Co-Design in Specialist Care – Aspects to Consider

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Abstract. Co-design workshops are a way to stimulate collective idea generation between designers and non-designers. Service design and co-design techniques are increasingly applied in health-care contexts. The application of co-design methods in projects on health-care services requires careful preparation, as health-care contexts are complex. By describing the process of preparing and facilitating a co-design workshop for the redesign of a health-care service in an academic hospital, the author elucidates aspects that organisers should consider when preparing co-design workshops for similar contexts. Organisers should carefully consider whom to invite to the workshop, and what the pros and cons of this decision are. Organisers should consider the inclusion of designers and other experts as workshop participants, as well as considering the effects of the inclusion of patients or health-care professionals with different responsibilities. Furthermore, the representation of current non-users should be considered, as not everyone has the same access to care. The hierarchic roles that are typical for health-care settings require organisers to adapt workshop tools and materials to the participants to provide them with a safe space to articulate their ideas and experiences. **Relevance to Practice.** This article contributes with empirically grounded advice on aspects for workshop organisers to consider when preparing workshops for health-care contexts. The aim is to contribute to the optimisation of co-design workshops in health-care contexts, specifically those that focus on optimising health-care services.

1. Introduction

Co-design workshops are increasingly used to optimise health-care services. The co-design literature describes generally how to organise co-design workshops. However,

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it says little on how specific contexts, such as specialist care in hospitals, can affect the effectiveness of the methods and tools. Workshop organisers can benefit from more context specific advice. By reflecting upon the experiences with the organisation of a co-design workshop for specialist care, the author elucidates context specific aspects that organisers should consider when planning co-design workshops for similar contexts. The article focuses on the process, rather than on the ideas that came forth during the workshop. In addition to providing practical, context specific advice, the author hopes to inspire non-designers to consider co-design workshops as a possible approach to optimisation of health-care services.

1.1 Co-design

To design is to imagine possible futures, to decide on which idea is most ideal and to find a way to realise it [1]. Creative acts of making constitute an important part of the design process. To investigate meaning, designers for example make sketches, or develop probes, toolkits or prototypes [2]. In the design field, two views on the role of the designer prevail; the designer as the expert who designs for people, and the designer who actively involves people in the process and designs with them [3]. In the latter view, people are seen as knowledgeable, intelligent agents with their own understandings of the world around them. They are seen as experts on their lives and experiences, and are therefore actively involved in the design process. Although the level of involvement can differ, it ensures that their different needs are accounted for [3–5]. A large variety of methods and tools exist that support the inclusion of people in the design process. This allows designers to adapt their approach to each project, according to the project's specific context and aim.

Co-design, as defined by Sanders and Stappers [6], refers to collective creativity by designers and non-designers in design processes, through sketching, the making of prototypes or artefacts. People thus become partners in the design process, actively contributing to idea generation and development. Co-design workshops bring designers and non-designers together, and stimulates them to make things together. Design-by-doing engages people, provides for effective dialogues by offering alternative ways of communicating [7] and supports the discussion of possible future scenarios [2]. It can furthermore improve the collaboration between people in different roles [8]. In health-care contexts, people who could be relevant to involve are medical professionals, secretaries, technicians, department heads, patients, caregivers, insurance companies. Co-design workshops are a way of bringing designers and non-designers together in making. Although the prerequisite for co-design workshops is to have both designers and non-designers participating, the workshop organisers and facilitators do not necessarily have to be designers.

Co-design workshops can be used in service design projects to strengthen the focus on the people affected by the service, to improve cooperation across disciplines and to stimulate more innovative ideas that better comply with people's needs, resulting in a better service experience [8]. Services are characterised by multiple points of contact between service provider and service receiver over time. When you buy coffee in the supermarket, you buy a product. When you buy coffee at a restaurant, you receive a service; the waiter comes to you to take your order, prepares you a cup of coffee, brings it to your table, and cleans your table and the cup after you are finished. The goal of service design is to design for holistic experiences that appeal to the service receivers, while being effective and efficient for the service provider [9]. Service design therefore includes 'the design of the overall experience of a service, as well as the design of the process and strategy to provide that service' [10]. Ideally, both service providers and service receivers are involved in the design phase [11]. However, although one can design for a practice, the practice itself cannot be designed, since practices are dependent upon human interactions and changing contexts [7].

