UNDERSTANDING AND DESIGNING TECHNOLOGIES FOR DIABETICS' IDENTITY CONSTRUCTION IN SOCIAL CONTEXTS

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The Jungle **by Wilfredo Lam, 1943.**

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ABSTRACT

This Master Thesis primarily contains an article (in English), but also a supplementary report (in Danish). The article has its offset in health technologies' short-comings in supporting diabetics in the light of the global magnitude of the chronic disease diabetes. In it, we investigate what issues diabetics face regarding identity construction in social contexts. We try to understand this through interviews (N=7) and focus group (N=7) with diabetics, supplemented with an interview with a medical professional. Through open-coded analysis, we use these empirical findings to design technologies by facilitating a design workshop. The workshop stakeholders (N=5) represented different perspectives on understanding and designing for diabetics while taking their identity construction in social contexts into account. This resulted in technological ideas and evaluating thoughts on their fitness. The findings from our interviews, focus groups, and design workshop are then contextualized by current HCI research. In this phase, we confirm current findings, but also introduce new insights regarding how technologies should be designed for diabetics regarding the role of identity construction in social contexts. Besides the article, we have a supplementary report where we reflect on our choice of using qualitative methods. In it, we further reflect and discuss our use of semi-structured interviews, our recruitment strategies, and our analytical approach; open coding.

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Preface

We study our master's degree in IT Design and Application Development (iDA), Aalborg University. At iDA, we have learned to use our non-IT related bachelors, where we both have experience with qualitative method, for design and development of software.

Our choice of subject in our Master Thesis has been motivated by our background in qualitative research, an interest and natural link to human-computer interaction (HCI) and health technologies. We identified that diabetes was a massive global health problem, and that both HCI and non-HCI research had hinted that identity construction is significant for diabetics, notwithstanding a weak research focus on this aspect. For those reasons, we chose to use our skills in qualitative research to investigate what role identity construction had on diabetics from an initial broad perspective. Working with the complexity and intangibility of 'identity' has been difficult. However, as a response to our continuous findings, we identified that the problem regarding identity construction was most significant in social contexts where it caused issues for our participants regarding self-care and their sentiments. This has therefore become our angle on contributing to HCI research and enriching the understanding of diabetic users to improve technologies for them. To further enhance our contribution, we also challenged ourselves by facilitating a design workshop with no prior experience. This complemented our findings with concrete technological design ideas and evaluation of them by different stakeholders.

The journey of completing this Master Thesis has been long and hard but lessened by outside support. We will like to thank our supervisor Mikael B. Skov in guiding us and continuously taking time for feedback and discussion of our issues and possible next steps through this tangled road.

Contents in Article "I Am One of You, Right? Understanding and Designing for Diabetics' Identity Construction in Social Contexts"

Contents in “Supplementary Report: Reflections of Choices and Use of Qualitative Method and Interviews in Our Empirical Study”[i]

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[i] The supplementary report is written in Danish but presented here in English for the context.

I Am One of You, Right? Understanding and Designing for Diabetics' Identity Construction in Social Contexts

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ABSTRACT

In the light of a continuous global increase of diabetics due to lifestyle and shortcomings of technologies aimed at curbing this, we studied how identity construction challenges diabetics in social contexts. We sought to understand this, and in extension hereof to come up with technologies designed for supporting diabetics with self-care while respecting their need for identity construction. To achieve these aims, we first conducted explorative, semi-structured interviews and focus groups with a total of 14 diabetics and 1 doctor. Through inductive analysis, we found four themes related to identity construction in social contexts: Blending in, balancing strategies, normalizing diabetes, and people's understanding. These discoveries informed designs of technologies by facilitating a design workshop with five stakeholders who each represented different perspectives. This resulted in an array of proposed technological solutions and evaluations on their qualities in supporting self-care and identity construction in social contexts. Both our understanding and workshop findings confirmed and enriched current research to some extent. However, we also introduced new insights into how these users should be understood regarding what impact identity construction among diabetics have for designing technologies for them.

INTRODUCTION

Diabetes is increasingly becoming a global health crisis with mainly lifestyle to blame. In the US, 9.4 % of the population (100 million people) currently have diabetes, and 1.5 million of new individuals are prognosed every year [2]. In the UK, 6 % of the population or 4 million are estimated to have diabetes, which has risen from 1.4 million in 1996 [4]. This number is further expected to reach 5 million people by 2025 [4].

There are mainly two types of diabetes: type 1 diabetes (T1D) and type 2 diabetes (T2D). T1D cannot produce insulin and needs insulin injections to compensate, while T2D can usually be managed with lifestyle changes [25]. An unhealthy and sedentary lifestyle is also the main reason for the rise which is observable by the large part of T2D cases, e.g., 90 % of diabetics in the UK [4]. However, both types prosper from a healthy lifestyle [25].

Lifestyle is at the center of diabetes treatment. For the part of diabetics that suffer from T2D, lifestyle is especially important in managing and curbing their illness, but all diabetics can benefit from a healthy lifestyle. Therefor behavioral technologies have potential to reduce these stark numbers by encouraging lifestyle modification. Although their effects suffered from short-term use and no proven long-term effect [21]. The HCI community has over the years give it increased focus. This focus has mainly been on ways to make diabetics reflect on lifestyle related data and visualizations [5, 12, 13, 24]. Further, research has been conducted on the way social situations influence diabetics' ability for self-care [18, 9, 26]. The role of identity has also been subject to research to a lesser extent but has been found to be significant for self-care in three studies. Two studies looked at T1D; one regarding showing/hiding insulin injections and blood measurement tools [23], and another about online storytelling for identity construction [17]. The third study researched diabetes technologies in general but found the quality of having them hidden significant [10]. Furthermore, a direct call for more research on diabetics and identity for daily life technologies is posed by Mamykina et al. [18]. Psychological and sociological research has furthermore shown that identity significant impact on diabetics' and people with chronic asthma's ability for self-care [27, 1].

Give our understanding that identity is socially constructed and maintained [19], and social situations challenging for self-care [18, 9, 26], we found it important to investigate how identity construction influence diabetics' behavior and sentiments in social situations to improve technologies. To get this more nuanced and richer understanding of diabetics in social contexts through the identity prism, we explored and gained a rich understanding through semi-structured interviews (N=8) and focus groups (N=7). Our participants were a mix of diabetics, and one interview had a doctor participant with experience in treating diabetics. Through a design workshop with relevant stakeholders (N=5), we constructed problem statements that were made tangible through scenarios based on our previous findings. In solving these scenarios, our stakeholders reached a series of design solutions, along with constructive criticism of them. This both introduced a series of concrete design ideas, along with a window into our stakeholders' minds regarding what qualities about designs they considered important and why.

BACKGROUND

Before introducing our empirical studies, we will present HCI research in the field of diabetes, chronically ill, and identity to understand previous research and to later contextualize our findings. We will also present our understanding of identity as varying definitions of it exists. Foremost, we will introduce the chronic disease diabetes mellitus and its different types.

Types of Diabetes Mellitus

There are mainly two types of diabetes mellitus (henceforth just diabetes): type 1 diabetes (T1D), and type 2 diabetes (T2D), while there also exist type 1½ (T1½D) that is a varied combination of the two [25]. T1D cannot produce insulin which is the hormone that makes it possible for the body to receive glucose (sugar) from the bloodstream in order to reduce the body's blood glucose (BG) and transfer energy to its cells [25]. T2D, on the other hand, can produce insulin, but their cells' ability to exploit insulin is reduced, and, therefore, they also have issues in managing their BG. Furthermore, T1D is inherent and likely triggered by environmental factors while T2D is a combination of inheritance and lifestyle. Cases of T2D are increasing worldwide due to lifestyle. However, cases of T1D is also increasing with unknown cause. Living with T1D requires taking insulin, e.g., through injections or insulin pumps, while T2D can often be managed through a healthy lifestyle. However, both prosper from a healthy lifestyle. Health consequences are mainly long-term as a response to excessively high blood pressure or too low BG. Regarding short-term symptoms; too high BG (hyperglycemia) can be hard to notice, while too low BG (hypoglycemia) can be more noticeable here-and-now, e.g., feeling dizzy or fatigued. Constantly balancing BG through diet and exercise and/or insulin dosage is, therefore, a daily challenge which has also warranted HCI research into easing this process.

HCI Health Research

The research within health by the HCI community has been focused on data visualization, usability, and behavior.

Meyer and Eslambolchilar [21] provided an overview of the challenges facing behavior supporting technologies for the chronically ill. They stated that research has shown that behavioral supporting apps had a very short life span, and they showed no long-term effect on the users. They also had a negative impact on the users' sentiments due to feelings of constantly being tracked. They credited these issues to a combination of mass production of health apps and a low quality. The low quality was further reasoned to be caused by the complexity behavioral apps had to deal with, e.g., sleep, environment, diet. While existing apps usually only deal with one or a few variables.

Challenges and requirements for behavior technology has also been researched by Motti and Caine [22] regarding health wearables. Wearables were challenged by a small UI, private settings and data collection, and the need for ergonomic customization. Further, three core requirements for behavioral supporting technologies were suggested as 1) detecting and collecting data, 2) analyzing and filter visualizations of data to the user, and 3) encourage, support, and guide the user in using the data.

Behavioral health technologies have also been researched through a participatory design study [16]. Lupton found that a critical issue for digital health was exclusion amongst people with limited digital literacy, financial shortage, lack of interests in learning new tools, and a lack of customization. A couple of ideas that emerged from the workshop was a wearable diabetes monitor that reads the users blood sugar. While another was an 'Energy Scanner' that without direct contact scans the calories in food items.

HCI Research on Diabetes

HCI research on diabetes has, in general, been concerned with BG measurement tools, lifestyle alteration, and decision support tools.

Continuous glucose monitoring (CGM) have previously been researched for diabetic users [28, 24]. A CGM constantly shows the user her current BG so she can adjust insulin and food intake accordingly. Visser et al. [28], who studied elderly diabetics, found that the CGM results could discourage the user when results were not as expected with negative impact on their ability to manage their BG. Further, a major obstacle for CGMs were the fact that they were often upgraded. The elderly found this troublesome as they had no interest in learning new technologies. There was also a strong preference for simple designs with no additional features, etc. Reich and Dunne [24] further found, amongst T1D, that body image was a significant issue for CGMs amongst users when they were noticed by other people. They found a strong need for customization regarding CGM alarms as some participants disliked drawing attention in social situations or be woken up at night.

