

DIETERO

A DIGITAL SERVICE THAT CONNECTS PREGNANT WOMEN WHO ASPIRE TO ADOPT A HEALTHIER LIFESTYLE

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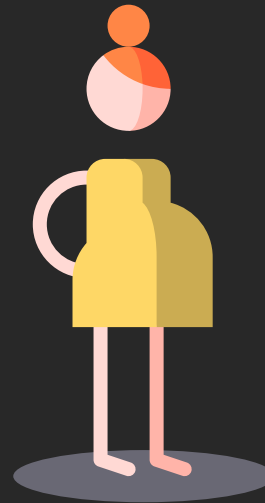
INTRODUCTION

ALL PARTICIPANTS THAT CONTRIBUTED TO THE USER RESEARCH HAVE CHOSEN TO REMAIN ANONYMOUS AND WILL THEREFORE BE GIVEN ALIASES.

The goal of this project is to design a service to help pregnant women adopt a healthier lifestyle. A mother's health during her pregnancy plays a key role in the well-being of the mother and the newborn, and further influences health during childhood and adulthood (*9 Months That Made You*, 2016; B, Karlsson, personal communication, April 10, 2018; Svenska Barnmorskeförbundet, 2018).

A bodily and lifestyle change is inevitable for expecting mothers (H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).

How might **correct information** at the **correct time** facilitate this change?



Easy and understandable information is key for positive change (H. Hansson, personal communication, April 23, 2018; B, Karlsson, personal communication, April 10, 2018).

Motivational talks, interviewing and information encourages change. **Sharing** troubles as well as successes with openness in change creates acceptance of the change in question (B, Karlsson, personal communication, April 10, 2018).

PROBLEM AREA

- How do women get information about what changes they need to make in their lifestyles?
- What are the factors motivating lifestyle changes?
- What are the challenges?
- **How could sustainable lifestyle change be promoted?**

APPROACHES AND METHODS

To approach the problem area and to acquire quantitative run-of-the-mill data, online surveys has been conducted. These were sent out through mother groups on Facebook. 75 women who all have been or are pregnant answered the survey in full. This data enabled an understanding of what interview questions to be used and what centerpoints they should revolve around. This worked as an **exploratory approach**.

Additionally, to further understand the needs and the current situation of a pregnant woman, the qualitative research has been conducted on different levels of the pregnancy. Semi-structured interviews has been held with a **vast spectrum** in mind. The interviewees has varied from during and post- pregnancy as well as midwives, coordinating midwives, midwife educators and future dads. In total, five interviews provided the research with a broad spectrum of information revolving pregnancy.



BACKGROUND RESEARCH

Background research was a central part early in the research process. To cover a broad field several types of media was explored, such as documentaries, academic literature, thesis works, yearly reports and podcasts. The background research was gathered to get a wider understanding of all aspects related to a pregnancy.

Three noteworthy insights were identified:

Stress and mental health can have an impact of the well-being of the foetus (Svenska Barnmorskeförbundet, 2018; *9 Months That Made You*, 2016).