Information visualisation is an important part of service design. Service design has its own specific visualisation techniques, such as User Journey Maps. A User Journey Map provides an overview of the series of direct interactions that take place during a specific timeslot between a service provider and a service receiver, from the receiver's perspective [12]. They are used to display an existing service to allow for evaluation of that service [13]. To ensure that the service fits in its context, pre-service and post-service activities are often included to provide insights into the context of the service [5]. Images or quotes can be added to the User Journey Map to make it more alive [14]. Figure 1 is an example of a User Journey Map. It is a simplified version of a map that was used in the workshop that is presented in this article.

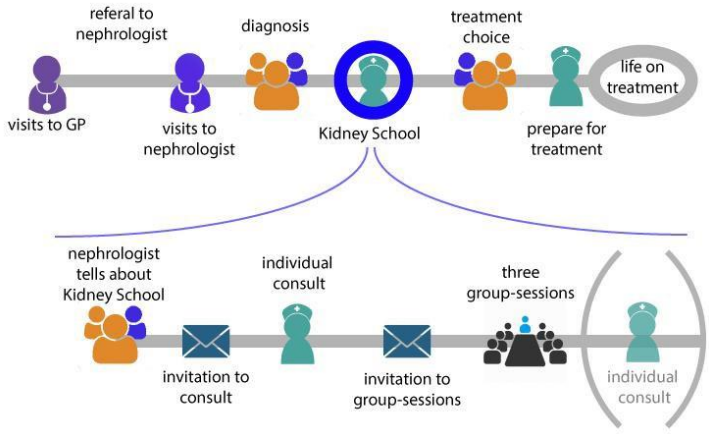

Fig. 1: Detailed Patient Journey Map for the Kidney School

1.2 Health-care services and co-design workshops

In health-care contexts, patients and their family are usually the service receivers, while medical personnel are service providers. In recent years, relationships between patients and health-care providers have started to change, with patients more often getting a say in their care [15]. Furthermore, patient involvement in the development of public services is becoming more recognised [16].

2 Method

By reflecting on decisions and resulting experiences, workshop organisers become conscious of how they make use of a method and learn from it. Sharing these learnings helps optimising methods [17]. A co-design workshop on the redesign of a health-care service in an academic hospital in Norway is used as an example case to discuss co-design workshops as a method. The hospital service that was redesigned is a pre-treatment education programme called the 'Kidney School'. This service is offered to people with chronic kidney failure and their spouses, and is intended to inform them about available treatment methods to empower them to take part in treatment discussion with their physician. The service consists of individual consults and group sessions. Participation is voluntary. Two nurses with a 50% post at the Kidney School and a 50% post at the outpatient clinic run the programme.

2.1 Workshop preparation

Before preparing a workshop, it is important to determine what the workshop should contribute. Based on this decision, the workshop organiser can decide which tools, materials and assignments to use, arrange the space for the workshop to take place [4, 18]. Empathic abilities, communication and adaptation skills are important in the preparation of a co-design workshop [19]. Additionally, careful planning, the selection of appropriate methods and taking time to prepare the materials increases the chance for the workshop to be effective [4, 8]. As each project is different, workshop organisers should be able to apply methods or tools flexibly, carefully selecting the ones that fit best with the project's aim [5].

In preparation for the workshop, a pre-study was conducted to study the service in its context and gain access to first hand insights. The nurses were interviewed about their intentions, the service was observed and patients were interviewed about their experiences. The workshop organiser (the author) collaborated with a nurse and a philosopher. Group discussions during data analysis helped in obtaining thorough insights and supported validity [20]. The insights were used to identify challenges that needed to be addressed. In a meeting with the two nurses that run the Kidney School, the suggestion to conduct a co-design workshop and its aim were agreed upon. Practicalities such as obtaining permission from the department head, timing, whom to invite and which room to use were also discussed. Such prior discussions contribute to the successfulness of a workshop and support the alignment of expectations [21]. The aim of the workshop was defined as: 'Optimising the Kidney School's service, to better meet the expectations of patients and their relatives, as well as better meeting the needs of the nurses that organise the programme'. With limited time available, it was decided to focus on obtaining new ideas, not on implementation strategies. This would be done afterwards in collaboration with the two nurses.

