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683. Creating caring conversations for patients living with obesity. The 5As Team program.

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ABSTRACT People living with obesity suffer from multiple health conditions, including diabetes and mental health. Managing obesity is affected by misinformation about its complexity and chronicity, resulting in unrealistic expectations by healthcare providers and patients. Effective obesity management has to be individually tailored for each patient. The objective of this project was to improve four communication tools by co-designing it with patients. A co-design approach was used to improve the efficacy and applicability of the tools through a working collaboration between patients, care providers, and researchers. The adoption of human-centred design can help patients and physicians to collaboratively design better healthcare approaches. We hope this study provides a valuable model.

Keywords: obesity, weight management conversations, human-centred design, shared-decision making.

Introduction

Patients with obesity frequently suffer from other chronic conditions, like diabetes or osteoarthritis. Obesity management in primary care requires an assessment of root causes (Sharma and Padwal 2010); including the *mental* (anxiety, depression), *physical* (musculoskeletal disorders, hypertension) and *social health* (occupation, relationships) (Sharma 2010; Loeb et al. 2015). Obesity management is challenging due to the medical complexity of patients, the socio-economic factors affecting their health, and the need to understand the connection between all these aspects (Kushner 2012; Peek 2009).

Obesity management demands personalised care planning to provide support tailored to the uniqueness of each patient. In personalised care patients and clinicians collaboratively identify, discuss, and decide actions for managing obesity. Personalised care planning is a conversation, or series of them, for managing the patient's health problems. This shared process is usually called shared-decision making.

Shared-decision making (SDM) tools help clinicians and patients engage in deep, unique, and valuable conversations (Stiggelbout 2012). The 5As research team created a toolkit to support obesity conversations (reported in Osunlana et al. 2015). Four SDM tools from this toolkit were selected for improvement. These are: the bubbles, the timeline, the 4Ms, and the goal-sheet (Figure 1).