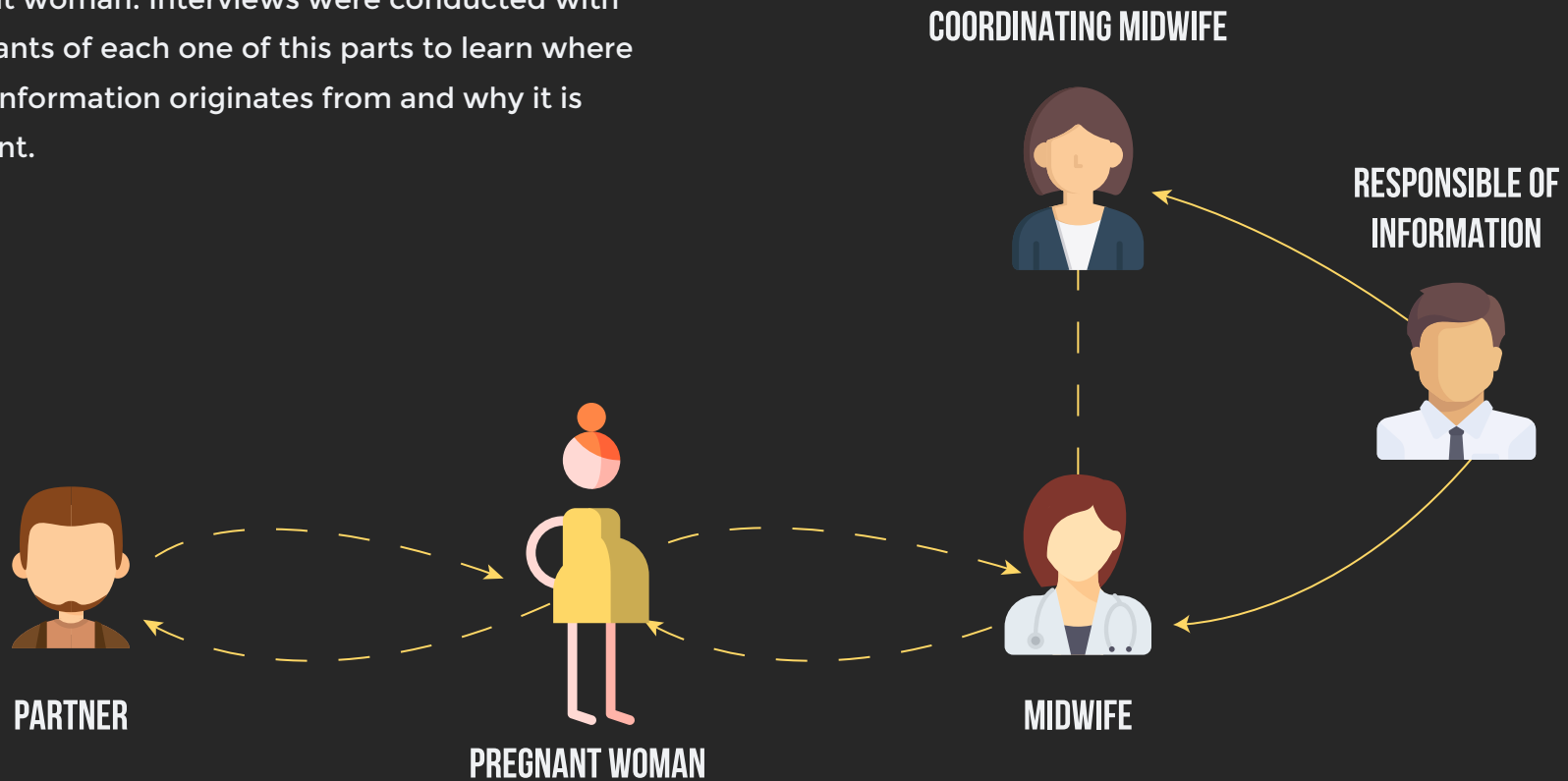
Well-timed understandable information is crucial to ensure a calm state of mind for pregnant women (Svenska Barnmorskeförbundet, 2018; *9 Months That Made You*, 2016; H. Hansson, personal communication, April 23, 2018; B. Karlsson, personal communication, April 10, 2018).

Motivational interviewing is a current tool, used for reflection on habits and lifestyle without a criticising voice from the midwife.

SPECTRUM OF PREGNANCY

Model 1.

This is the current flow of information that surrounds a pregnant woman. Interviews were conducted with participants of each one of these parts to learn where certain information originates from and why it is important.



USER RESEARCH

An interview with a **midwife educator**, B Karlsson, was conducted to gain the perspective of the people who educate the midwives. The midwife educator talked about the basic lifestyle changes that expecting mother are recommended to undertake. This was done to identify potential problem areas on which could be expanded. The most valuable insight gained was the technique of Motivational Interviewing (MI) because this is the current tool to encourage positive lifestyle change. MI is currently used by all midwives in Region Skåne on the first meeting with a pregnant woman. In motivational interviewing the interviewer encourages and promotes change, so that the expecting mother would want to change her lifestyle. This as opposed to pushing the expecting mother to change, which could result in a reluctance to do so (B, Karlsson, personal communication, April 10, 2018).

— A **future father**, F Vikingsson, was interviewed. As a father-to-be he shared his experiences of the pregnancy so far. He described the most stressful elements of the pregnancy to be the earlier stages, the periods of uncertainty and unknowing whilst waiting for test results. Once the pregnancy was confirmed healthy, after the first trimester, the couple was calmed and life could go on.