The pre-study helped building empathy with the service providers, as well as the service receivers. The insights informed the workshop and were important for tailoring the workshop to the specific case. The insights were used to prepare the workshop materials; three personas of patients, and a simplified and a detailed Patient Journey Map [13]. Personas present archetypical persons through a short narrative in which key aspects of a person's life are mediated, including needs, goals and behaviours [22]. They can be used to help workshop participants build empathy with other people. The personas can be found in the appendix. The Patient Journey Maps present the current structure of the programme as well as its context. The maps were used to evaluate the service and to support ideation.

Next, a trial workshop was organised to check if the assignments were clear, acheibable within the timeframe and if they produced the desired results. Furthermore, it allowed the facilitators to practice and to test the workshop materials. The workshop's facilitators were the workshop organiser and the nurse that had contributed to the pre-study. After the trial workshop, the facilitators had a discussion on how they experienced the trial workshop. This helped the facilitators in aligning their approaches better and led to some small changes in the workshop's plan for the workshop at the hospital. The trial workshop showed that the Patient Journey Map and personas are complementary tools to support idea generation, as they provide insights from different perspectives. However, introducing personas in a workshop takes time, as participants need to get the time to read them and reflect on them to create empathy. The personas were therefore kept as back-up, in addition to a stock of cards that represent technologies that could be used in a service, in case extra stimulus was needed for idea generation.

Questions that the facilitators could use as probes during the workshop were

included in the facilitator guide. These 'probing questions' focused on specific challenges that had come forth in the pre-study. Instead of stating that something was found to be a challenge, open questions where formulated to approach the challenges more positively. Examples of such probing questions are: 'How could we ensure that the presentations cover relevant topics?' and 'What could be changed to make planning of the group sessions easier?' Figure 2 gives an overview of the activities that were performed in preparation of the workshop.

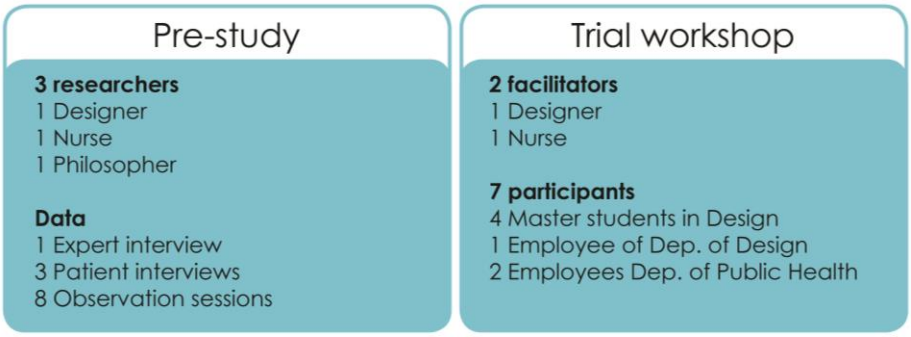

Fig. 2: Overview of conducted studies

2.2 Participant recruitment

The workshop organiser (the author) invited two nurses that run the Kidney School to the workshop. These two nurses invited the other medical professionals that are involved in the Kidney School through face-to-face conversations. They were given an information letter in which the workshop organiser explained the goal and background of the workshop. Contact details were included, in case of any questions.

The workshop organiser, following the same approach as the nurses, recruited two external participants for the workshop; a nurse working in a department that organises courses for people with various diagnoses and a master student in design with experience in designing for people with chronic illnesses. Upon agreeing to participate, the participants received an official invitation in the form of a post-card, with information on the timing and location of the workshop as well as a small sensitising assignment, asking them to describe a good shopping experience they have had. Sensitising assignments aim to trigger people to think over aspects of their personal time, to prepare them for the workshop [23]. Figure 3 provides an overview of workshop participants.