In extension to CGM, HCI research has also focused on how digital tools can support diabetics in decision making regarding BG management [13, 12, 5]. Decision support systems for diabetics has presented the user with past/present/future BG development data along with data on variables that can impact BG, e.g., food consumptions. The system can then guide or recommend action based on the data. It was found that decision support apps mainly suffered from low retention rates, low usage, poor UX, and negative emotional impact on the user [13]. Another study found that people with T1D use two different cognitive modes in combination, e.g., routine thinking vs reflective thinking, to make insulin-dosage decisions [12]. Thus, visualization of data for decision support systems could be improved by designing with respect to the user's context and current cognitive mode. Regarding visualization of forecasts systems for how a meal impacts the user's BG, room for design improvement have also been found [5]. Through focus groups and wireframing with T2D participants, Desai et al. found that participants mainly required a call for direct action, and a simple design with just enough information for the current situation. In other words, the design of the visualization should be designed for the user's context: A situation where a less significant and here-and-now decision is to be made.

Lifestyle and self-management among people with T2D have also been researched in HCI [18, 9, 26]. It was found by all three studies that participants constantly negotiate with themselves regarding how, and how much they can divert from their ideal lifestyle; containing diet and exercise. Further, since self-management was experienced difficult and complex, participants were often discouraged by it which led to non-adherence regarding medication and the encouraged lifestyle [18]. Another point of discouragement was that some participants felt that medical professionals' directions were too strict, and mainly focused on 'don'ts' [9]. It was, therefore, advised that digital diabetes tools support the user in small, incremental lifestyle changes, and help them balance 'bad' lifestyle options with 'good'.

Diabetics' Identity in HCI Research

Three HCI studies had to some extent focused on identity amongst diabetics [23, 10, 17]. By field-testing a prototype for BG management and confounding factors, e.g., hours of sleep, it was found that experienced diabetics used it for storytelling and identity construction instead [17]. The storytelling had the functions of (i) addressing and keeping a positive attitude to health management; (ii) it created confidence in diabetics' ability for self-management; (iii) it helped them in connecting their identity after and prior to getting diabetes. Another study looked at how people with T1D were affected by use of measuring and injecting insulin in social situations [23]. It was found that different social situations can have a large impact on the diabetics for self-management in individual ways. For instance, not wanting to show insulin devices in the presence of new people or wanting to show it in front of children to normalize it. Thus, diabetes technologies should be able to both be hidden and shown. A participatory design study for everyday management tools for diabetics also found that participants wanted digital tools to be integrated with everyday objects to avoid being associated with diabetes [10].

Identity and Social Context

Wanting to be associated with diabetes or not is a matter of identity. Here, we will address how *identity* is to be understood in this paper. Note that identity and *self-image* or *self-concept* can often be used interchangeably depending on research area and time period. However, we use the term *identity* due to previous HCI research [23]; [17], the use of the constructing in psychology research [27], and to maintain and build bridges to related research areas [8].

In order to understand the abstract term identity, we must first understand its creator. In our understanding, the self is the agent of an individual's identity: *"The self consists of all statements made by a person, overtly or covertly, that include the words 'I', 'me', 'mine', and 'myself'. (...) A person's attitudes, intentions, roles, and values represent the self"* [6]. The self further has and constructs attributes, depending on social context. They are divided in a hierarchy; some more important than others. The self seeks enhancement by filtering and focusing on certain things, e.g., interpretations or events, that strengthen its identity. It further seeks consistency by maintaining values, rituals, or norms - guarding its identity to reduce complexity. Lastly, the self strive for an efficient identity by seeing itself as competent, e.g., by avoiding tasks that it deems too hard.

In the process of creating, maintaining, and modifying an identity, we use the term *identity construction* to communicate that it is always in a state of flux during social situations. The self is realized as identity is constructed through interactions with others. The self can only view and acknowledge its own identity by taking on the perspectives of others and seeing itself through their norms and values, which Mead refers to as the *significant other* [19]. The significant other can be society, group of friends, or other communities that the self wants to see itself as a part of. An individual's behavior and sentiments are, therefore, influenced by the social process of identity construction.

In order to understand how identity construction influences diabetics behaviors and sentiments in social contexts and their requirements for technologies, we conducted interviews and focus groups.

UNDERSTANDING STUDY

We conducted interviews (N=8) and two focus groups (N=7) to gather a rich understanding of diabetics' views on how identity construction affected their lifestyle choices and self-care. We used mixed methods, viz. face to face interviews, telephone interviews, and focus groups. The strategy of mixed method gave us a nuance of data collection approaches into to the sensitive and complex topic of identity construction that each helped to enlightening it in different ways. The interviews provided us with rich insight into how our participants experienced living with diabetes, and what role identity construction played in this. The focus groups allowed for discussions and inspiration of narrations among participants, along with creating an environment of peers where participants could discuss sensitive topics in their own language [7]. An interview with a doctor about our findings and her experience with diabetics gave further insight into to our diabetic participants' daily lives and how identity construction affected it.

Interviews

We had a total of eight interview participants. Five T2D, two T1D, and one doctor (Table 1). Our diabetic participants ranged in age from 24 - 63 year with a mean of 46 years old. They have had diabetes for 0.5 - 12 years with

Id	**Diabetes type**	**Gender**	**Age**	**Occupation**	**Experience (years)**	**Interview form**
PI1	2	F	63	Pensioner	6	Face to face
PI2	2	F	63	Pensioner	12	Face to face
PI3	1	F	24	Nurse	6	Face to face
PI4	2	M	57	Early retirement	4	Telephone
PI5	2	M	53	Landscaper and handy man	1	Telephone
PI6	2	F	24	Unemployed	0.5	Telephone
PI7	1	F	35	Consultant	8	Face to face
PF8	2	M	63	Pensioner	2	Focus group
PF9	1.5	F	65	Pensioner	3	Focus group
PF10	1.5	F	72	Pensioner	20	Focus group
PF11	1	F	54	Social caregiver	33	Focus group
PF12	2	M	59	Factory worker	9	Focus group
PF13	2	F	68	Secretary work	5	Focus group
PF14	2	F	56	Early retirement	12	Focus group
Doctor	-	F	54	Medical professional	-	Face to face

Table 1: Overview of all participants from our interviews and focus groups.

a mean of 5 years. We initially recruited through convenience with the constraint of being over the age of 18, and no monetary incentives were offered. After reaching five participants, we changed our convenience recruitment approach to selective where we had added the constrain of being under the age of 40 in order to get a more diverse pool of participants. We recruited two participants through personal network, one through a Facebook diabetes group, and four through local branches of the Danish Diabetic Association in Mid Jutland.

We created an interview guide [15] which was based on a loosely structured pilot interview with a T2D and on current HCI research on the field. Our interview guide was semi-structured and was continuously revised. The last edition contained 43 questions with 53 possible elaborating questions. The questions were developed based on categories that we initially wanted to explore:

- Characteristics of the participant and their daily life.
- The participant's understanding of a good lifestyle for a diabetic.
- Social: How often participants saw other people with diabetes, and, in general, how the presence of people affected their ability to manage their BG.
- Identity consistency before and after being diagnosed.
- Feeling of being competent to handle their diabetes.
- Experience with diabetes related technology.

Although we originally sought to explore identity from the categories listed above, it became apparent that the social category was the area that caused issues for our participants. The social category gave most of the data and became the primary source of our analysis, and the focal point of this article.

The interview lengths varied from 20 - 70 minutes with a mean of 42 minutes. Two interviews were conducted at the participants homes, two in cafés, and three by telephone. The face to face interviews were conducted by both researchers, while one researcher did the telephone interviews.

Our doctor participant had years of experience working as a medical professional in the Danish Military, at an ER, and as a chief physician at an orthopedic ward. She had also previously been practicing at a ward exclusively for diabetics. All these medical experiences included understanding and medically helping diabetics in different ways; from guidance to operation. Further, she also had a family member that was diabetic which gave her an extra perspective. Her interview was guided by a semi-structured interview guide which we created based on our findings from the interviews and focus groups. It was done after all our other interviews and focus groups had concluded. It lasted 38 minutes, was done in the doctor's home, and was conducted by one researcher.

Focus Groups

We had seven participants in two focus group (Table 1). Four of our participants had T2D, while two had T1½D and one had T1D. Their age range was 54 - 72 years with a mean of 62 years old, and they had been diagnosed for 2 - 33 years with a mean of 12 years. The participants were recruited by convenience from the same local branch of the Danish Diabetic Association in Mid Jutland. All participants knew each other as they weekly attended the same diabetes group meeting where they dine, share experiences, and relax. They were chosen since establishing focus groups without offering monetary incentives proved too difficult. As they came from the same local branch of the Danish Diabetic Association, the groups were to some extent homogeneous regarding age, place of residence, understanding of a good diabetic lifestyle, and acceptance of their disease. However, they had different lives, different experiences, and different stories to tell and opinions to share which gave the focus groups dynamic, notwithstanding its homogeneous dimensions.

We used the same interview guide from our interviews. However, we took on the role of moderators rather than interviewers, as we sought open discussion and wanted the participants to interview each other while we kept them on topic and added stimulus through questions when needed [7]. The focus groups were further conducted simultaneously at the meeting place of the Danish Diabetic Association at the local branch and were thus facilitated by one researcher each. The focus groups lasted 57 min and 38 min.

Data Preparation and Analysis

We did not directly seek to verify or test existing theory, but rather to explore our data and get an understanding of how the complexity of identity construction affected our participants in social contexts. For this reason, we had an inductive analysis approach and used grounded theory analytical tools through questioning and comparing [3] to give the data its own voice. This approach also supported us in reducing the bias and assumptions introduced from our literature review and personal beliefs and motives for during the research.

The data from our diabetic participants was transcribed by meanings condensation [14] and open-coded in the qualitative analysis software NVivo 12 Pro (www.qsrinternational.com/nvivo). We coded two interviews together to create initial codes that we used as guidelines on coding individually, while still questioning our data for new codes to emerge. We went through an iterative process of re-coding and discussing our codes. After this process, which resulted in 65 unique codes, we iteratively explored and combined themes that emerged and explored their relations.

The interview from our doctor participant was also transcribed by meaning condensation and open-coded by our both directly in the transcription text.

