the process steps Planning Dietetic Intervention and Dietetic Outcome Evaluation. In addition, nutrition professionals in the FG reported that implementing the steps was initially very time-consuming – something that has also been described as a challenge in other publications [28, 30]. In addition, time resources are limited due to a lack of budgeting for administrative activities [5]. An exception to this is nutrition therapy as a remedy treatment, for which a limited amount of preparation and follow-up work is included in the remuneration [31].

In their reflections at the *Fulda Dietetics Forum* (FG 3), the nutrition professionals identified challenges with regard to the application of the process steps. However, overall they saw this as an opportunity and had valuable ideas for how to solve the practical issues.

Managing the interface between NCDT in AC and oNCDT more intensively would be very beneficial, as this would allow the NCDT started in the AC to be continued more rigorously on an outpatient basis. Data that has already been collected could be used for further treatment, saving time and resources [7].

Recommendations for implementing process-guided methods in practice

The recommendations shown in ♦ Figure 8 are based on this qualitative study.

Limitations

This qualitative study provides valuable insights into the implementation of process-guided methods in NCDT in the AC and outpatient clinic settings. In the future, reflections on the



| Dietetic Outcome Evaluation | |
|--|---|
| Challenges | Potential advantages and ideas |
| General conditions in the healthcare system | |
| Time constraints and financial pressures have a limiting effect on the Dietetic Outcome Evaluation | ↔ Create greater transparency and understanding of the individual work steps and the resources required for them: make the Dietetic Outcome Evaluation visible by documenting it |
| | ↔ Provide evidence that demonstrates the value of the evaluation |
| | ↔ Provide a digital documentation system that takes the process steps into account |
| | ↔ Use of mobile devices such as tablets so that documentation can take place directly during the consultation with the client |
| Incomplete data due to difficulties in collaborating across professions; budgetary restrictions for requesting laboratory parameters | ↔ When selecting indicators for monitoring and outcome, pay particular attention to those for which the data can be collected by the nutrition professionals themselves |
| Short length of stay in the AC, which means that it is usually not possible to prove the effectiveness of NCDT | ↔ More intensive interface management: e.g., through the implementation of referral or discharge letters so that the oNCDT process can continue seamlessly |
| Structure of the Dietetic Outcome Evaluation | |
| Complete data are required: for the Dietetic Assessment, monitoring and outcomes | ↔ Use of a common digital infrastructure such as a digital client file in the AC – one that is linked to the admission system, care documentation and medical documentation |
| Extensive, time-consuming and complex data collection and documentation | ↔ Highlight the value that the process step adds: Make the effects visible; quality assurance/improvement; quality of care; analyze effectiveness (self-reflection by the nutrition professional, aggregated assessments as evidence) |

Fig. 7: Challenges, potential advantages and ideas for the practically feasible implementation of the process step Dietetic Outcome Evaluation from the point of view of nutrition professionals (own presentation)
AC: acute care hospital; (o)NCDT: outpatient nutrition counselling and dietetic therapy

extent to which translation into practice is possible must be extended to include institutions that have not yet been involved. Nutrition professionals from other fields such as rehabilitation clinics should also be involved [4].

Conclusion

Implementing process models in NCDT practice offers the potential for significant advantages. In this qualitative study, concepts for implementing the process steps of the DCP were developed and tested using a participatory approach. It was particularly important to actively incorporate the general conditions in which NCDT takes place and the needs of practitioners into the implementation process with the aim of increasing the practical applicability of the concepts.

The feasibility of the process steps in practice proved to be very different in the AC setting compared to the oNCDT setting. The general conditions in which oNCDT currently takes place make it easier to implement the process steps than in the AC setting. In the AC setting,

time constraints and financial pressures are the main obstacles to implementation. In the future, the implementation of process models should always take place in close coordination with practitioners and be intensively supported by transfer-oriented healthcare research. Forums where nutrition professionals can come together to discuss and reflect, such as the *Fulda Dietetics Forum* [25], could support this.

From the nutrition professionals' point of view, the key potential benefits of implementing the process steps are greater transparency in NCDT work and, based on the documentation concepts developed, the associated possibility of being able to prove its effectiveness. The role of nutrition professionals can be further strengthened by promoting the use of process models [30].

Disclosures on Conflicts of Interest and the use of AI

Kathrin Kohlenberg-Müller, Laura Hoffmann and Maren Peuker are the authors of an open-access practical guide to process-guided methods in nutritional counselling and therapy. All other authors declare that there are no conflicts of interest. No AI tools were used in the preparation of the manuscript.

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2. Kolm A, Kohlenberg-Müller K, Werkman AM, Valentini L, Vanherle K: *Diätetik-Ausbil-*



| |
|--|
| 1. Create a common understanding |
| ... among NCDT clients, stakeholders in the healthcare sector such as healthcare professionals, medical practitioners, pharmaceutical staff, insurance providers and nutrition professionals. |
| 2. Improve structural conditions |
| ... especially in terms of available time, financial resources and the calculation of hours, since implementing process-guided methods initially requires time. |
| 3. Expand interface management |
| ... between the various sectors (outpatient clinic, acute care hospital, rehabilitation clinics) and other professions such as doctors, e.g., through referral and discharge letters [7]. |
| 4. Provide training and networking opportunities |
| ... for process-guided methods. In addition to skills acquisition, sharing experiences between nutrition professionals also plays an important role, e.g., at the <i>Fulda Dietetics Forum</i> [25]. |
| 5. Rapidly develop digital documentation infrastructures and make them usable [4, 7, 30] |
| ... because they make the work easier and can facilitate the implementation of process models. |

Fig. 8: Recommendations for practically feasible implementation of process-guided methods (own presentation)
NCDT: nutrition counselling and dietetic therapy

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