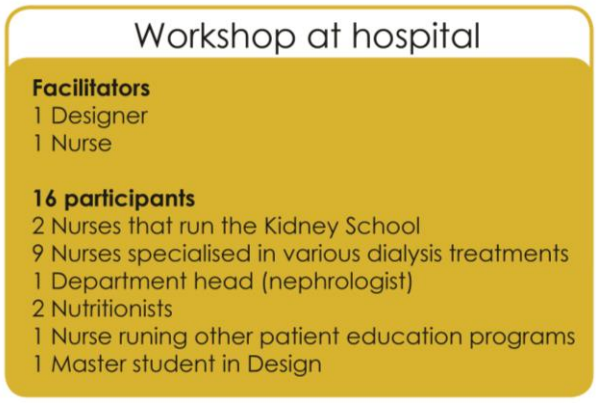

Fig. 3: Overview of workshop participants

2.3 The workshop

The two-hour workshop was held at the hospital's nephrology department, so that most participants did not have to travel. The workshop was facilitated by the same facilitators as the trial workshop: the workshop organiser and the nurse who had contributed to the pre-study. As both facilitators had been actively involved in data-collection and data analysis for the pre-study, they were very familiar with the problems that the workshop aimed to address and the context of the service. Credible facilitators contribute to the quality of facilitation [21]. Table 1 displays the final set-up of the workshop, including its time schedule and an overview of the materials.

To receive feedback on the co-design workshop's process and facilitation, an evaluation form was handed out to the participants at the end of the workshop. Participants were free to fill out the form immediately or to hand it in later. Additionally, the workshop organiser had a meeting with the master student two days after the workshop, to discuss how she had experienced the workshop. One week after the workshop the organiser met with the two nurses that run the Kidney School to formulate follow-up actions and to discuss their experiences.

3 Observational Findings

Recruitment by the nurses went well, with more participants signing-up than expected. Most participants were female nurses working at the same department. The priest, physiotherapist and social worker involved in the Kidney School did not

attend. During the workshop, the facilitators first introduced themselves, explained the goal of the workshop, their role as facilitator, what was expected of the participants and the set-up of the workshop. Furthermore, they explained some workshop rules, which stated, i.e. that discussions should be constructive and that it is important to be open to new thoughts. Second, the sensitising assignment from the post-card was used as a warm-up exercise. Each participant was asked to introduce themselves with their name and a memory of a good shopping experience. Most participants mentioned their job-position additionally. The facilitator wrote down keywords of their stories and summed these up at the end. Due to the unexpected high number of participants, the warm-up exercise took longer than planned. Prior to the workshop, the facilitators considered asking just a few participants to share their thoughts. However, they decided not to do so as they wanted everyone to have said something to the rest of group before the start of the actual workshop, to engage and to activate each participant. As the warm-up exercise was quite open, each participant could contribute, including those that had forgotten to prepare the sensing

Table 1: Workshop set-up

Timing	***Assignment***	***Materials***
10 min	Introduction, a plenum.	Facilitation guide, workshop rules
10 min	Warm-up exercise, a plenum.	Post-cards, Post-its + pens
15 min	1 – Information needs of patients in three different phases, 2 groups.	Simplified Patient Journey Map, Post-its + pens, poster with three participant groups
45 min	2 – Analysis of the current kidney school and ideas for change, 2 groups.	Detailed Patient Journey Map, Assignment 1, Post-its + pens, probing questions (Personas, card stock)
10 min	Break	
10 + 10 min	3a - Design of the ideal kidney school, 2 groups. 3b - Presentation to other group, a plenum.	Assignment 2, Post-its + pens
10 min	Closure, a plenum.	Evaluation forms

assignment. Participants enthusiastically shared their stories and smiled in reaction to

stories from others. The exercise furthermore provided relevant keywords on what is generally associated with a good service experience, which was useful in later discussions.