FINDINGS

The interviews and focus groups gave a rich picture of our participants' view and experiences living with diabetes and how identity construction affected this. This is expressed through themes that we will present here, along with relations among them. The themes will be presented by starting from why and how our participants were influenced by identity construction in social contexts along with other factors such as attitude and other motivation, over to how other people's understanding of diabetes affected their identity construction and, thereby, sentiments and behavior.

The seven diabetic interview participants will be referred to as PI1-PI7. The seven diabetic focus group participants will be PF8-PF14, and the doctor participant will simple be referred to as the doctor.

Blending In

Blending in was concerned with how rigorously a diabetes diet was to be followed in the company of others. As people construct their identity through the eyes of others (the significant other), along with their opinions, norms and customs [19], our participants had a desire to be viewed favorably through these eyes. Social situations could, therefore, cause challenges for several of our participants in both our interviews and focus groups. The challenges were both individual and depended on their attitude towards how strictly their individual diabetes diet was to be followed, along with personal motivation which all weighted in on their desire to be viewed favorably by the significant other.

All our participants, except one, only wanted to follow their diabetic diet recommendations in moderation in social situations, unlike when alone. When alone and, thereby, absent of the significant other, most strictly followed their diet. However, they still wanted to eat what they pleased to a certain extent in social situations. For instance, PI7 who had young children was more focused on living a long life while still being flexible on her diet in social situations:

"(...) if I am not going to die before it is my time, I will take good care of myself." "If I am out eating with my husband and there is an absolutely delicious home-baked bread then I am going to eat it." - PI7.

PI2 who stood out from the other participants regarding diet attitude had diabetes related medical problems with her eyes, and always strictly followed her diet *"I never compromise, so I don't take that cake or from that fruit ball"* - PI2. Furthermore, our two participants (PI7 and PI3) who had T1D had the option to be more flexible with their diets in general as they could more easily control their BG with fast acting insulin injections. Despite this, PI7 was still amongst the strictest participants to follow a healthy diet, while PI3 was the most flexible.

The reasons behind their attitudes for diverting from their diet in social situations was also highly individual. A common motivational factor for seven (50%) of our participants was to slim down which made them modify their diet social situations. Our only participant with young children, PI7, was, however, strongly motivated by staying healthy in the long term for the sake of her children. Surprisingly, the direct health consequences as a motivator was only seen in three (21 %) of our participants. The doctor also emphasized that diabetics were usually not influenced by short term health consequences as their BG is manageable in contrary to people with allergies that can experience severe health consequences here-and-now:

"If you get something you're allergic to then you die from it. Then if you get too much sugar a single night then you get an increased blood sugar the day after, right? And that you can handle if you eat a bit healthier the day after." - Doctor.

However, the most common directly stated motivational factor amongst eight (57 %) of our participants was to blend in which spoke to the importance of appreciating the importance of identity construction. PI3 clearly expressed that she did not want to be viewed as different, as a *freak*, for eating differently, and not doing so would take an emotional toll on her*:*

"Yes, there must be room for the other stuff [not strictly following a diabetic diet]. Otherwise it gets too goddamn troublesome and then you're just going to become a, I feel that at least, that you're somewhat of a freak that doesn't fit in." - PI3.

Balancing Strategies: Without Technological Support?

Ten (74 %) of our participants also used balancing strategies to divert from their diet while controlling their BG in social situations. This allowed them to attend to their identity construction through the view of the significant other. However, the balancing was also found to be associated with controlling mental stress. Practically, the balancing was often done through moderating the amount of food items that diverted from their diet, but also through exercise.

While most participants used their BG as their guide to balance their diet, this was not entirely the case for PI7. She used her mental health, despite her BG being good *"The mental account has to be positive then it is okay to sin a little"* - PI7. However, for most participants, the BG were the driving factor on emotional health and the aim of employing balancing strategies. For instance, PF8 expressed that he used exercise to balance his BG when diverting from his diet *"Yes, if you exceed a little (...) then it is just out and take a walk afterwards"* - PF8.

It was somewhat striking that none used technology to support balancing their BG as many apps exist for tracking food and exercise. However, five (36 %) of our T2D participants used walk counters in the form of bands around their wrist counting their daily steps, while two participants with T2D had certain opinions of them. The five users mentioned that it motivated them to meet a daily goal of 10.000 steps a day. On the other hand, PI4 disregarded them despite their popularity in his diabetes motivation group. He expressed that goals for daily exercise should be pulse; not number of steps:

"They [other diabetics] were interested in them [the walk counters]. But I think it's just as important to get your pulse up. I have some difficulties convincing them of this. (...) But then people walk around in a slow pace with their tiny steps, and if they have short legs, they don't get their pulse up, do they?" - PI4.

While PI4 required pulse as an indicator, PF12 found the step counts useful, but not in the wrist form. As she had a disease where she moved her arm a lot, it gave her wrong data, but she used it on her phone instead:

"It is a watch, but there is a walk counter in it. I don't use it that often because every time I move my arms then it counts, so it's not [sentence stops]. I have a walk counter in my pocket I use." - PF12.

PI2 had prior experience with an app that tracked her calories through user-input. PI2, who had T2D, had stopped using it since the greater control over her calories, and carbohydrates had led to an unwanted weight loss with health consequences. This was somewhat surprising as PI2 was our participant that wanted to follow her diet as strictly as possible, although she was strongly motivated by her health issues with her eyes:

"I don't want to weigh things and report calories because that takes a lot from me. I've done it in periods and I also lost weight there. My eyes got affected because I lost weight too rapidly and then I couldn't control my blood sugar. I'll rather be fat and be able to see then be thin and not being able to see." - PI2.

Normalizing Diabetes

Eight (57 %) of our participants had an emphasis on appearing normal in social contexts which was supported by how they defined *normal*. How they defined normal and sought to construct their identity as such also had influence on their behavior as they sought to be viewed as normal by this definition. Further, as most participants had the understanding that a good diabetes lifestyle was living healthy with room to compromise, it was also argued by them that it was the same as a normal lifestyle.

While how participants normalized diabetes differed, PI3 expressed the most common view with her lifestyle being normal "*I don't think there is much difference on it since all should really live after a diabetic's life rules."* - PI3. Other participants also emphasized that various dieting regimen and restrictions are common today; normalizing the lifestyle *"There are so many that eat differently"* - PI4. Another way of normalizing a diabetic lifestyle was through the perception that women constantly want to slim down which harmonize with a diabetic lifestyle *"You can feel that you are on a never-ending slimming diet in some way. (…) Women, they always want to lose weight, right?"* - PI1. On the other hand, PI2, the only participant constantly following a strict diet regime and who did not normalize diabetes, expressed how her diet strictness in social contexts made identity construction difficult:

"I'm often told that I'm hysteric and a fanatic and that I'm not good too myself. Although I am! But others don't think so." - PI2.

It was quite interesting that PI2 was emotionally affected by how her identity was constructed, while it did not influence her behavior. Furthermore, the doctor explained that diabetics usually viewed themselves as normal - or not sick - as they rarely have symptoms and have a *normal* lifestyle, as she expressed through patients not stating that they were ill when asked, despite them having diabetes:

"I've also met people who said, 'I'm not ill'. But, when you go through their medicine list, you can see they have diabetes. (...) They can get both hearth and diabetes medicine, but they don't feel sick doing their daily life and, therefore, they don't think about it." - Doctor.

People's Understanding

People's understanding of the individual diabetic often challenged our participants, e.g., (not) serving sugar-fueled food or prejudice about their lazy lifestyle. How the participants wanted to be treated varied, and it required the people around them to know about the participants individual preferences and understand the disease. A lack of understanding and misconceptions also led to bias about diabetes which caused emotional distress for our participants. The lack of understanding and making the right considerations should also be seen in the light that it made our participants desired behavior either hard or impossible to achieve regarding identity construction.

Consider considerations

Nine (64 %) of our participants felt that there was a lack of understanding regarding their diet in social situations. This could cause issues for their identity construction, and their ability to manage their BG. PI2, for instance, who followed a strict diet had experiences where she was asked to bring her own dessert. She refused. Although the host tried to make considerations for her, PI2 was disappointed by the host's choice for her as it did not fit her food preferences:

"They could have ordered some diabetic cakes from Lagkagehuset [pastry shop] just like they ordered cakes for all the others. (…) I got so furious. I thought they lacked understanding." - PI2.

On the other hand, participants were often frustrated that consideration had been made on their behalf which made them stand out, along with getting cheated from what others were enjoying. For instance, PF11 expressed dismay and annoyance over standing out due to considerations being made on her behalf:

"People they sit and stare – what is she having? It's so embarrassing. (…) Interviewer: What did you wish for in that situation? That I've gotten the same as everybody else." - PF11.

In that situation, PF11 regretted that she was denied the opportunity of modifying her diet to construct her identity for the social contexts which caused her grief.

Prejudice about diabetics

Besides the issue of people understanding our participants' individual diet preferences, six (43 %) of participants also expressed frustration over some people's prejudice. The prejudice was based on diabetics being viewed as fat and lazy, and that they could simply adjust their lifestyle to get rid of the chronic disease. When our participants met people having this prejudice, their ability to construct their identity in social contexts was severely challenged, since he significant others' reflection of them was preconceived [19].

Dismay over lack of understanding was heatedly discussed in one of our focus groups regarding a TV program on a major state-run Danish network. Here, chronically ill participants get their diet adjusted by a diet coach where one segment made a diabetic give up her insulin for diet adjustment:

"They put us in a bad light. (...) There are these things in TV, e.g. ['eat yourself healthy']. You can't just throw people's insulin and stuff away, right? Then you're sure you'll get bad, right?" - PF9 *"Sometimes it's almost as they say it's our own fault"* - PF10.

After identifying these issues diabetics face regarding identity construction in social contexts, we sought to design technologies to help them.

DESIGN WORKSHOP

The identified issues for diabetics regarding identity construction in social contexts from our understanding study were operationalized in a design workshop through two chosen problem statements, expressed through scenarios. Here participants came up with digital solutions to the scenarios and identified technological qualities to valuable solutions.

Participants

The workshop consisted of five participants that each represented a perspective for relevant stakeholders. All participants were new to our project, except for the doctor. We had an IT participant who had experience in design and development of software. We also had a sociologist who worked at a social research department, and she had previously done a project on health and identity amongst public employees. We further had the doctor with experience treating diabetics, a relative to a T2D, and a 22-year-old T1D. The participants were recruited through our personal and extended networks, and they each received a cinema gift card (~$25).