He described that their midwife played a big part in their life and was a reason to their calmness. His partners experience and the fact that she works at a hospital as a nurse meant that the couple had easy access to a sea of knowledge. The couple can through simple means get answers to most of their questions from reliable sources.

The mother-to-be did not at the time of the interview take part in a mother group.

Perhaps this was deemed unnecessary since she, already at work, is surrounded by mothers with several pregnancies of experiences and that she had not encountered any difficulties or discomfort in her pregnancy so far (F. Vikingsson, personal communication, April 19).

— An interview was conducted with a **coordinating midwife**, E Hansson. The purpose of this interview was to gain knowledge from a very experienced midwife who has a broader view of the problem area.

The major insights gained in the interview is that a mother group is not provided for the mothers during their pregnancy. This is something the mothers have to create, coordinate and attend by their own effort, or use a private organization.

She went on to explain that meeting other pregnant women whilst pregnant is of paramount importance. Networking, sharing experiences and the assurance that women

are not alone in being pregnant are factors that could support a sound mental health. Additionally, she stated that there is a value in meeting other women in real life, because of people generally being more open in physical meetings than on online forums.

Interestingly, she stated that mothers feeling a moderate level of anxiety is normal and even healthy, as this points to a bond being tied between the mother and child (H. Hansson, personal communication, April 23, 2018).

— An interview was conducted with a **senior mother that was pregnant 30 years ago**, S Strandberg. This interview was conducted to get insights on how the pregnancy was experienced in hindsight.

"We didn't know how to tell our parents and grandparents, that was one of the worst things about the pregnancy"

- S. Strandberg (personal communication, May 1, 2018).

The interviewee expressed that there was a fear of telling the parents about her young pregnancy. She also added that she felt a lot of anxiety about how her life was going to change. Economic as well as social changes and strains is what gave her much anxiety. Her partner added *"But how's it going to turn out? We had no idea!"* - S. Strandberg (personal communication, May 1, 2018).

— An interview with an **expecting mother**, K Kindberg, was conducted as part of the user research process. She showed signs of needing to share and reach out to other mothers about her experience being pregnant this far. Despite this she had not attended any sort of mother group or similar

forums of sharing.

The one person she talks about her pregnancy with, is her midwife. However, she does not get along well with her as she feels her midwife does not have anything of value to say. According to the expecting mother, because her pregnancy is going very well the midwife have a hard time proving her worth. She did express emotions like stress and angst concerning her pregnancy that is going suspiciously well.

"I'm just sitting here waiting to get physical pains and it is nerve wrecking!" - K. Kindberg (personal communication, April 22, 2018).