After the general kick-off, the group was divided over two rooms according to job-position to ensure diversity in each group. The first assignment was to map information needs of patients in different stadia. The facilitator introduced the simplified Patient Journey Map to support the discussions. The participants needed time to become used to brainstorming in a group. At the start, they were a bit hesitant to speak out, but they became more talkative over the course of the first exercise. The participants in both groups were very engaged and open to sharing their thoughts with the others in their group. By the end of the first exercise, the facilitators no longer had to actively engage any of the participants as all were participating and contributing. The facilitators had to remind the participants frequently to write down each idea on a Post-it and to tape it on posters. The design student helped the other participants in her group at the start, showing them how it was done. In the other group, the facilitator did this. This made it more challenging for her to stimulate the participants to write down ideas themselves and to stay in her role as facilitator. In the discussion with the master student it came forth that she also had noticed that the participants were very engaged in the discussions, but seemed uncomfortable with writing their ideas down on the Post-its.

The second assignment was to review the current offer with respect to the identified information needs. The facilitators introduced the detailed Patient Journey Map, posed probing questions and stimulated the participants to come up with alternative ways to meet the goals of the programme. The two external participants (one per group) were found to stimulate creative thinking by bringing new topics to the table and challenging current practices. Discussions were mostly constructive, although sometimes a participant became defensive. In such instances, it was useful to have a printed overview of workshop rules to remind the participants of the importance of being open to new thoughts and that all ideas should be considered equal during the idea generation phase. The external participants came with proposals that were perhaps less evident than suggestions by the other participants, such as introducing homework assignments and setting up a chat group for patients, opposed to ideas as reserving more time for a difficult topic or changing the order of the topics that were already part of the programme. The facilitators did not consider it necessary to introduce the personas, as the participants had constructive discussions and seemed to have a shared notion on common characteristics of patients. This was evident from the discussions among the participants. The master student suggested giving more sensitising assignments beforehand that challenged one to look at the Kidney School from someone else's perspective, as she noticed that the participants often thought of things they could personally change in their role to improve the programme.

The third assignment was to first design the 'ideal' Kidney School and to next

present this to the other group. The facilitators decided to skip this second part of the assignment. Instead, the facilitators gave a brief summary of what each group had discussed to the other group. The facilitators found that it was very important to have conducted a trial workshop prior to the actual workshop and to have discussed several scenarios in preparation for the workshop. This helped the facilitators to take the decision to skip the assignment quickly. This decision was made due to the delay that was caused by the longer warm-up exercise and because the facilitators noticed that the participants were less familiar with each other than expected. The facilitators presumed that the participants therefore might not feel comfortable with presenting their group's results to others they did not know very well.

The language used for the assignments and materials was purposefully adapted to the workshop participants; during the trial workshop words such as 'meeting with kidney doctor' were used, while medical terminology, such as 'consultation with nephrologist' was used in the workshop with medical professionals. The facilitators did not get questions on the terminology they used, and noticed that the participants used similar phrases and wordings.

The facilitators closed the workshop by reciting the goal of the workshop and what had been accomplished in the workshop. They explained how the process would continue and participants were given the chance to ask questions. Finally, an evaluation form was handed out to the participants. Few participants filled out the evaluation form. Feedback was mainly positive, mentioning appreciation for the structure of the workshop, the materials that were used and sticking to the timeslot. Some participants indicated that the workshop could have been longer, to allow more time for idea generation. The two nurses that run the programme indicated having especially valued the presence of the two external participants.

4 Reflection and Discussion

The discussion below presents a reflection on the decisions that were made in preparation of the workshop and what happened during the workshop. By comparing this with scientific literature on experiences from similar cases, some advice for organisers of co-design workshops for specialist health-care contexts is formulated. The discussion aims to show the importance of carefully considering who to invite, and of preparing materials and assignments that match with the participants' experience with creative acts of making.

4.1 Who to invite?

Deciding who to include in a project, through which methods and during which stages, is an essential part of a project's preparation phase [8]. Including people as partners in design ensures that the designed solutions are relevant for the different parties involved [3–5]. Co-design workshops allow people with diverse roles and responsibilities to contribute with ideas [24]. The discussion below intends to underline the importance of carefully considering which participants to invite and what the pros and cons of these decisions are, especially for specialist health-care settings.