Design and Structure

Based on the themes from our understanding study, we designed four problem statements, and each had a scenario the participants had to solve through digital design ideas. The scenarios were further based on real-life stories and personas from our understanding study. Besides capturing themes from our findings, the scenarios were also designed with respect to what we expected solvable and engageable by our participants within the timeframe and structure. Besides the scenarios, the problem statements conceptualized the challenges in the scenarios, and they were:

1) Self-care in a social context.
2) Individual effects of exercise and diet on blood sugar.
3) Individual effects of mental state on blood sugar.
4) Understanding individual diabetics' diet restrictions and preferences.

However, in order to work in-depth with each problem statement with a timeframe of up to two hours, as some participants expressed being busy, we discarded two problem statements and their scenarios.

We chose to keep problem statement number 1 and 4 since they seemed best designed to operationalize our identified themes in our understanding study: 1) *Self-care in a social context* was concerned with how a diabetic at a dinner event could discretely calculate the nutrition of the foods in order to eat the same as the rest while managing her BG. 4) *Understanding individual diabetics' diet restrictions and preferences* was concerned with how diabetics could communicate diet preferences and restrictions to avoid being served undesired food items at dinner events.

The workshop took 112 minutes and was mainly structured by three iterative phases - one for each problem statement [11]: 1) Individually sketch 1-3 ideas, as seen in progress on Figure 1. 2) Each participant present ideas and the group discuss them. 3) In the group, mix the ideas into one or more stronger ideas. After the idea iterations, participants had roughly $15 collectively to invest in the ideas in order to prioritize them. Further, during work on a problem statement, its related scenario was always visible on a PowerPoint display for referencing.

FINDINGS

Our design workshop generated digital ideas, desired qualities, and evaluation about their ability to handle the scenario in question. The most popular ideas will be presented here, along with how the participants valued and mixed them together. All the ideas can, however, be seen on Table 2.

Solutions for Blending In

The following ideas were a response to the problem statement 'self-care in a social context' expressed through the scenario 'blending in'. This was a situation where the diabetic Trine at a dinner party wanted to eat as the other guests. She, however, still wanted to be able to manage her calorie intake and carbohydrates to manage her BG in a discrete way.

Wearable Virtual Plate Scanner

The participants decided that an ideal digital tool for 'blending in' was a mix of two ideas: The Virtual Plate and the Food Scanner (Figure 2) on a smartwatch (Figure 3). Food items would be scanned to a digital food selection. The user could then fill a virtual plate by dragging and removing food items with their nutrition values until satisfied. This would be done using a smartwatch to particularly make the scanning / taking picture process as discrete as possible. Issues, as suggested by the doctor and our oldest participant, was the requirement of digital literacy to use a smartwatch. It was, therefore, suggested that it should also be available on a smartphone platform as well to make it more accessible.

Figure 1: Overview of the design workshop setup. The phase of individual sketching of ideas is here seen in progress.

In the round when participants were to invest in ideas, this idea got a whopping 90 % of their collective investment capital. This was based on its educational value, discreteness, and its ability to handle the challenge of blending in.

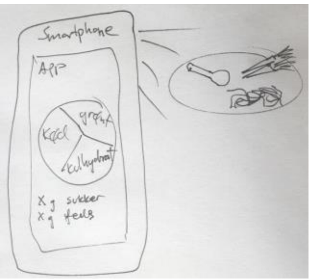

Figure 2: 'Food Scanner': Smartphone app that scans nutrition in foods and display it to the user.

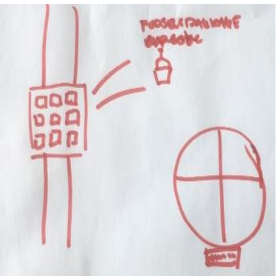

Figure 3: 'Wearable Food Scanner': The same app as in Figure 2, however, on a discrete, wearable platform instead.

Smart Plate

Although with some issues, another less popular idea to deal with blending in was the Smart Plate. The software developer suggested a plate that was divided into four food nutrition types, which was expressed through writing instead of sketching. The Smart Plate weighted each type of nutrition and communicated a total food nutrition value to the user. He suggested you could blend in with the plate at dinners. On the other hand, the doctor and the next of kin argued the plate would make the user stick out as it would be different from the rest. Furthermore, while it was collectively agreed that you would stick out with the Smart Plate, the doctor and the sociologist suggested it could have an educational value in the user's home. Also, the Smart Plate was criticized for not informing the user about the nutrition prior to food commitment by having it on your plate. There was also the practical issue of dragging it around to dinner parties. However, it was argued that it could have value in niche situations such as retirement homes where the user's own utensils are at hand, but not necessarily for blending in.

Solutions for 'Understand my Diet'

Although the scenario 'understand my diet' from the problem statement "understanding individual diabetics' diet restrictions and preferences" bore less ideas and participants expressed difficulties in solving it through technologies, a couple interesting ideas were produced, nonetheless. 'Understand my diet' had the challenge of the diabetic Kirsten who wanted to communicate her individual diet restrictions and preferences to a dinner party host.

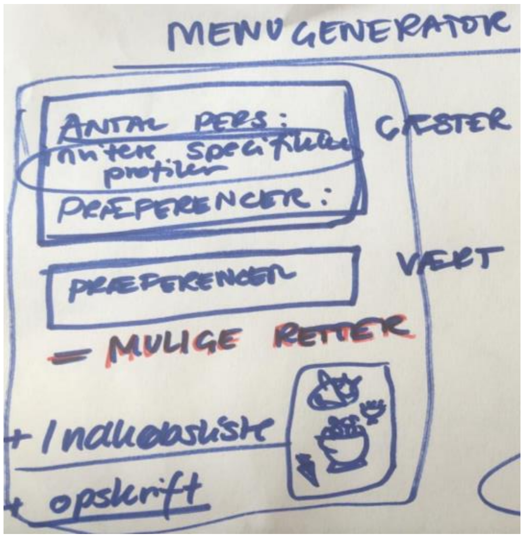

Figure 4: 'Joint Menu Generator' Smartphone app that generates a menu based on multiple user's food preferences and restrictions.

Joint Menu Generator

The sociologist suggested the Joint Menu Generator (Figure 4) as an app that had the individual diabetic's food preferences and restrictions. The host of a dinner party could then see them, type in her own food preferences and/or restrictions for the dinner party, and in return get an array of possible recipes that matched the preferences and restrictions, along with a grocery shopping list. The app was merged with qualities from the idea SoMe Diabetic, as suggested by the next of kin. This addition gave it the

Idea	*What does it do?*
Virtual Plate	A virtual plate displayed on a smartphone app where the user can fil it up and remove food items until a desired total nutrition value has been reached.
Food Scanner	Smartwatch app that scans food through its camera and return the nutrition value.
Smart Plate	A plate that is divided into 4 major food groups. The plate weights each division and returns the nutrition value.
Sugar Thermometer	Thermometer you stick into food. It then displays the level of sugar in the food item.
Dynamic Day Planner	Plan food intake throughout a day, e.g., very healthy through the day to leave room for cake in the evening.
Carb Guardian	App that solely tracks carbs intake. It alerts if a daily user-defined carb limit has been reached.
Dot Food	A physical dot the user can use as a scale together with a camera to calculate nutrition values of food items.
Joint Menu Generator	An app that lets the user list diet restrictions. A dinner host can view them, and list her own food preferences, and the app will generate menus with respect to their individual restrictions and preferences.
SoMe Diabetic	Invisible diabetic mark on Facebook. Event host can see if diabetics attend events, but not who.
Silly Messenger	A funny animated character that communicates food preferences through a short animated .gif.

Table 2: Overview of all individual ideas from the design workshop.

qualities of being able to integrate with social media and be active when a diabetic participates in a Facebook event while still being anonymous. It would be anonymous as a feature of the SoMe Diabetic masked the Facebook participant. The host can, therefore, see a diabetic participate with her diet restrictions and preference, but not who it is.

The app was heavily discussed. The app was deemed mostly relevant for major events or with people outside of the user's inner circle, as the latter would already be aware of food preferences and restrictions. Further, it was also suggested by the sociologist that the app could have relevance for anyone with diet restrictions. Making it mainstream would also support diabetic's diet in being normal in social contexts. The diabetic appreciated that you could communicate diet restrictions without being directly identified as a diabetic.

The app, however, only got 10 % of the collective investment funds while the Wearable Virtual Plate and Food Scanner got 90 %. The logic behind was that the latter was highly relevant for diabetics according to the doctor. The Joint Menu Generator, however, dealt with a personality issues as this issue of communicating diet restrictions and preferences should be handled without a necessary use of technologies, as the diabetic emphasized. The agreement about the strengths and relevance of the Joint Menu Generator was mostly due to its versatility in catering for vegans, people with lactose intolerance, etc.

DISCUSSION

Our findings from both our understanding study and design workshop will be discussed regarding their contribution to current research. The discussion will take its offset in the two broad categories of identity construction in social situations, and how others understanding of diabetes affect diabetics' ability to construct their identity.

Minding Your Diabetes while Blending In

Identity construction in social situations was a challenge to our participants that they wished to overcome. In order to do this, they needed to balance their diet in respect to their BG, along with doing it in a discrete way to blend in.

Balancing

Our findings showed that most of our participants frequently used balancing strategies for their BG management resonates with other HCI research [18, 9, 26] Therefore, we further strengthen the currently dominating argument that technologies regarding lifestyle and BG management should make it possible for the user to balance 'good' with 'bad' lifestyle decisions. This is further made explicit by Hentschel et al. [9] that people with T2D were discouraged by their medical professionals emphasize on only 'good' lifestyle decisions. On the other hand, we also had a T2D participant who preferred the rigorous lifestyle with no room for 'bad' lifestyle decisions. Thus, we also argue that technologies should cater for this type of user as well who prefers a lifestyle with no compromise, notwithstanding a common need for identity constructing.