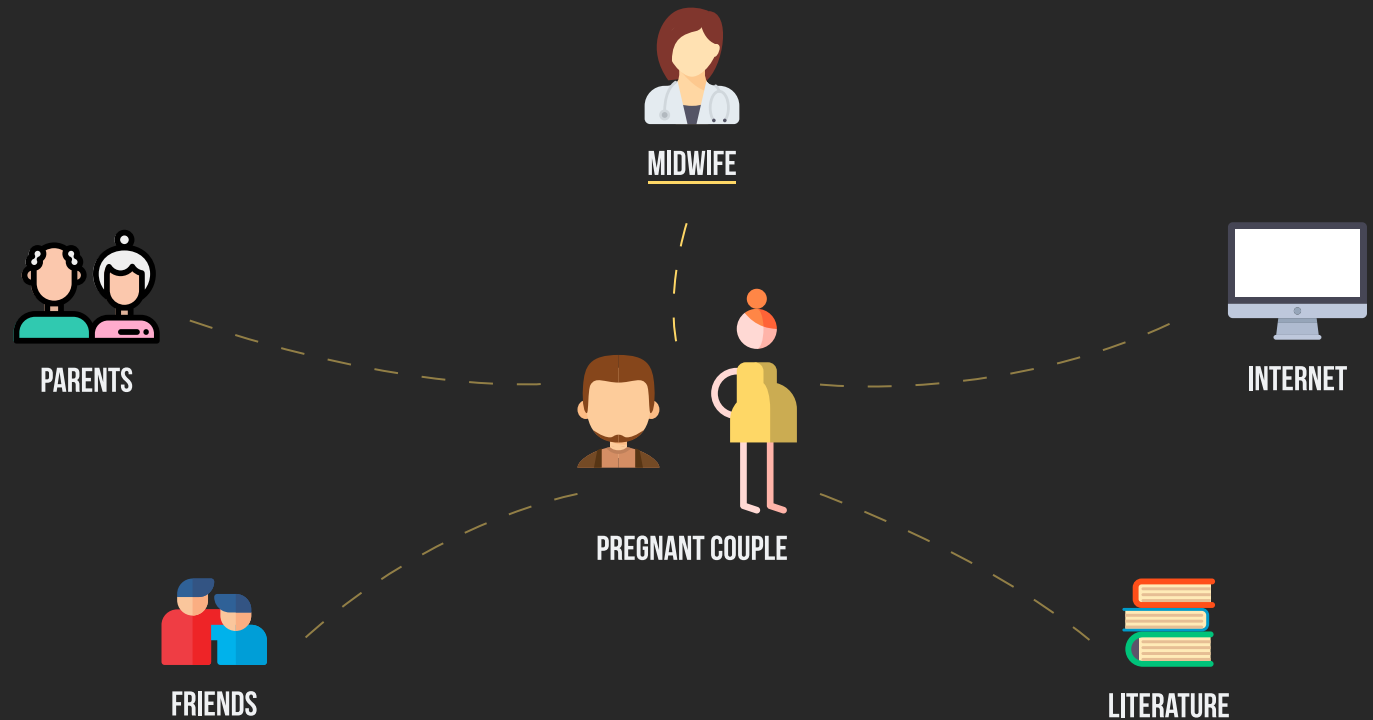
She expressed a disdain of being treated in a condescending way by the people around her in relation to her pregnancy. The expecting mother explained that the worry and caution expressed toward her by the people around her felt more focused on the baby rather than her well being.

This interview yielded conclusions that there might be a need for pregnant women to share the experience with other people, and that expecting mothers who are not experiencing a difficult pregnancy in terms of physical pain can feel angst about this (K. Kindberg, personal communication, April 22, 2018).

— An interview with another **expecting mother** was conducted. When discussing mother groups for after the child is born it became apparent that she wanted more flexibility when choosing mother groups. She had a **list of preferences** for the people she wanted to surround herself with and would feel more comfortable with. In fact, she had tried to find mother groups but to no avail (F. Fallagher, personal communication, April 25, 2018)

Model 2.

This illustration visualizes how pregnant women receives information about their pregnancy. The user research shows that the midwives information and knowledge is held in the highest regard, even if it is not the only source of information.



MODELING

To gather the most significant insights from the previously conducted user research, a user journey, a timeline, a blueprint and a stakeholder map was made.

The modeling worked as a tool to redefine the problem area and connect the insights with each other. The combined views of how the lifestyle change during pregnancy affect the expecting mothers were summerized into valuable insights. The data was narrowed down to seven specific key points to later be used when searching for potential solutions of the problem.



Model 3 shows a digital version of the affinity diagram produced during a mapping session.

GATHERED INFORMATION FROM USER AND BACKGROUND RESEARCH - PROBLEMS AND OPPORTUNITIES IDENTIFIED

- Easily understood and motivational information combined with motivational interviewing (MI) encourages a healthy lifestyle change. Open dialogues about change creates acceptance of the change.
(B, Karlsson, personal communication, April 10, 2018; H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).
- Lifestyle and bodily change in a pregnancy is inevitable. A common goal creates a cooperative desire to accomplish the goal.
(H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).
- A common goal creates a cooperative desire to accomplish the goal.
(H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).
- The desire to change your lifestyle must come from within. The first step towards change is recognizing that there is something to change.
(B, Karlsson, personal communication, April 10, 2018), (H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).
- Mother groups are necessary for expecting mothers to be able to openly ask questions in a safe environment. Expecting mothers have a need of mother groups during their pregnancy to share experiences and to inspire each other.
(H. Hansson, personal communication, April 23, 2018; Kunskapscentrum Barnhälsovård / Kunskapscentrum Kvinnohälsa, 2018; Svenska Barnmorskeförbundet, 2018).
- Expecting mothers have a considerable amount of trust towards their midwives even if they don't always get along with each other.
(H. Hansson, personal communication, April 23, 2018; Kunskapscentrum Barnhälsovård / Kunskapscentrum Kvinnohälsa, 2018; K. Kindberg, personal communication, April 22, 2018; F. Vikingsson, personal communication, April 19).
- Attending physical meetings with other expecting mothers encourage a more open conversation rather than one being online.
(B, Karlsson, personal communication, April 10, 2018; H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).