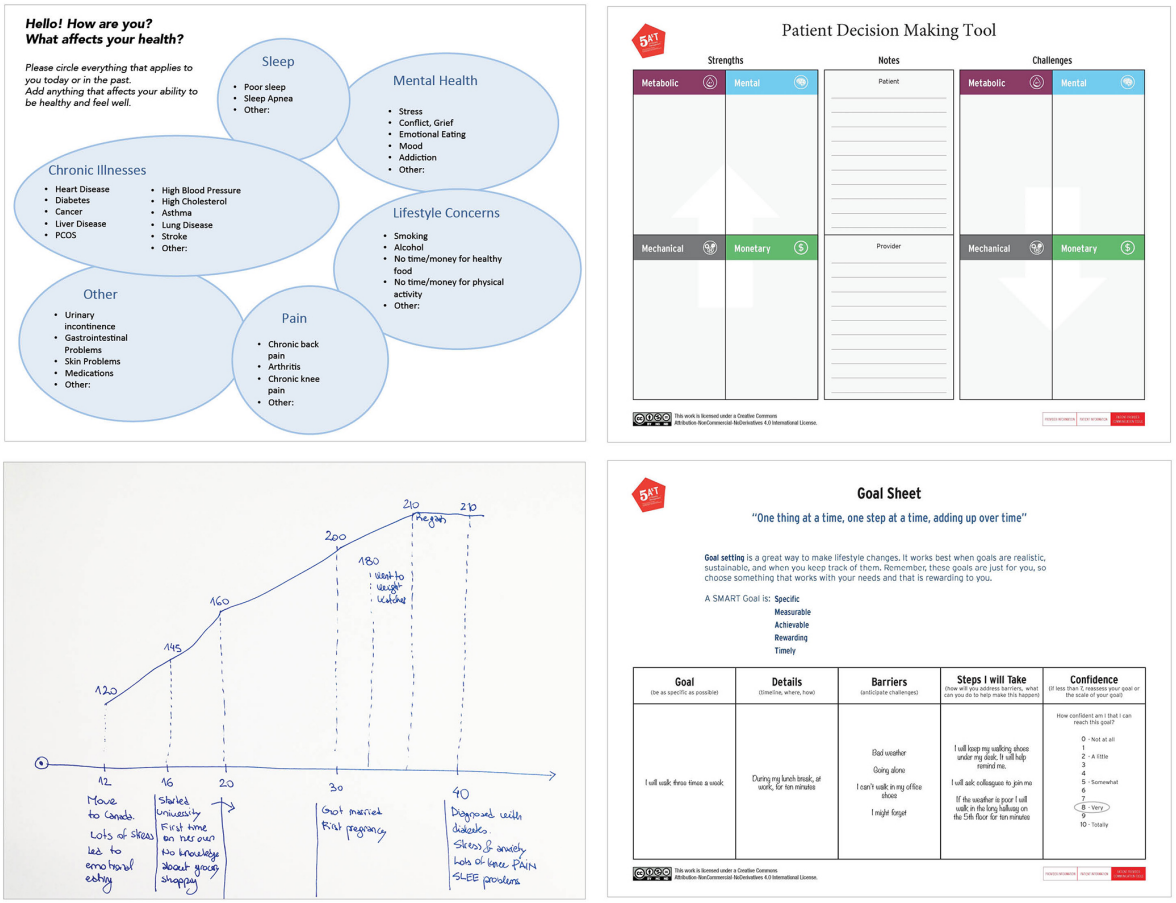

Figure 1. Above left, the bubbles tool; below left, the timeline; above right, the 4Ms; and below right, the goal-sheet.

Methods

Human-centred design: An approach to achieve Patient-centred care

Medical practice calls for the adoption of patient-centred care approaches. Human-centred design is often used in the design of SDM tools to address patient-centred care (Breslin et al. 2008; Bohemer et al. 2016; Witteman et al. 2015). Designing for people and caring for people both require a deep knowledge of and collaboration with 'people'.

The 5As Team understands human-centred design an approach where teams collaborate with patients. Human-centred design is a principle, not a method (Frascara 2017). In healthcare, we use human-centred design because people matter (Hargraves 2018), and hence we create knowledge collaboratively (Greenhalgh et al. 2016). We used co-design, a process of engagement, participation and collaboration to improve the four SDM tools. The bubbles helped identify current and past health issues; the timeline to discover life events that affected health and weight; the 4Ms to assess weight management considering Mechanical, Mental, Metabolic, and Monetary aspects; and the goal-sheet to set goals.

Participants

Patients were older than 18 years, spoke English, had different age, gender and socio-economic backgrounds. Most providers were from the 5AsT primary care teams (dieticians, family physicians, and mental health workers). All participants have used the tools.

The University of Alberta Ethics Board approved the study. The process was divided in 3 phases: 1) understanding the design problem, 2) co-designing the tools, and 3) observing performance. Observing is not reported here. Table 1 shows the structure of the study.

Study design

Table 1 study strucutre

	Previous work *Reported in Luig et al. in press*	**Phase 1: Understanding the design problem**		**Phase 2: Co-designing the tools**		**Phase 3: Observing performance**
Methods	*Observation, interviews, journals*	**Observation**	**Co-design workshop 1** 1hr 30 min **3 personas** based on the observations	**Co-design workshop 2** 1hr 30 min **3 personas** **Role-playing**	**Co-design workshop 3** 1hr 30 min **3 personas** **Role-playing**	Done, buT NOT reported here