Although how to reflect on actions and BG and finding the right insulin dosage is well-researched for T1D [28, 24, 13, 12, 5], the goal of the user is not always the BG when balancing. How to balance lifestyle choices for T1D and T2D also has some differences since T1D can more conveniently compensate with more insulin while T2D cannot. Our participant PI7 had T1D but had a mental model of a good diabetic as someone who is mostly healthy. When she ate unhealthily, although balanced with healthy food and exercises choices, she felt bad, despite her BG being fine. For a user like PI7, the balance mechanism regarding BG will not suffice. We, therefore, argue that designs for lifestyle balance could also help the user with her mental balance. How it could help the user regarding the mental should be tailored to the specific user since the mental balance is reflected in the user's understanding of a good diabetic that she wants to identify with. As this understanding is quite individual and constantly subject to change, the technology needs to reflect what their understanding is in order to use a tailored mental balance scale. For instance, PI7 had the requirement of daily exercise, while PI4 only had it once a week.

Incognito

Besides resonating the need for balancing mechanism in technologies in current research, we found that it was in social situations that it was particularly relevant. Our participants mostly found it important not to stick out and a wish to blend in for identity construction. This was challenging where being served different food than other guests during dinner parties. Mead's term of the significant other [19] dictates that identity is constructed through the perspectives of others that an individual wants to identify with, e.g., their norms and behavior. Through this prism, our participants often had a natural motivation to behave like their significant other with accordance to their eating customs, and not be viewed as a *freak*, as PI3 put it. Technologies about balancing lifestyle with respect to BG should, therefore, fit into social situations as it is in those situations they have a significant value for the users.

The context of social situations put a constraint on how balancing technologies should be made since the technology that aid them in not drawing attention could do the exact opposite. Thus, it should have the quality of being discrete itself. This quality has also been identified for people with T1D who continuously need to keep track of their BG through measuring [24, 23], and in a study with mixed T1D and T2D participants [10]. Although not directly tied with lifestyle balancing, this quality could be seen in the light that steps counting wrist bands were highly regarded and used by five (56 %) of our participants. The wrist bands were discrete and fashionable; they did not stick out, but still served their functional purpose. In our design workshop, the far most popular technology was also a wearable that blended in as a normal accessory through a smartwatch. On the other hand, the Smart Plate that weighted and calculated food placed on it would draw attention to it but was deemed educational and functional for private use. For these reasons, we argue that designs need to take account of social contexts by either being able to or be completely hidden while operationalizable. Although our studies show that being hidden is a desired quality, it should be noted that another study about the importance of hiding/showing T1D technologies found that a few people used their insulin injections or BG-measuring tools for strategical purposes [17]. That could for instance be to get in front of a line or end a bad date. However, these types of cases have not been found in our understanding study.

Make Them Understand

People's understanding of both diabetes in general, but also the individual diabetic affected our participants' identity construction and ability for self-care.

(Don't) consider me!

It varied greatly to what extent and if at all our participants wished for others to make considerations for them in social situations. Lack of diet considerations in social situations has also been reported as an issue previously [9, 26]. However, we have found that making considerations can also be an issue, as expressed by nine (64 %) of our participants. Looking at the perspective of strictly managing BG, then considerations are always desired. On the other hand, when looking through the prism of identity construction, making considerations for a diabetic can be undesirable as it hampers them in behaving according to their significant other. For these reasons, we argue that it is highly individual how diabetics want to be considered in social situations, which should be reflected in technologies.

As it is individual what considerations should be made for a diabetic in social situations, technologies should have the quality of being tailored to the individual. A design that can potentially deal with this challenge was the Joint Menu Generator from our design workshop. As the user can type in her own diet restrictions and food preferences, it presents the host of a dinner party with a nuanced view of the individual diabetic, rather than just making considerations for a diabetic in general. Furthermore, this technology also supported our participants' common wish for normalizing a diabetic lifestyle as such a technology could be used by anyone with diet restrictions.

Public view

Our participants' wish for normalizing a diabetic lifestyle sometimes clashed with a general view and understanding of diabetes, and how it should be managed. Their process of identity construction was under attack by people viewing diabetes as a self-caused disease and associated with lazy and unhealthy people. Research regarding how other people's understanding of the disease affects diabetics both within and outside the scope of identity construction has not been done to our knowledge. However, it is evident from our research that it is an issue for some of our participants that should warrant research into it.

Besides traditional awareness campaigns, interactive designs could help educate the public on diabetes and combat prejudice. The success of interactive designs for environmental awareness purposes can help in informing solutions to a lack of diabetes understanding. For instance, Mendes et al. [20] made a virtual forest at an exhibit where participants could burn it down. Through an app, they could then help regrow it which made them aware of the issue of forest fires and how lengthy forestation is. Interactive awareness designs for diabetes understanding could, for instance, have the qualities of experiencing a diabetics daily life through a nonlinear story or a small web-based game where diabetes is to be managed.

LIMITATIONS AND FUTURE WORK

As our participants from our understanding study were experienced diabetics, the findings regarding identity were surely affected by these factors. Issues regarding self-consistency and acceptance of their diabetic was not apparent. As these factors could have implications for technologies, we suggest future work on understanding recently diagnosed diabetics.

Our paper presents opportunities for future work on employing prototypes. Prototyping discrete balancing technologies could be valuable for data on how these would work in the field. Further, prototyping of communicating diet restrictions and preferences through our Joint Menu Generator could also be a next step that could also be helpful for other groups with diet restrictions, e.g., variants of vegans.

CONCLUSION

In order to explore how identity construction affected diabetics in social contexts, and what role technology can play to help diabetics manage this process, we have conducted an understanding study and a design workshop. The understanding study was done through interviews (N=8) and two focus groups (N=7) where one interview included a doctor, while the rest were with diabetics. Based on these, we identified four themes: 1) Blending in: How identity construction in social situations influence the ability for self-care. 2) Balancing strategies: How they balance 'good' with 'bad' lifestyle decision to adapt to social context and identity construction. 3) Normalizing diabetes: How they internally seek to be characterized as 'normal'. 4) People's understanding: How others understanding for the individual diabetic and their approach to lifestyle affects their identity construction, along with prejudice about the type of people who gets diabetes. Further, the design workshop involved five stakeholders that each represented different perspective on diabetics' identity construction. The previous identified themes were used to construct two scenarios that the participants designed varies technological solutions for, along with reflections on their qualities.

In sum, our contribution is made through putting our themes and design solutions regarding diabetics' identity construction in social situations into the context of previous HCI research. We both confirm previous findings and contribute with new insights into how identity construction affects the design space of technologies for diabetics.

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Supplerende rapport: Refleksioner over valg og anvendelse af kvalitative metode og interviews i vores empiriske studie

Af Mette S. Andersen og Daniel A. F. Mikkelsen

1. Introduktion

Denne rapport har til hensigt at reflektere og diskutere vores brug og valg af kvalitativ metode og interviews i vores forståelsesstudie (understanding study, red.) i artiklen "I'm One of You, Right? Understanding and Designing for Diabetics' Identity Construction in Social Contexts". Det antages, at læser har læst denne artikel forud for læsningen af denne rapport og har kendskab til vores anvendte metoder, resultater og formålet med artiklen. I denne supplerende rapport arbejder vi ud fra problemstillingen:

'Hvilke styrker og svagheder er der ved vores metodevalg og anvendelse af kvalitative interviews?'

For at besvare denne problemstilling diskuterer og reflekterer vi over vores valg af kvalitativ metode i forhold til en mulig kvantitativ tilgang i sektion 2. Efter disse refleksioner over valget om en kvalitativ tilgang, reflekterer vi over metodevalget inden for kvalitativ metode i sektion 3. Her reflekterer vi over, om vi skulle have brugt kulturelle probes, hvorfor vi valgte semistrukturerede interviews, og hvordan vi konstruerede interviewguiden for diabetesdeltagerne. Dernæst går vi i sektion 4 i dybden med, hvordan vi rekrutterede respondenter, og hvordan vi kunne have gjort dette endnu bedre. Afslutningsvist diskuterer og reflekterer vi i sektion 5 over vores valg af analysemetode, nemlig åben kodning, i modsætning til en tilgang med præ-definerede koder.

2. Diskussion af metodevalg

Her vil vi diskutere og reflektere over vores rationale bag anvendelsen af kvalitativ metode. Vi vil diskutere, om en kvantitativ tilgang ville have været mere passende. Vi vil også diskutere vores valg af interviews i forhold til en anden kvalitativ tilgang: kulturelle probes.

2.1 Kvalitativ vs. kvantitativ

Baggrunden for at vælge den kvalitative metodiske tilgang har i høj grad udspring i karakteren af vores problemområde. Kvalitative metoder er særligt velegnede til studier, som forsøger at opnå viden og indsigt i forhold, som er svære at måle og veje (Kvale og Brinkmann, 2008). Netop begrebet identitet, som er dette studies fokus, er et så komplekst begreb, at kvantitative studier kan være udfordrede i at indfange kompleksiteten af de mekanismer, der er på spil.

Der findes dog flere kvantitative metoder, som potentielt kunne bidrage med viden og indsigt til studier, der søger at udvikle teknologi, der både understøtter diabetikeres livsstilsvalg og identitetsarbejde. Vi kunne for eksempel have benyttet spørgeskemaer og statistisk analyse til at undersøge, hvor repræsentativt et problem identitet er for diabetikere (Toepoel, 2017). Surveys kunne også kombineres med dette kvalitative studies resultater i et forsøg på at kvantificere, hvor udbredte de forskellige sociale problemstillinger, som blev identificeret i den kvalitative del, er blandt diabetikere.

Det er dog værd at fremhæve, at kvantitative spørgeskemaundersøgelser ofte kræver et vist forhåndskendskab til emnefeltet, der undersøges (Toepoel, 2017). Kvantitative metoder har især sin styrke i deduktive studier, hvor forskeren er i stand til at opstille præcise forventninger til problemstillingen. De klare forventninger er nødvendige for at kunne stille præcise spørgsmål med klare svarkategorier, som respondenterne kan genkende og relatere til. Respondentens mulighed for at udtrykke sig i kvantitative spørgeskemaundersøgelser vil være begrænset til de spørgsmål og svarkategorier, som forskeren har stillet, og derfor er spørgeskemaundersøgelser i mindre grad egnet til en mere eksplorativ tilgang til at udforske emnefeltet omkring problemstillingen. Da litteraturen om vores specifikke emnefelt og problemstilling var begrænset, mener vi, at vores eksplorative og dybdegående kvalitative tilgang var mere gunstig for at belyse vores problemstilling. Gennem kvalitative interviews har vi dermed bidraget til at opbygge viden om emnefeltet, som kan danne grundlag for opstilling af mere klare forventninger, der kan testes i fremtidig forskning.