POTENTIAL SOLUTIONS

During ideation and brainstorming, these seven opportunities lead to three potential solutions.

Service that provides workshops for expecting mothers:

Research has shown that there is a value in meeting other expecting mothers while being pregnant. By attending workshops in group you not only meet other pregnant women but you also activate yourself which is proven healthy. (Kunskapscentrum Barnhälsovård / Kunskapscentrum Kvinnohälsa, 2018; H. Hansson, personal communication, April 23, 2018).

- Creative workshops for mother groups.
- Mother groups sign up for collective workshops.
- Link between Motivational Interviewing and creative workshops. Idea about that change needs to come from within.
- Activate yourself as a pregnant women, whilst sharing experience with people in the same situation.

Showing pregnant women all kinds of pregnancy:

According to an interview with a coordinating midwife there is value in showing pregnant women that each pregnancy is unique. Some expecting women today view their pregnancy as an illness, this could potentially be harmful. Showing every

kind of pregnancy could shed some light on each individual's situation. (H. Hansson, personal communication, April 23, 2018; K. Kindberg, personal communication, April 22, 2018).

- A service that shows the extremes of pregnancies on both ends, the glamorous ones and the horrible ones.
- The purpose is to ensure pregnant women that all kinds of pregnancies are relatively normal.

Service to find private groups for expecting mothers:

Research has shown that there is a value in meeting other expecting mothers while being pregnant. By meeting other pregnant women and by sharing experiences, stress could be relieved and therefore leading to a healthier lifestyle. (Kunskapscentrum Barnhälsovård / Kunskapscentrum Kvinnohälsa, 2018; H. Hansson, personal communication, April 23, 2018; 9 *Months That Made You*, 2018; Svenska Barnmorskeförbundet, 2018).

- For expecting mothers who want to meet other expecting to share experiences.
- Find new friends.
- Find possible friends for their children.
- Hard to find groups outside of Facebook. Most are only for mothers with born children.
- Connect to like-minded.
- Meet in person. Talk, activities, get to know each other and share.

BRAINSTORMING AND BREAKING DOWN THE RESEARCH WITH THE SOLUTIONS

To be able to connect all the dots and get a detailed view over the existing ideas - sessions of pitching, brainstorming and mapping was held. This helped to further develop the current ideas and break them down to more detailed levels to understand possible potentials and opportunities. With these in mind, the solutions were blueprinted to see the obstacles and possible loops. This also made it clear what the end goal was for the different concepts and what difficulties user might have to reach the goals. To understand who the designing was made for and what struggles that currently exists, the research was summarised.

The insights gained from previous research pointed towards the following facts:

- If an expecting mother wants to change their lifestyle, she are on the right track of doing so.
- The information gained from midwives is held in the highest regard of all information sources.
- To work towards a common goal cooperatively in groups and to do so using physical meetings rather than online makes the goals easier to achieve.



After describing and breaking down these insights, it all came down to three requirements for a potential solution.

Acceptance to change - enabling honesty and reflection from the expecting mother.

Trust from midwife - enabling a valuable voice to recommend our service.

Goals with cooperative thinking - enabling expecting mothers to own their goals and feeling a responsibility for the group.

FINDING THE APPROPRIATE SOLUTION

A workshop that dealt with the **concept of showing pregnant women all kinds of pregnancies** received grim criticism.

Concerns were voiced that showing all kinds of pregnancies in an app for instance, could backlash and result in a toxic environment, by constantly comparing pregnancies. As the interview with the coordinating midwife revealed, all pregnancies are unique (H. Hansson, personal communication, April 23, 2018) and therefore it might be a bad idea to compare unique pregnancies. While this idea would be easy to facilitate, it would be challenging to gain a sufficient amount of data about different kinds of pregnancies to be able to display this in a system. Privacy concerns would have to be considered as well.