Data collection tools	*20 videos of patients and providers using the original 4 tools selected for improvement*	**9 video recordings** of patients and providers using the original 4 tools selected for improvement	**2 dialogue prompters** **2 provotypes** **Verbatim notes**	**2 dialogue prompters** **4 prototypes** **Verbatim notes**	**2 dialogue prompters** **4 prototypes** **Verbatim notes**
Goals	*To investigate provider-patient conversations about obesity and their effects on everyday life.*	To identify the structure and nature of the conversations, and the tools' context of use.	To collaboratively analyze and explore how the current tools help patient and physician.	To understand the degree to which the 1st prototypes work. To jointly envision how to improve them	To understand the degree to which the 2st prototypes work. To jointly envision how to improve them
Participants		9 patients 2 providers	3 patients 1 designer	5 patients 5 providers 1 designer	5 patients 5 providers 1 designer
Output			**4 prototypes** based on 24 performance requirements	**Second 4 prototypes**	**Third 4 prototypes**

The question to explore was: *How can we arrive at a patient-clinician interaction that offers conversation, not just information, and care, not just choice?* To help patients feel safe to talk about obesity we created three **personas**. This helped to frame the discussion in a hypothetical situation. The personas were read aloud. Then, participants explored how the current tools help patients and physicians.

To facilitate this exploration, we created **dialogue prompters** (Figure 3), tools that create a space for interaction, reflection and generation of ideas. Dialogue prompters have pre-structured activities to foster collaboration.

Two **dialogue prompters** were created. The first prompter presents questions to foster reflection, such as 'Are all the categories in the 'bubbles' helping to unpack the stories in the Personas? In what way?'

A second dialogue prompter explored whether the goal-sheet helped the Personas plan change. This prompter included a **provotype** of the goal-planning tool. Provotypes support collaborative exploration at early stages of the design process, 'drawing out details of practice that may not emerge organically through questioning' (Erwin et al. 2018).

To explore changes in the bubbles and the timeline, we created another provotype (Figure 2).

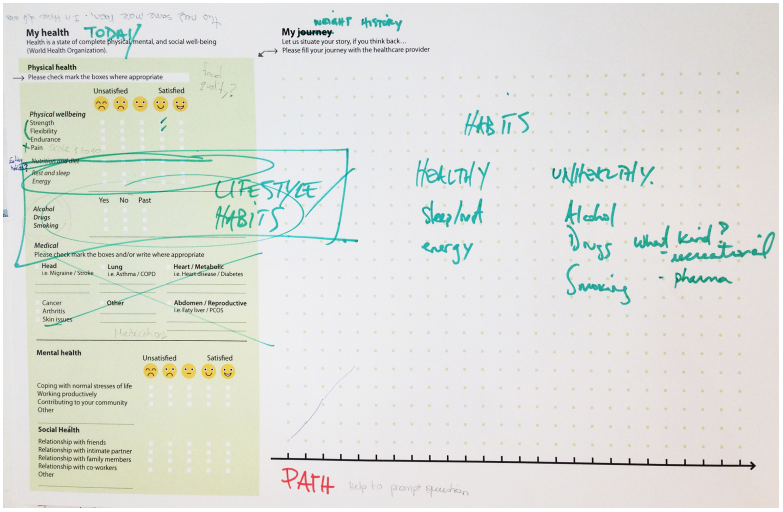

Figure 2. The provotype.

The other two **co-design workshops** helped understand the degree to which the first prototypes work, their perceived affordances or possible actions (Norman 2013) and to collaboratively envision how to improve them (Figure 3). The 10 participants were paired and grouped in two tables.

Figure 3. Participants collectively explore how to improve the prototypes.

We designed four **prototypes** based on 24 performance requirements (Frascara and Noël 2010) emerging from the data collected. Eight prototype iterations (Figure 4) were done. Prototypes helped focus the conversation, and reduce misinterpretations (Frascara and Noël 2017; Sanematsu and Cripe 2018).