3. Interviews

Der findes forskellige metoder inden for den kvalitative tradition. Vi valgte at bruge kvalitative interviews for at undersøge diabetikeres håndtering af deres sygdom i hverdagen, og hvordan de kan bruge teknologi til at understøtte dette arbejde. Det gjorde vi, fordi vi ønskede at kunne respondere og interagere med interviewpersonerne og følge deres individuelle beretninger og opfattelser, hvilket er nogle af styrkerne med interviews (Kvale og Brinkmann, 2008). Vi har desuden forskellige interviewformer, herunder både individuelle interviews og fokusgruppeinterviews, for at afdække vores problemstilling fra flest mulige perspektiver samt for at overkomme metodiske begrænsninger og fejlkilder. Som Bente Halkier argumenterer: *"Den sociale kontrol i fokusgrupper kan hindre, at alle forskelle i erfaringer og perspektiver kommer frem. Imidlertid er der jo heller ingen garanti for, at forskeren i et individuelt interview får interviewpersonens socialt genkendelige forståelser og praksisser frem"* (Halkier, 2016, 14). De forskellige interviewformer gav os mulighed for at forstå interviewpersonernes holdninger, meninger og deres virkelighed gennem deres personlige beretninger og oplevelser. Netop dette var essentielt i forhold til senere at kunne analysere hvilke gennemgående temaer, der karakteriserede deres håndtering af diabetes i sociale situationer, og hvordan disse var påvirket af interviewpersonernes identitet og forståelse af sociale situationer.

Netop undersøgelsen af det sensitive emne identitet, udfordrer det betydningsfulde tillidsforhold mellem interviewer og deltager. I relationen mellem interviewer og interviewperson ligger nemlig kilden til flere faldgruber ved interviewmetoden. Intervieweren kan eksempel have forudindtagelser omkring respondenten og resultatet, og kan dermed skabe skjulte bias (Kvale og Brinkmann, 2008). Det er i forlængelse heraf en risiko, at spørgerammen i for høj grad er begrænset af interviewerens egen forståelsesramme. Her har fokusgrupper, som vi også har anvendt med interviews, potentiale til at bringe disse temaer frem i lyset via gruppeinteraktion. David Morten berører denne problemstilling i konteksten af fokusgrupper: *"[F]okusgrupper [er] en forskningsmetode, hvor data produceres via gruppeinteraktion omkring et emne, som forskeren har bestemt"* (Morgan i Halkier, 2016, 10).

Vi har dog haft fokus på at undgå faldgruber ved vores kvalitative metoder ved at bruge åbne spørgsmål og generelt være opmærksomme på ikke at bruge ledende spørgsmål i vores interviewguide. For at modvirke bias, har vi også sørget for at processen for dataindsamlingen er så transparent som muligt, således at læseren har mulighed for at vurdere kvaliteten af data og vores fortolkninger. Netop derfor er alle vores interviews også blevet transskriberet, og både spørgeramme og transskriberinger er til rådighed i appendiks.

3.1 Muligheder med kulturelle probes

Ens for vores interviews, på tværs af typer, kan siges, at de er umiddelbare indtryk inden for en meget snæver tidsmæssig kontekst, idet vi blot har haft en enkeltstående interaktion på omkring en time med interviewpersonerne. Alternativt, kunne vi have anvendt kulturelle probes som en anden tilgang til at få en rig forståelse af interviewpersonerne (Benyon, 2014). En kulturel probe kunne have været en genstand, såsom en dagbog eller et kamera, som kunne være et hjælpemiddel til at huske, notere eller på anden vis registrere indtryk, hændelser og tanker (Brown et al., 2014). Sådanne kulturelle probes kunne især være nyttige i dybdegående studier af livet med diabetes, hvis man eksempelvis var interesseret i at undersøge, hvordan diabetikere anvender forskellige teknologiske løsninger i praksis over tid. Herudover kunne de i vores studies kontekst ydermere have givet os et rigt indblik i vores deltageres dagligdag og deres håndtering af diabetes i sociale situationer. Her kunne respondenterne selv konstruere det, de ønskede at fortælle, uden at være påvirkede af vores tilstedeværelse og interview-situation, samt i mindre grad være begrænsede af deres egen manglende hukommelse. I forhold til vores eksplorative tilgang kunne kulturelle probes også være særligt interessante, da deltagerne i højere grad ville få lov til at fortælle, hvad der berører dem i sociale situationer, hvilket vores interviewguide muligvis har hindret.

Kulturelle probes kræver dog en betydeligt større indsats af deltagerne, da det er langt mere forpligtende og tidskrævende at skulle anvende kulturelle probes i en længere periode. At rekruttere til interviews og fokusgrupper uden at kunne tilbyde betaling var i forvejen en større udfordring, hvorfor vi anså det for urealistisk at rekruttere til denne mere krævende dataindsamlingsmetode.

Fremtidig forskning kunne anvende kulturelle probes til at undersøge vores resultater og teknologiske løsningsforslag fra design workshoppen nærmere. Specifikke løsningsforslag ville dog først skulle udvikles, eventuelt som prototype, og er derfor ikke inden for rammen for vores speciale.

3.2 Semi-struktureret interview

Vores mere specifikke valg af interviewtype faldt desuden på semi-strukturerede interviews, da de har den fordel, at de er fleksible, men dog stadig sammenlignelige på tværs af interviewpersonerne (Kvale og Brinkmann, 2008). Fleksibiliteten består i, at intervieweren kan respondere og tilpasse interviewet til det konkrete forløb, løbende uddybe eller stille opklarende spørgsmål. Derudover har intervieweren mulighed for at aflæse de nonverbale signaler som interviewpersonen udsender og tilpasse sin fremgangsmåde derefter. Omvendt, har interviewpersonen også større frihed til at svare på spørgsmålene end i mere strukturerede, typisk kvantitative, undersøgelsesmetoder. Dette betyder også at interviewpersonen kan søge afklaring hos intervieweren og sikre at spørgsmålene er korrekt forstået, før de svarer.

Den semistrukturerede form har i vores studie desuden givet os muligheden for at opnå en bredere forståelse af livet som diabetiker og de mange nuancer i deres hverdag. Det har den gjort ved at have en bredere og mere fleksibel spørgeramme som inviterer til at bringe personlige perspektiver og synspunkter i spil (Kvale og Brinkmann, 2008). Vi har kunnet tilpasse os de diabetikere som var til rådighed, hvad enten de havde type 1 eller 2 diabetes, forskellige alder, erfaring etc. Det har vi for eksempel kunnet gøre ved at tilpasse vores spørgsmål efter diabetikerens erfaring, livsstil og andre forhold, hvor nogle deltagere kunne tale helt detaljeret om deres rigide håndtering af sygdommen mens andre forklarede deres mere laissez-faire håndtering.

Vi oplevede også at enkelte interviewpersoner ikke forstod vores formuleringer i spørgerammen, og her kunne vi afvige og tilbyde yderligere uddybning og omformulering for at sikre forståelsen. Således kunne vi som interviewere assistere og guide undervejs i forløbet, og derigennem sikre at interviewpersonerne rent faktisk svarede ud fra en korrekt forståelse af spørgerammen. Dette havde været besværliggjort, hvis ikke vi havde valgt den semi-strukturerede interviewform. Eftersom der dog stadig var taget udgangspunkt i samme spørgeramme til alle interviews, så har vi efterfølgende haft et solidt grundlag at sammenligne interviewpersonernes svar på og udlede temaer og resultater i vores analyse.

Selvom den semi-strukturerede interviewform har mange fordele, så har vi skullet være særligt opmærksomme på, at den stiller høje krav til interviewerens kompetencer (Kvale og Brinkmann, 2008). Intervieweren skal kunne opfatte både verbale og non-verbale signaler hos interviewpersonerne og formå at tilpasse spørgsmål og rækkefølgen af disse, hvis det er nødvendigt (Kvale og Brinkmann, 2008). Det er ydermere vigtigt at have en fornemmelse af hvornår og hvordan man kan tillade sig at stille opfølgende og uddybende spørgsmål, især da diabetes stadig for mange er et meget privat emne. Derfor forsøgte vi også at understrege undervejs i interviewet, at vi ikke havde til hensigt at kontrollere dem eller dømme hvorvidt de var 'gode' eller 'dårlige' diabetikere for at skabe åbenhed. Netop denne føling og mulighed for at aflæse gestik, ansigtsudtryk og andre non-verbale signaler var ikke mulig i de telefoninterviews (N=3), vi også har afholdt. Dette stiller igen højere krav til klar og tydelig kommunikation mellem interviewer og interviewperson, idet begge parter mangler de mange uformelle signaler der uundgåeligt indgår i et fysisk møde.

3.4 Pilot-interview

Vi forsøgte at sikre de bedst mulige forhold for en høj interview kvalitet, inden vi startede med at indsamle data, ved at lave et pilot-interview. Det var vigtigt for os, at spørgerammen hverken var for kort, for lang eller ramte en balance i forhold til detaljegrad (Kvale og Brinkmann, 2008). Kvale og Brinkmann understreger nemlig, at *"[m]oderne forskningsinterview derimod er ofte alt for lange og fyldt med tom snak."* (ibid., 184). Derfor har vi med vores semistrukturerede interviewguide forsøgt at skabe righoldige interviews ved at etablere et indledende pilot-interview og dernæst arbejde iterativ med hele tiden at forfine spørgerammen, for at opnå størst mulig værdi af besvarelserne fra interviewpersonerne.

For at sikre at vores interviewguide havde det ønskede format og kvalitet, testede vi først spørgsmålene på hinanden. Dette var for at sikre at rækkefølgen var logisk og naturligt opbygget, og om spørgsmålene var tydelige og forståelige (ibid.). Dernæst etablerede vi et pilot-interview med en diabetiker. Interviewet varede ca 15 minutter og var med til at give et yderligere indblik i, hvordan personer med denne sygdom forholder sig til spørgsmål til emnet. Pilot-interviewet gav os også indblik i hvilke områder, vi godt kunne spørge nærmere ind til, og hvilke områder der var svære for interviewpersonen at svare på.