Concerning the solution involving service that provides workshops for expecting mothers - the link between MI and creative workshops could prove useful, because of the fact that the woman is responsible for her own change however there were still considerable flaws. There are pragmatic and feasibility concerns as to how much this will interfere with the midwives and other municipality workers that would have to

facilitate and manage the workshops. In addition to this the municipality would have to educate several municipality workers in what workshops are and how they work. Workshop activities could also be seen as a side-activity for the women in relation to their pregnancy instead of an activity that directly affects their lifestyle changing.

The sheer amount of work and financing behind this idea led the project to look for a different solution.



Seeing more flaws than strengths when blueprinting the two concepts of **“service that provides workshops”** and **“showing all kinds of pregnancy”** the research directed the project into the third solution. The fact is that the third potential solution was the only one that met all the requirements found by the research. A service that help creating mother groups for expecting mothers is currently non-existent and still there is an apparent need for them. This is made evident by self-created groups on Facebook with several thousand members but previous research shows the importance of meeting in person rather than online (H. Hansson, personal communication, April 23, 2018).

OUTLINING OF USER NEEDS

As of now, parents with recently born children are offered parental support and many choose to attend them. In fact, in 2011, 100% of all parents with recently born children were offered and 45% of all attended at least one meeting. However, these numbers have declined since and are currently (2017) at 89% offered and 40% attending (Kunskapscentrum Barnhälsovård / Kunskapscentrum Kvinnohälsa, 2018).

Mothers with newly born children also often feel that their **preparation of lifestyle change was insufficient** and that they lack the knowledge of how to adapt to it (Kunskapscentrum Barnhälsovård / Kunskapscentrum Kvinnohälsa, 2018).

On the meetings between an expecting mother and a midwife, the midwife currently uses a form of interviewing called Motivational Interviewing. This is used as an approach to make the expecting mother reflect over current habits and lifestyle without a criticizing voice from the midwife. The idea is rather the opposite and is supposed to motivate and to help the mother see the importance of a healthy lifestyle. During this **motivational interview**, the midwife recognize what kind of habits the expecting mother might have and if they might do

harm toward the child she is carrying. If the midwife and the mother combined recognizes an unhealthy habit such as smoking or alcohol addiction for example, the expecting mother might be in a risk group and will get support from the midwife and specialist on the specific area. If the expecting mother does not qualify as being in a risk group, no support but the midwife will be offered and if she want to change a habit she must do so herself (B, Karlsson, personal communication, April 10, 2018; H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).

Connecting expecting mothers and to give them the support they need paved the way for the potential service concept.

Furthermore, the user needs identified are varied and challenging. The fact that mother group participation by expecting mothers not only is positive for a lifestyle change, but wanted has been established. This is because a mother group, when performed properly, is a safe space that inspire and **encourages expecting mother to share experiences** and support each other (H. Hansson, personal communication, April 23, 2018; Kunskapscentrum Barnhälsovård / Kunskapscentrum Kvinnohälsa, 2018; Svenska Barnmorskeförbundet, 2018).

In addition to this, it was made clear that such mother groups and meetings would have to be carried out physically in the real world. As opposed to forums that take place online. The reason for this is that **conversations in real life tend to be more honest and open** (B, Karlsson, personal communication, April 10, 2018; H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).

An interview with an expecting mother, K. Kindberg (personal communication, April 22, 2018), has revealed that associating with friends and family that does not go through the same lifestyle change is an interference for the expecting mother. K. Kindberg (personal communication, April 22, 2018) explained a

difficulty in changing lifestyle if the only circle of friends that surrounds her is people who does not go through the same change. This proved to be one of the challenges for the project.

Moreover, if the expecting mother is to change, the motivational information she is exposed to **has to be easily understood** (B, Karlsson, personal communication, April 10, 2018; H. Hansson, personal communication, April 23, 2018; Svenska Barnmorskeförbundet, 2018).

How might we encourage a healthy suitable and sustainable lifestyle change for expecting mothers?

How might we use the trust towards a midwife as a voice of recommendation without increasing their work?

How might we make expecting mother feel sufficiently prepared when their child is born?

How might we connect compatible expecting mothers to encourage and welcome an honest and open place to share experiences?

Co-creation with the dietitian

To be able to know how to further develop the service and avoid ending up with a broad open field that had no answers nor problems, it was decided to narrow down even more. In a **participatory design** session with the dietitian it became apparent that no service existed for expecting mothers who wanted to change their dietary habits. He inspired the project and pivoted the direction into food and eating. He is an educating dietitian who is currently working with weight loss and healthier lifestyles and how encourage healthy lifestyle change (B, Karlsson, personal communication, May 9, 2018).