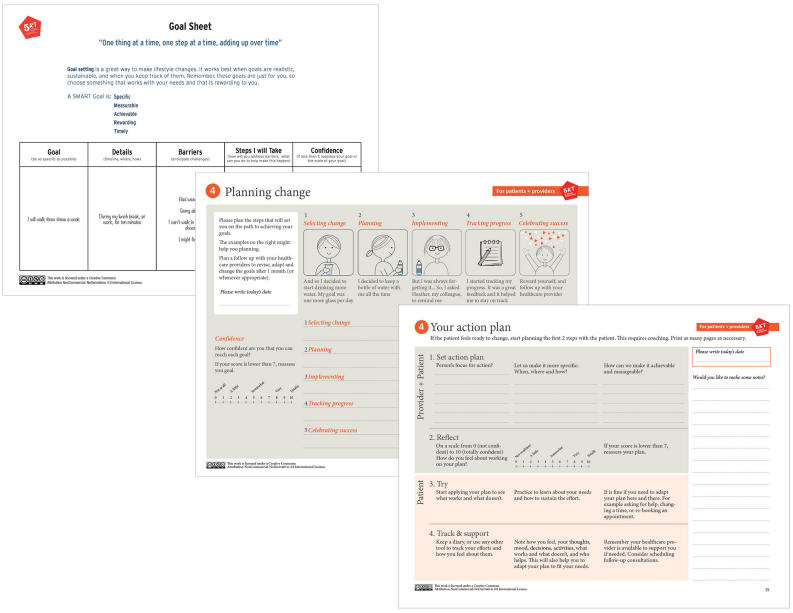

Figure 4. Iterative design process.

To enable participants collaboration in the design of the tools, it was necessary for them to try the tools. To achieve this, we used **role-playing**. The three **personas** used in the first workshop helped participants situate themselves in the story of a 'constructed' patient.

Two **dialogue prompters** helped participants propose change and adapt the tools to their needs. The dialogue prompters have pre-determined questions to investigate how the tools helped to foster conversation.

Data analysis

During the workshops verbatim notes were taken. The comments on the dialogue prompters were aggregated to the notes. The data was analyzed using affinity diagramming to identify themes (Beyer and Holzblatt 2017). Verbatim statements were written up on post-it notes and grouped based on their affinity. The affinity showed the scope of the users' problems and helped develop design requirements.

During the co-creation notes were also taken while observing the role-playing. These findings were used to develop performance requirements to guide the design decisions.

Results

1. Understanding the design problem

The following findings emerged from ***the observations:***

a) Providers frequently introduced the conversation as being about 'health: physical, mental, spiritual.' However, the conversation was more focused on conditions. The tools should help understand the patients from a holistic point of view.
b) Conversations are different, partly because of the patient's complexity, but share a common structure. The tools should provide structure but allow for different content and details.
c) Topics that were not covered were what brings motivation and satisfaction; and who helps.
d) The tools prompt, but there are things that only the provider can do, such as digging in, or working iteratively to re-define goals.
e) Pointing occurred occasionally. The tools provide a common territory.

The first ***co-design workshop***, helped gain an understanding of patients' needs, develop design requirements, create prototypes, and re-define the tools' content. Figure 5 illustrates main results of the co-analysis.