Although service receivers are commonly included in co-design workshops as experts of their experiences [6], ethical considerations prevented the author from inviting health-care practitioners and patients simultaneously for this workshop. Including people with different needs can drive innovation [25] and ensure that the different needs are addressed [8]. However, while preparing a workshop, the participant group and its traits with respect to formality, climate, participation, conflict, decision-making, responsibility and communications should be considered [16]. Based on these traits and ethical considerations, the workshop organiser decided not to include patients so as not to interfere in the existing relationships between medical professionals and their patients. During a co-design workshop, patients and their medical specialists would be expected to interact with each other in a non-traditional setting. Specialist health care has a paternalistic tradition and although changes are happening, power distances between medical specialists and patients are still common. Collaboration between these two parties might be obstructed by this tradition. Additionally, the relationship between patients and their medical team is precarious. For chronic patients, a good relationship with their medical team is important, as they will have to collaborate over a long time. The disadvantage of not including patients in the workshop is that their needs might not be embedded in solutions. In our case, the first assignments therefore challenged the participants to take a patient perspective, considering patients' needs and evaluating the service from the patient's perspective in the User Journey Map. Furthermore, the pre-study had given the facilitators an empathic understanding of patient experiences, which helped them in posing relevant probing questions under the assignments to ensure that the patient perspective was considered by the workshop participants. Considerations on who to include in the design process and when, were also key for Gaudion, Hall, Myerson and Pellicano [19]. They describe a project in which they included autistic adults in a pre-study, while health-care professionals and family members were involved in idea generation and implementation instead. The NHS Institute for Innovations and Implementation also recognise that difficulties can arise when patients and medical specialists are brought together, with medical professionals becoming defensive or patients feeling not listened to. To avoid this, they first let medical staff and patients work separately [26]. Based on these insights and

experiences, the author recommends that workshop organisers for a health-care context question who to involve and when, from an ethical perspective.

Although the health-care context is complex, the author decided to invite every medical professional that is somehow involved in the Kidney School, as active involvement creates shared ownership [13, 14]. In health care, strong hierarchies exist between the different professions, due to specialisation working in vacuums can occur, and risk aversion is a common notion [26]. The complexity of the relations between professionals with different responsibilities might obstruct effective collaboration in a co-design workshop. However, for this workshop the author decided that it was very important to create shared ownership and engagement among the medical practitioners that are involved in the service. From the pre-study, it became clear that some of the practitioners were less engaged than others, while their engagement helps creating an effective learning arena. Their participation in the workshop might give them a stronger feeling of ownership, stimulating engagement. This is important, as the practitioners are the ones that will eventually need to make changes to their practices. Regarding more participants signing-up than expected, perhaps our approach supported this; the nurses that run the programme and who were open to change, invited their colleagues and invited them to take part in the workshop. Furthermore, the workshop focused on aspects related to their everyday practice, which stimulates motivation to participate [21]. However, most of the participants were female nurses. The priest, physiotherapist and social worker involved in the Kidney School did not attend. A larger variety of professions could have benefited ideation and ownership over the ideas. They are important actors in the programme, have different experiences than nurses and their support for the programme is important, as they are often the first to introduce the programme to a new patient. Others have experienced participants with negative expectations towards the project at the start and concluded that it might affect their willingness to contribute to discussions [19, 26]. This somewhat contradicts our experience. Like Yang and Sung [5], we found the participants to be very engaged and motivated to contribute. The workshop deliberately started with a sensitising assignment to which all participants could contribute and that was unrelated to their work, to trigger engagement. Yet, at the start of the first assignment, the facilitators had to prompt the participants for input. After some minutes, this was no longer necessary and all participants participated actively in the discussions. Based on these insights and experiences, the author recommends that workshop organisers consider how the complexity of the health-care context might obstruct effective collaboration between participants and how to deal with this.