Vi opdagede blandt andet i pilot-interviewet, at interviewpersonen kunne føle sig "ramt" af den måde vi stillede spørgsmålene. Dette gjorde, at vi blev meget opmærksomme på at fjerne alle tænkelige fordomme og forudindtagetheder i spørgsmålene, for derved at gøre dem mere objektive. For eksempel ændrede vi følgende spørgsmål fra: "Synes du selv at du er en god diabetiker?" Til at være: "Hvad er din forståelse af, hvad en god livsstil for en diabetiker er?" Dette gjorde at vores næste interviewpersoner kunne forholde sig mere distanceret til spørgsmålet uden at føle sig truffet eller irettesat af os som interviewere. Derudover tilpassede vi løbende interviewguiden ved enten at gøre spørgsmålene mere åbne, eller ved at spørge mere ind til emner som vi fandt interessante ved foregående interviews. Selvom pilot-interviewet krævede ekstra tid og ressourcer i den tidspressede dataindsamling, udgjorde det et stort bidrag til designet af vores interviewguide.

3.5 Reflektioner over interviewguiden

Vores indsamlede data var baseret på en interviewguide (Kvale og Brinkmann, 2008), som var anvendt under alle interviews med diabetikere. Den havde en stor indvirkning på områder, vi kunne belyse og omvendt. Den var designet med plads til sonderende spørgsmål, som fik deltagerne til at uddybe og dele ud af deres egne erfaringer og synspunkter på spørgsmålene. Dette var også med til at sikre relevans, så der ikke var spørgsmål specifikt rettet til enkelte interviewpersoner, men alle havde mulighed for at give deres indtryk, holdninger og meninger til kende. Vi benyttede også spørgsmål, som respondenterne skulle besvare med egen vurdering på en skala, som viste sig at være en god mulighed for interviewpersonerne til at vurdere og kvantificere dem selv på en struktureret facon. Mange placerede umiddelbart sig selv højt på skalaen, ved spørgsmål omkring hvor gode deres kost eller motionsaktiviteter var, på trods af at have indikeret det modsatte tidligere. Vores opfattelse som interviewere var, at flere ønskede at give sig selv en høj karakter, når vi nævnte en skala, men efterfølgende uddybede de med forklaringer for, hvorfor de ofte ikke levede op til den karakter, de gav dem selv. For eksempel, nævner interviewperson P13: "(...)det [at motionere] kommer også an på regnvejret, jo." eller interviewperson P11: "Det [at spise sundt] kommer også an på ens humør". Dette gav os et indblik i, hvad de individuelt anser for en god diabetes livsstil, samt hvordan de selv mente, at de levede op til dette, hvilket er særligt interessant i konteksten af sociale situationer.

Retrospektivt, kunne vi have uddybet kategorien: ‘erfaring med teknologi’ i interviewguiden, da vi godt kunne have draget nytte af en dybere forståelse af deres brug og forståelse at teknologi, samt lagt mere op til idégenerering af potentielle teknologiske løsninger. Selvom idégenerering ikke var interviewets formål, var det en dør, vi kunne have holdt mere åben ved at lade teknologi indgå mere i vores interviews, eksempelvis omkring deres dagligdagsbrug af mailsystemer eller sociale medier. Dette valgte vi efterfølgende i stedet at fokusere på gennem en design-workshop, hvor vi også bedre kunne facilitere et format, der stimulerede idégenerering. Vores forståelse af deres teknologiske brug kunne dog have været bedre, da vores spørgsmål kun omhandlede brug af diabetes-relateret teknologi. Hvordan interviewpersonerne brugte anden teknologi i deres hverdag, kunne have givet os en dybere indsigt i deres evner, den kontekst de bruger dem i og hvilke teknologiske kvaliteter de søger.

4. Rekruttering af deltagere

Rekruttering af deltagere var et større usynligt stykke arbejde i vores artikel. I det følgende beskriver vi processen og vores valg samt diskuterer vores rekrutteringsstrategi.

4.1 Kriterier for rekruttering

Ved rekrutteringen af interview- og fokusgruppedeltagere (se tabel 1 for overblik over deltagere) til vores studie, har vi i starten rekrutteret efter convenience, men senere gået over til selektiv rekruttering. Vi gik over til selektiv rekruttering efter vi havde fem interviewpersoner og to fokusgrupper, som alle på nær én var karakteriserede af høje aldre. For at samle en mere repræsentativ deltagergruppe i forhold til alder tilføjede vi en maksimal alder på 40 år som et kriterie. Vi har desuden ikke haft noget mål for antal deltagere, da vores undersøgte område er

Diabetes Type	Alder (år)	Beskæftigelse	Rekrutteringskanal	By	Interviewlængde (min)	Diabeteserfaring(år)	Interviewform
2	63	Pensionist	Diabetesforeningen	Ebeltoft	39	6	Ansigt til ansigt
2	63	Pensionist	Diabetesforeningen	Blåvand	42	12	Ansigt til ansigt
1	24	Sygeplejerske	Personligt netværk	Aalborg	54	6	Ansigt til ansigt
2	57	Efterlønner	Diabetesforeningen	Hedensted	32	4	Telefon
2	53	Anlægsgartner og altmuligmand	Facebookgruppe	Horsens	38	1	Telefon
2	24	Arbejdsløs	Personligt netværk	Kjellerup	20	0,5	Telefon
1	35	Konsulent	Diabetesforeningen	Gedved	70	8	Ansigt til ansigt
2	63	Pensionist	Diabetesforeningen	Randers	57	2	Fokusgruppe
1,5	65	Pensionist	Diabetesforeningen	Randers	57	3	Fokusgruppe
1,5	72	Pensionist	Diabetesforeningen	Hadsten	57	20	Fokusgruppe
1	54	Sosu-hjælper	Diabetesforeningen	Auning	39	33	Fokusgruppe
2	59	Fabriksarbejder	Diabetesforeningen	Randers	39	9	Fokusgruppe
2	68	Kontorarbejde	Diabetesforeningen	Spentrup	39	5	Fokusgruppe
2	56	Førtidspensionist	Diabetesforeningen	Randers	39	12	Fokusgruppe

Tabel 1: Overblik over vores interview og fokusgruppedeltagere med diabetes.

komplekst og vores deltagere har en høj varians, forventede vi ikke at nå et mætningspunkt. Vi søgte derimod så mange deltager som muligt for at få så mange forskellige synspunkter og opfattelser som muligt.

Med diabetikere har vi i alt gennemført syv individuelle interviews og to fokusgrupper med syv deltagere, og vi har fået belyst vores forskningsspørgsmål omkring identitetskonstruktion indvirkning på diabetikere i sociale situationer fra mange forskellige, spændende perspektiver. Vi kunne dog godt have ønsket større varians i deltagernes alder (diagram 1). Generelt set, har det været lettere for os at rekruttere ældre deltagere end unge, og da vi netop er interesserede i det teknologiske perspektiv, kan man have en formodning om at unge vil give anderledes input end ældre interviewpersoner. Dette har vi dog ikke fundet evidens for i vores studie. Vi har samtidig aktivt søgt at kompensere for den aldersmæssige fordeling, ved at justere rekrutteringen undervejs i studiet. Dette gjorde vi eksempelvis, da vi i forløbet opdagede en overvægt af ældre deltagere, hvorefter vi aktivt søgte at henvende os til yngre potentielle deltagere. Vi har tillige haft en overvægt af interviewpersoner med kortere diabetes sygdomsforløb (diagram 2).

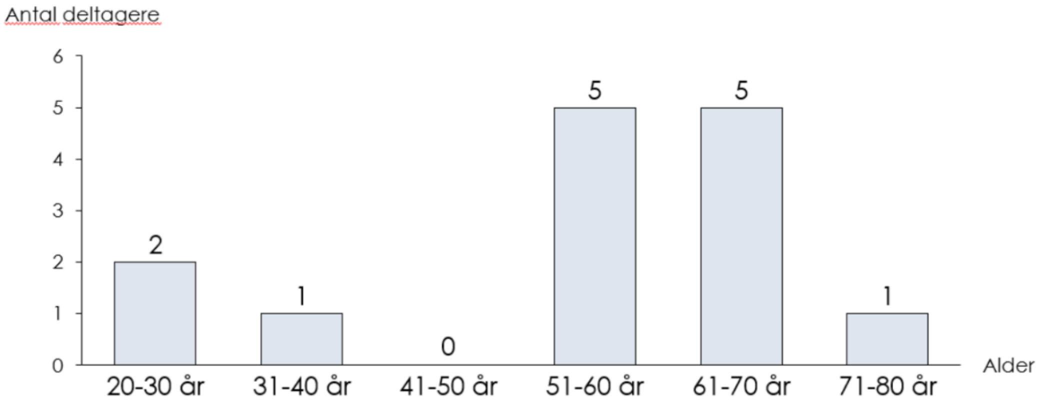

Diagram 1: Aldersfordeling af diabetesdeltagere fra interviews og fokusgrupper

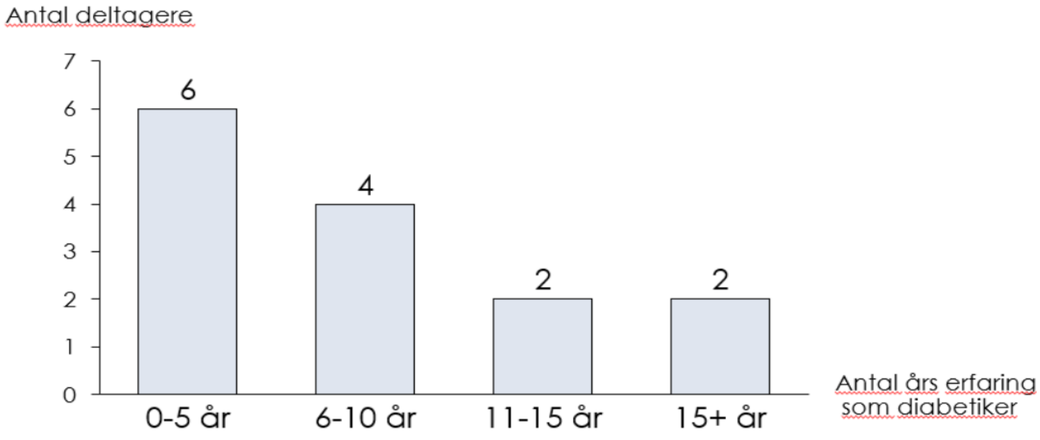

Diagram 2: Diagram 1: Erfaringsfordeling af diabetesdeltagere fra interviews og fokusgrupper