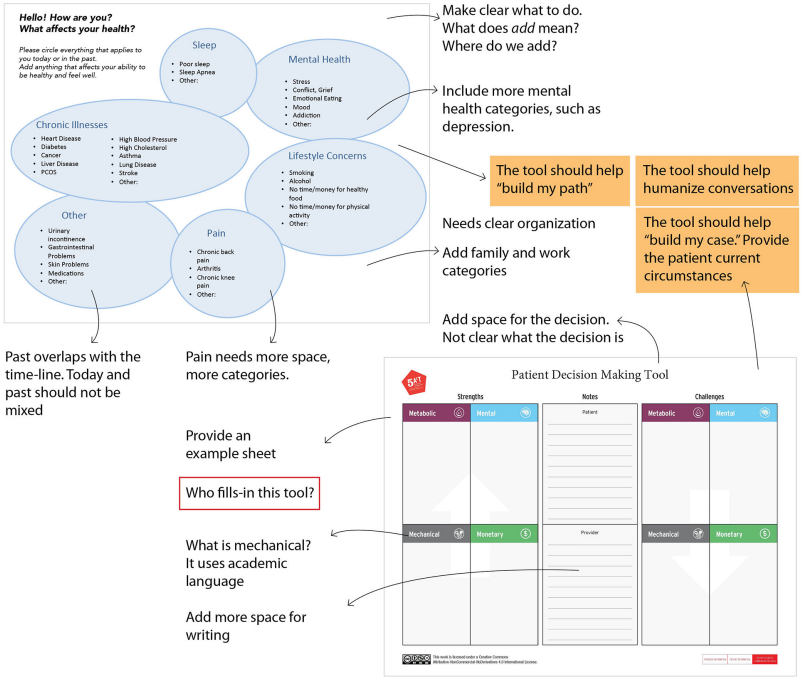

Figure 5.

Five main themes emerged. *Engaging patients in meaningful conversations,* refers to actions tools facilitate: engage, inquire, understand, inform, coach and plan. *Guiding through instructions,* relates to the need to clearly understand who the tool is for, and how to use it. *Providing a clear structure,* is about the need for the tools to be visually related; and have a clear visual organization. *Talking about personal life, not just medical stuff,* is about the need to talk about 'your family baggage' or 'work environment;' and not only medical conditions. *Monitoring and getting feedback,* refers to the need for the tool to help monitor the plan; and for eventual support to discuss the plan. A participant stated: 'setting goals is fine, but if you don't get to the outcome what is the point.'

2. Co-designing the tools

Role-playing

Role-playing helped revealed what worked, and what didn't (Figure 6). The prototypes promoted engagement. Most participants figured out how the tools work.

Figure 6. Role-playing helped participants experience the prototypes.

The *personas* proved useful to create a safe space, but demanded some thinking. For example, participants needed to recreate part of the journey: 'It was probably when I was about 8 years old.'

Tool 1 *prototype*, was easier to use than the timeline. The timeline had little dots to help tracing the line. Users needed to figure about how to use the dots, in which direction to count pounds or years.

In tool 3, participants doubted who had to fill it in. Most participants had problems identifying the person's strengths and challenges. It was clear that it needed coaching through examples or training. This issue was mentioned during the first co-creation. Some providers invited patients to self-identify their strengths.

In tool 4, identifying goals was difficult. Some providers were quicker and more skillful than others at establishing possible areas for action.

Dialogue prompters

The dialogue prompters were effective at fostering collective thinking and helping participants made or propose changes. Table 2 presents the main changes.

Table 2

Tool 1	Tool 2	Tool 3	Tool 4
Show more connection between the different health factors	Use weight & health, nor one or the other	Change the planning area to one	Pictures are not useful. Use just 3 or 4 clear sentences
Add space for writing comments in all categories	Show a clear relationship between life event and impact on health	Change title to strengths & challenges	Change title to planning change
Add more functional aspects to the categories	Move the time-line to the middle	Add area for writing summary or brainstorm ideas	Guide more the steps, get to when and how
Use precise and clear labels for the categories	Instruct how to use the tool	Prompt brainstorming	Change the word goals. Too much pressure to plan goals
Make clear who fills-in the tool		Instruct to address readiness	Remove celebrating success. Some people might not get there
Use only 1 way to fill-in the tool		Remove mental, physical, and social labels	

Discussion

Diverse communication needs emerged between patients and healthcare professionals. Patients found the first prototype too medical and technical not helping to address their overall health. Health professionals needed the tool to cover more mental health and aspects like occupation and income.

The co-creation clarified that we needed to differentiate between what the tool should do from what the health professional should do. For example, the tool should *support the identification* of patients' strengths, but it is the *health professional who identifies* strengths. This requires training.

The steps to guide patients to plan action needed to be simple to avoid overwhelming them. If the tool to plan action was overwhelming, it affected the patients' capacity and confidence to plan and implement future actions.