Despite the external participants being unfamiliar with the service and its context, the author decided to invite them to participate in the workshop. Externals that have experience with similar services might have very different experiences than the team that works with the service that is being redesigned. This can stimulate idea

generation, as health-care professionals are focused people. In our workshop, we found that their ideas mostly concerned things they could change in their own practice. Providing the participants with more sensitising assignments beforehand that challenged them to look at the Kidney School from someone else's perspective could possibly have helped them to think more broadly. Furthermore, we found that their ideas often focused on communication styles, rather than technical alternatives. Björgvinsson [7] explains that this is a common challenge with designing for services as the needs and concerns of people form the starting point for idea generation, not a technology or process. Designers are often technology focused, and aware of production processes and their constraints [6, 16]. Designers are furthermore familiar with brainstorming and other creative techniques. They can thus support the other participants in expressing their thoughts and help them get started with the design tools. Human-centred designers are additionally used to considering situations from the perspective of different people, which can help ensuring that the needs of both service providers and service receivers are considered during the workshop [5]. In line with Björgvinsson [7], the nurses indicated that the involvement of externals stimulated them to reflect upon their practice, helped them to become more aware of certain aspects of their practices and helped them to define their practices more clearly. Bowen, McSeveny, Lockley, Wolstenholme, Cobb and Dearden [26] concluded that including designers as external participants is valuable, but warn that their inclusion can have a negative effect on feelings of ownership among other participants, and Pirinen [21] found that prejudices towards what designers can do, can affect the effectiveness of collaborations. This highlights the importance of balancing the participant groups with regard to internal and external participants, and stimulating an open mind-set among the participants. Additionally, externals are unfamiliar with the service and thus have a knowledge-gap. Furthermore, Pirinen [21] warns that other participants might think that the external participants do not know their practice well enough. Yang and Sung [5] therefore suggest letting externals build empathy by letting them partake in a pre-study. Involving externals in a pre-study can however be an emotionally intense experience in health-care contexts [18], might pose ethical dilemmas and might be difficult to realise due to medical regulations. Based on these insights and experiences, the author recommends that workshop organisers for a health-care context carefully consider the involvement of external participants in the workshop, both designers and non-designers. Furthermore, organisers are recommended to consider how to deal with the knowledge-gap of the external participants and feelings of ownership of the team that needs to change their practices for the service.

Having empathic facilitators is important for the quality of the facilitation [5] as they provide an important contribution to the workshop outcomes [16]. In our case, we deliberately decided that the nurse who had been involved in the pre-study would facilitate the workshop. Even though the nurse did not have much experience with

facilitating creative workshops, she was very familiar with the project and knew exactly where the pain-points for both the service providers and the service receivers lay. This enabled her to pose relevant questions to the participants. Based on these insights and experiences, the author recommends that workshop organisers consider inviting people who are familiar with the problems that need to be addressed and the context of the service to facilitate the workshop. They might need to facilitate a trial-workshop first, to become confident and to align approaches if several groups are facilitated simultaneously by different facilitators, as their familiarity with the topic will be beneficial for the quality of facilitation.

4.2 What assignments and materials to prepare?

When preparing for a workshop, one has to set a realistic goal given the participant group and available time [16]. Furthermore, suitable methods need to be selected and adjusted to the specific context of the project [8]. In a context were strong hierarchies exist, such as health care, making an effort to create an open environment is important. Constructive creativity requires participants to be open-minded [25]. Some assignments are better suited for this than others. Participants need to be provided with suitable tools that help them express themselves [6]. Engaging people in a creative process can be challenging, as many are not used to working creatively and might think they are not able to [6]. This was also challenging in this workshop. The sensitising assignment was introduced to tune participants to start thinking of what constitutes positive service experiences [14]. The assignment was deliberately kept very open and easy to give everyone a chance to contribute. During the warm-up exercise, one of the facilitators wrote down keywords from the participants' stories to provide an example of the way of working that would be expected from the participants during the following assignments. However, once started with the assignments, the participants had to be reminded frequently to write their ideas on Post-it notes. Perhaps they are used to appointing one person as a minutes' secretary at regular meetings. It is the facilitators task to create a safe and open environment. The facilitators therefore took responsibility for the note taking, so the workshop participants could focus more on the discussions. However, taking over the responsibility for note taking might undermine the participants' feelings of ownership. When deciding upon the structure of the workshop and what materials to use, the workshop organiser tried to find a balance between detailedness and time needed for explanation. Scenarios, for example, could stimulate creativity but time would be needed to let the participants interpret them. A Patient Journey Map is quicker to explain but contains less information. Personas of patients had been developed as a back-up. It takes time to read them, but they provide insights from a different