4.2 Kilder til rekruttering

Vores primære kilde til rekruttering af interviewpersoner har været Diabetesforeningen (N=4) og i mindre grad Facebook grupper (N=1) samt personligt netværk (N=2). Herudover rekrutterede vi også alle syv fokusgruppedeltagere fra Diabetesforeningen, som hjalp rekrutteringen på vej ved at understøtte troværdigheden af vores projekt over for potentielle deltagere. Vi har gennem deres offentligt tilgængelige database kontaktet en række lokalforeninger i Region Midtjylland for at komme i kontakt med diabetikere. Vi prioriterede Region Midtjylland, da vi begge er bosiddende i Aarhus. I Region Midtjylland eksisterer 16 lokalforeninger af Diabetesforeningen, som vi har kontaktet allesammen. På landsplan eksisterer 93 lokalforeninger, så procentuelt har vi haft kontakt og rekrutteret interviewpersoner fra 18% af Diabetesforeningens lokalafdelinger (Diabetesforeningen, 2019). Idet vi har rekrutteret fra Diabetesforeningen medlemsgruppe, har alle personer vi interviewede haft en vis grad af accept omkring deres sygdom. På trods af dette var der dog stadig stor forskel på, hvordan de håndterede og forstod deres sygdom. Der er dog også potentielt en stor målgruppe af diabetikere som ikke er medlemmer, vi ikke når ud til gennem denne rekrutteringskanal, da ikke alle accepterer deres sygdom, hvilket synes at være en nødvendig betingelse for at melde sig ind i Diabetesforeningen. Et studie med diabetikere, som ikke havde accepteret deres sygdom, kunne have bidraget med yderligere aspekter, som muligvis kunne have gavnet den empiriske undersøgelse med nye nuancer og temaer, som vi ikke fik belyst gennem de personer, som vi interviewede. For at få en mere heterogen gruppe, kunne vi have benyttet andre rekrutteringsstrategier.

4.3 Andre mulige rekrutteringsstrategier

En måde at udvide antallet af interviewpersoner på til fremtidige studier, kunne være gennem mere etablerede partnerskaber med organisationer såsom Diabetesforening, hvor de kunne spille en mere aktiv rolle og fremgå som afsenderen. En anden interessant partner kunne være hospitaler, hvor vi muligvis kunne få kontakt med deltagere, der var mindre afklarede omkring deres sygdom, og som derfor kunne stå i kontrast til deltagere fra Diabetesforeningen. Hvis afsenderen havde været fra eksempelvis Aalborg Hospital kunne interessen for at have deltaget som diabetiker have været anderledes. Dels da patienter, der deltagere i eksperimenter på i hospitalsregi kan blive tilbudt ekstra undersøgelser foretaget af eksperter, og dels fordi patienter kan føle sig mere trygge ved at videregive personlige og intime oplysninger til officielle instanser som hospitalsvæsenet, hvilket harmonerer med vores sensitive og personlige interesseområdet: helbred og identitet. Vi har heller ikke kunnet tilbyde interviewpersonerne at blive forsøgspersoner til den teknologi, som er specialets endelige mål. Derudover har vi ikke haft mulighed for at give en økonomisk dispensation til deltagerne. Dette kunne muligvis have skabt større interesse for at deltage i undersøgelsen, da deltagere ofte modtager en sådan kompensation i forbindelse med forsøg og undersøgelser.

5. Analysemetode: Gjorde vi det rigtige?

Vi valgte en induktiv tilgang til analysen, som blev udøvet via åben kodning og metoder funderet i grounded theory til vores interviewanalyse. I det følgende reflekterer vi over og diskuterer dette valg i forhold til alternativet i form af en deduktiv tilgang med lukket kodning.

5.1 Valg af åben kodning

Vi valgte en induktiv tilgang til analysen ved at kode åbent, understøttet af at benytte analyseværktøjer fra grounded theory. Dette gjorde vi for at styrke vores eksplorative tilgang, for at belyse vores data så godt som muligt og for at minimere vores forudindtagelser.

Vi brugte analyseværktøjer fra grounded theory (Corbin og Strauss, 2008) til at finde viden i vores data. Vi brugte først og fremmest et gængs analyseværktøj i grounded theory; at stille spørgsmål. Vi var opmærksomme på at stille spørgsmålstegn og være nysgerrige under kodning. Selvom dette analyseværktøj er tidskrævende og kan forekomme trivielt, gav det os en grundig forståelse af vores data, samt af relationer i det. Ved at stille spørgsmålstegn ved alt og prøve at finde svar, reducerede vi også vores forudindtagetheder ved at tvinge os selv til at anskue vores data på mange forskellige måder.

Udover at udspørge vores data, søgte vi også løbende at lave sammenligninger, hvilket er det andet gængse analyseværktøj i grounded theory (ibid.). Her differentieres mellem teoretiske og konstante sammenligninger. Vi søgte løbende konstante sammenligninger ved at sammenligne hændelser, meninger, normer med tidligere fund. Eksempelvis ved at sammenholde en hændelse, hvor en diabetiker ikke følte sig normal i forhold til én, hvor personen gjorde. Herudover foretog vi teoretiske sammenligninger, når der ikke var nogen foregående fund at sammenligne med. Disse sammenligninger bliver da løbende mere komplekse, men bidrager samtidig med et mere fyldigt indblik i, hvad vores data har at tilbyde. Selvom vi normalt løbende sammenligner, når vi søger at forstå noget ukendt, så er den mentale indstilling om at være opmærksom på at sammenligne konstant eller teoretisk en hjælp til at få en nuanceret forståelse af data. Det bidrager yderligere til, at der ikke overses interessante forskelle og ligheder, som vores forudtaghed kunne have berøvet os. Herudover hjalp det os med at arbejde på et mere konceptuelt niveau, da sammenligningerne resulterede i koder. Disse koder hjalp os til at finde sammenhænge og mønstre i vores data.

5.2 Fravalg af lukket kodning?

Selvom åben kodning og analyseværktøjerne fra grounded theory hjalp os med at få en dybdegående forståelse af vores data, så kunne det muligvis også gøres langt mere effektivt via støtte fra lukket kodning.

I dirigeret indholdsanalyse (originalt: directed content analysis) starter man med en række præ-definerede koder, som man koder data efter (Hsieh og Shannon, 2005). Man lader dog samtidigt nye koder springe frem om nødvendigt. Ved brug af denne tilgang kunne vi have sparet en del tid, men også have undersøgt oprindelige forskningsspørgsmål mere målrettet.

Selvom der findes argumenter for dirigeret indholdsanalyse, mener vi, at den åbne kodning understøttede vores eksplorative tilgang i højere grad. På trods af at der eksisterede noget forskning på området i forvejen, så er det fortsat et område, hvor vi mener, man bør arbejde eksplorativt. Særligt da ingen endnu, på baggrund af vores litteraturgennemgang af HCI, har undersøgt, hvilken betydning type 2 diabetikeres identitetsarbejde har for, hvordan teknologi kan hjælpe dem til at opretholde en sund livsstil. Emnet indeholder desuden en enorm kompleksitet, hvilket også kommer til udtryk i litteraturen, som belyser emnet fra forskellige metodemæssige og teoretiske perspektiver. Den dirigerede indholdsanalyse med dens brug af lukkede vejledende koder, vil ikke kunne begå sig i denne usikkerhed og kompleksitet, da den kræver klare teorier og forventninger, som testes på data. Da denne baggrundsviden ikke eksisterede i tilstrækkelig grad, føler vi, at den åbne kodning var mere passende, da den tilpasser sig data uafhængigt af forhåndskendskab til området.

Herudover ville brug af lukkede koder også øge risikoen for, at vi ikke var åbne nok overfor mulige koder i vores data, men i stedet vil være for styret af at lede efter vores forindtagheder. Særligt set i lyset af at vores koder og temaer har været noget anderledes, end hvad vi regnede med fra studiet begyndelse, mener vi, at den åbne tilgang var både et rigtigt og et vigtigt valg. Vi søgte nemlig at forstå diabetikeres følelse af identitet og dens attributter, heriblandt følelser af kompetencer og konsistensitet, men endte med en rig forståelse af, hvordan diabetikeres identitet påvirker deres adfærd i sociale situationer.

6. Konklusion

Vi mener, at vores valg og anvendelse af kvalitative interviews var et frugtbart valg til besvarelse af vores problemstilling, og at de har bidraget til en rig forståelse af identitetskonstruktion hos diabetikere i sociale situationer. Vi valgte overordnet set kvalitativ metode, da vi ikke følte, at vi kunne måle og veje identitet og den komplekse konstruktions indvirkning på diabetikere. Med kvalitativ metode kunne vi få en bedre forståelse for problemstillingen igennem diabetikernes fortællinger og indblik i deres individuelle virkeligheder. Herudover valgte vi at benytte interviews, fremfor en anden potentiel kvalitativ metode: kulturelle probes. Disse kulturelle probes kunne om muligt have bidraget med et alternativt indblik i diabetikernes virkelighed og dagligdag, men de blev fravalgt, da de var for ressourcekrævende i forhold til vores speciales tidsmæssige og økonomiske begrænsninger. I forbindelse med vores rekruttering til interviews, kunne vi med fordel have rekrutteret en mere divers respondentgruppe af diabetikere set i forhold til alder og accept af sygdommen, eventuelt via et samarbejde med hospitalsvæsenet. På trods af at vores interviewdeltagere er delvist homogene, set i forhold til alder og sygdomsaccept, så havde vores deltagere gennem Diabetesforeningen forskellige virkeligheder, som alligevel skabte spændende nuancer i vores data. Herudover gav Diabetesforeningen os også et højt antal deltagere, som det ikke var sandsynligt, at vi ville kunne have nået via for eksempel Facebook grupper eller andre netværk. Vi er desuden tilfredse med vores valg af semi-strukturerede interviews, da denne tilgang gav os mulighed for at tilpasse interviewene til den individuelle deltager, men samtidig give os nok struktur til at kunne sammenligne på tværs af deltagere. Vi mener også at valget af at kode åbent og brugen af analyseværktøjer fra grounded theory hjalp os med at udforske vores data og få mest muligt indsigt ud af data. Dette bidrog også til, at vi endte med at gå i dybden med et andet forskningsspørgsmål end oprindeligt tiltænkt, fordi dette spørgsmål viste sig at være det vigtigste for respondenterne. Dette understreger grounded theory's evne til at overkomme analytikerens forudindtagheder og bias og fokusere opmærksomheden i forskningen mod de vigtigste problemstillinger inden for de emneområder, vi undersøger.

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