Significant changes were made after the co-creations (Figure 7). The bubbles and the 4Ms were merged into tool 1. The strengths and challenges part of the 4Ms become tool 3. The book 'Think small' by

Service and Gallagher provided the basis to change tool 4's planning approach. Instructions and examples were developed, this required re-watching the 9 videos. The tools are now a loop, it starts with where the patient is and want to be, and it ends with planning possible ways to get there.

Working iteratively to understand the users' needs and explore the problem/solution space is a very suitable approach for healthcare, where time with providers and patients is limited.

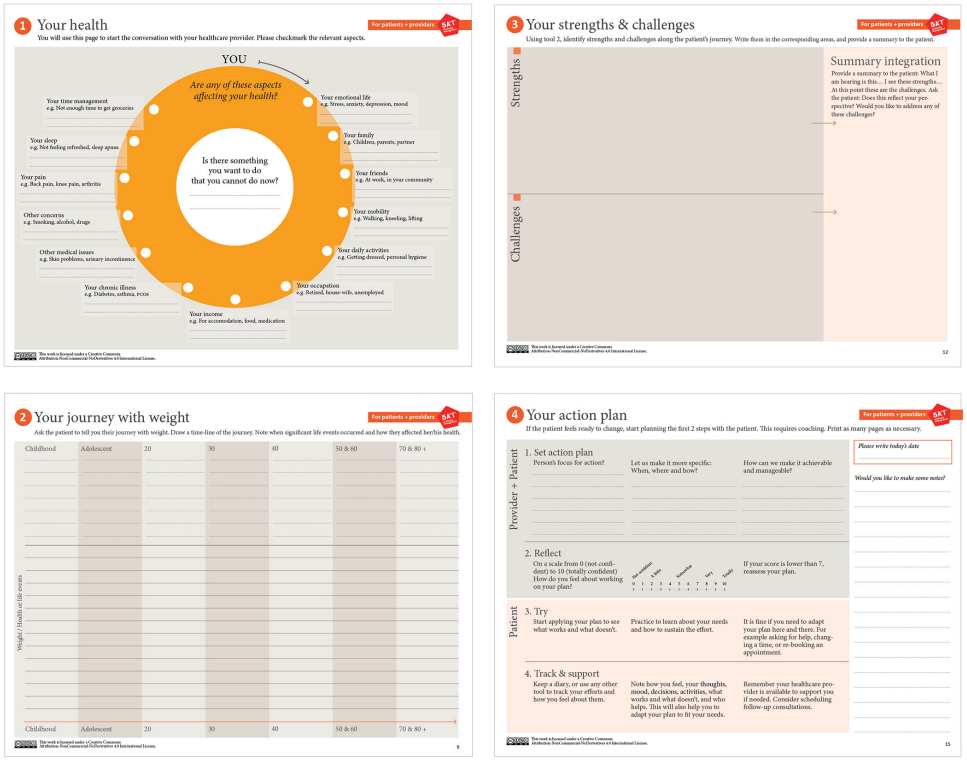

Figure 7. Final prototypes. Above left, tool 1 to understand where the patient is and want to be; below left, tool 2 to identify how significant life events affected weight and health; above right, tool 3 to identify strengths and challenges; below right, tool 4 to coach and create action plans.

Conclusion

As other studies show human-centred design helps achieve collaboration between patients, health professionals and researchers to design SDM tools that put patients and their complex care needs at the centre of the conversation (Boehmer et al. 2016; Garvelin et al. 2016). The participatory and iterative nature of human-centred design approach works well in healthcare.

The approach helps improve the tools by informing how to arrive at a patient-clinician interaction that offers conversation, not just information, and care, not just choice. To achieve this, the tools need to help understand the uniqueness and complexity of each case: the person behind the medical conditions. The tools should foster iterative inquiry to understand what is going on with a particular patient, to get to learn about the patient's circumstances to co-produce personalized care plans.

To arrive at conversations that offer care, tools need to support the science and art of medicine. The flexible, interpretative capacity that enables physicians and patients to co-decide the best action plan given the patient's circumstances (Montgomery 2006).

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