perspective and can so stimulate discussion and idea generation [14]. A stock of cards that represent different technological solutions was also available as a back-up to stimulate creativity. As the discussion during the workshop remained lively and focused, the facilitators did not introduce these tools. Explaining them would take time, but the facilitators liked having them available had the participants needed them. Based on these insights and experiences, the author recommends that workshop organisers take extra care in gradually building up the creativity level of the exercises, so that non-designers can get used to a new way of working and expressing themselves. Flexibility can be built in by having extra tools available as back-up.

A Patient Journey Map helps to visualise the existing service. Like Yang and Sung [5] and Pirinen[21], we found that visualisations are helpful in discussions as they support shared understanding. However, such maps usually do not contain information on which people are not reached by the service or when individuals drop out. Especially in health care, it is important to consider non-users, as not everyone has the same access to care. The facilitators therefore posed probing questions to the participants to make them aware of this group. Another consideration related to choices in terminology use [16]. Language use can form a barrier for effective communication [21]. The facilitators deliberately adapted the language use to that of the participants and did not find that participants had difficulties understanding them. If patients had been present, additional measures would need to be taken to avoid misunderstandings. Probing questions were used, instead of mentioning challenges directly, to avoid approaching the topic negatively. To the knowledge of the author, approaches on how to present challenges and problems in co-design workshops have not been discussed by others. The author recommends that organisers of workshops for health-care settings consider non-users and how they can be represented in the workshop. Sick people are more vulnerable then healthy people and might need something extra to become engaged, but health-care services should welcome them.
Running over on workshop time should be avoided [16], as participants often have other obligations. This contributed to the facilitators' decision to skip one assignment. The decision could be made quickly during the workshop as the facilitators had discussed several scenarios in preparation for this workshop. When working with two or more groups simultaneously, it is important to have such discussions, so that decisions on changes can be made quickly. Being ready for programme changes, is an important facilitator skill [16]. As the third assignment was skipped, a selection of ideas was made during the meeting with the two nurses. The nurses and the designer individually made a selection of ideas they thought were relevant, interesting or promising. During the meeting, these ideas were discussed and an action plan was made. Additionally, attention was paid to the development of an evaluation-aid that the nurses can use themselves without the help of a designer. As the needs and problems of the people affected by the service are likely to change over time, due to

demographic changes of the patient group and the attainment of new medical insights, practices will need to evolve over time. The author therefore recommends considering how the workshop could form the start of a continuous improvement loop of the service.

5 Conclusion

While preparing and facilitating a co-design workshop on the redesign of a health-care service in specialist care, the author realised that some characteristics of the health-care context influenced the approach and needed special attention to ensure effectiveness. By describing and reflecting on the process of preparing and facilitating the workshop, the author elucidated aspects that workshop organisers should take into consideration when preparing workshops for similar contexts.

Careful preparation of a workshop is essential. Organisers should consider whom to invite to the workshop, and what the pros and cons of this decision are. Although bringing together different perspectives ensures that the needs of different people are represented, ethical considerations on what indirect effect this can have on the long-term relationships between participants are needed. Especially in health-care contexts, relationships between medical professionals and patients are precarious. Furthermore, organisers should consider the inclusion of external participants. They can stimulate creativity by challenging current practice and approach the problem from a user-centred, holistic perspective. However, a knowledge-gap might need to be overcome before the workshop to increase empathy. More studies are needed to determine an effective balance between internal and external participants, as feelings of ownership might be affected.

Organisers should additionally carefully adapt workshop tools and materials to the participants, taking context and culture into account to create an environment of trust and competence. Traditional hierarchies in a health-care context might hinder participants from openly sharing their thoughts and ideas. Providing participants with non-traditional ways of communication and having a facilitator that knows the setting well, can help in creating a more open environment. Furthermore, current non-users of health-care services should be considered, as not everyone that could benefit from the service might have easy access to it. As medical guidelines change over time, when new insights are obtained, considering how a workshop could form the start of a continuous improvement loop of the service could support the service relevance in

future.

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