It has further been established by Monk, C., Georgieff, M. K., & Osterholm (2012), that an **expecting mothers nutritional dietary lifestyle could affect the foetus' neurocognitive development and it is therefore of high importance that the expecting mother adapt to a healthier lifestyle.**

Together with the dietitian, the service took a turning point targeting expecting mothers who want to change their food habits collectively and at the same time be able to share experiences concerning their pregnancy (B, Karlsson, personal communication, May 9, 2018).

Co-creation with the coordinating midwife

A second meeting with the coordinating midwife was set up and a short **co-creation session** was conducted. The session guided the potential service toward where the touchpoints should be located. Initial brainstorming sessions had put touchpoints in waiting rooms at the Mother Care Unit (MVC). This was instantly discouraged by the coordinating midwife who claimed that this would not be a suitable location because of privacy concerns as well as comfort for the expecting mother.

Instead the coordinating midwife further stated that a potential solution to this could be that to have the registration integrated with the trust the expecting woman feels for the midwife. The registration, and discussion of preferences process **could become part of the motivational interviewing** the midwife conducts with the expecting woman (H. Hansson, personal communication, May 14, 2018).

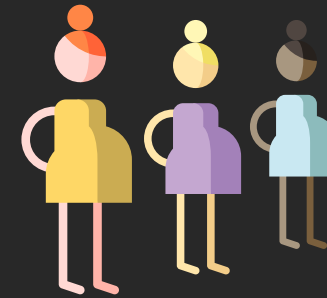
The coordinating midwife also stated that if this service would be widely used, it could potentially help the midwives keep track of the expecting mothers progress and add valuable information to their existing journals. She also believed that this would save time from the already busy schedule of a the midwives (H. Hansson, personal communication, May 14, 2018).

PROPOSAL OF SOLUTION

The Service - "Dietero"

The proposal of solution is a service aimed at expecting mothers that want to connect with other expecting mothers and that would like to change their habits concerning food and eating. This service creates an open environment where expecting mothers can share their experiences and work towards common goals. Dietero puts them together with a dietitian and together they set up reasonable goals suited for their specific group. The goal helps the expecting mothers to feel secure in their lifestyle change and be able to own their goals within this change. The expecting mothers work collectively towards these goals and the service invites to activities and meeting outside of the hospital environment. **The end goal is that the service leads to a sustainable lifestyle change that is kept even after the child is born.**

The service combines the **trust** the expecting mother has for the midwife and the ability the expecting mother has to change her lifestyle from within. On the twelfth week of a woman's pregnancy she is introduced by her midwife to the service. The twelfth week is the most suitable for the introduction of the



service considering the risk of miscarriage in the earlier weeks. While this is the case, engaging in a change of lifestyle is preferably done as soon as possible (H. Hansson, personal communication, April 23, 2018).

The midwife performs their regular routine in meetings, trying to figure out if the expecting mother need to undertake some lifestyle changes, or if she is in a risk zone in terms of lifestyle. **If an opportunity to change a lifestyle is identified the midwife will bring up Dietero.**

The midwife suggest that the expecting mother has the option to join a service. The service would match her with other expecting mothers based on preferences that the expecting mother decides. This invites to acceptance of change and reflection from the expecting mother as well as the use of their trust towards their midwife.

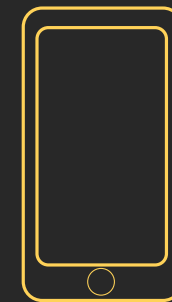
The connected app

The expecting mother is recommended an app where she can register and identify herself with BankID. The midwife green-lights the expecting mothers registration, this is done to prevent any other registrations than expecting mothers that have discussed the service with a midwife. Once registered she is prompted to enter her preferences for other expecting mothers. The preferences are age, living area, area of change and preferred meeting times. When the preferences are set the service starts searching for suitable other expecting mothers that have matching preferences. Once a match is made the service forms a group and the app notifies the expecting mothers. Via the app, the dietitian sends out proposals for the **introduction meeting**. Six scheduled times are shown in the app and the expecting mothers have the option to decline or accept the proposed times, if all can participate the date is set, if not, another date is suggested.

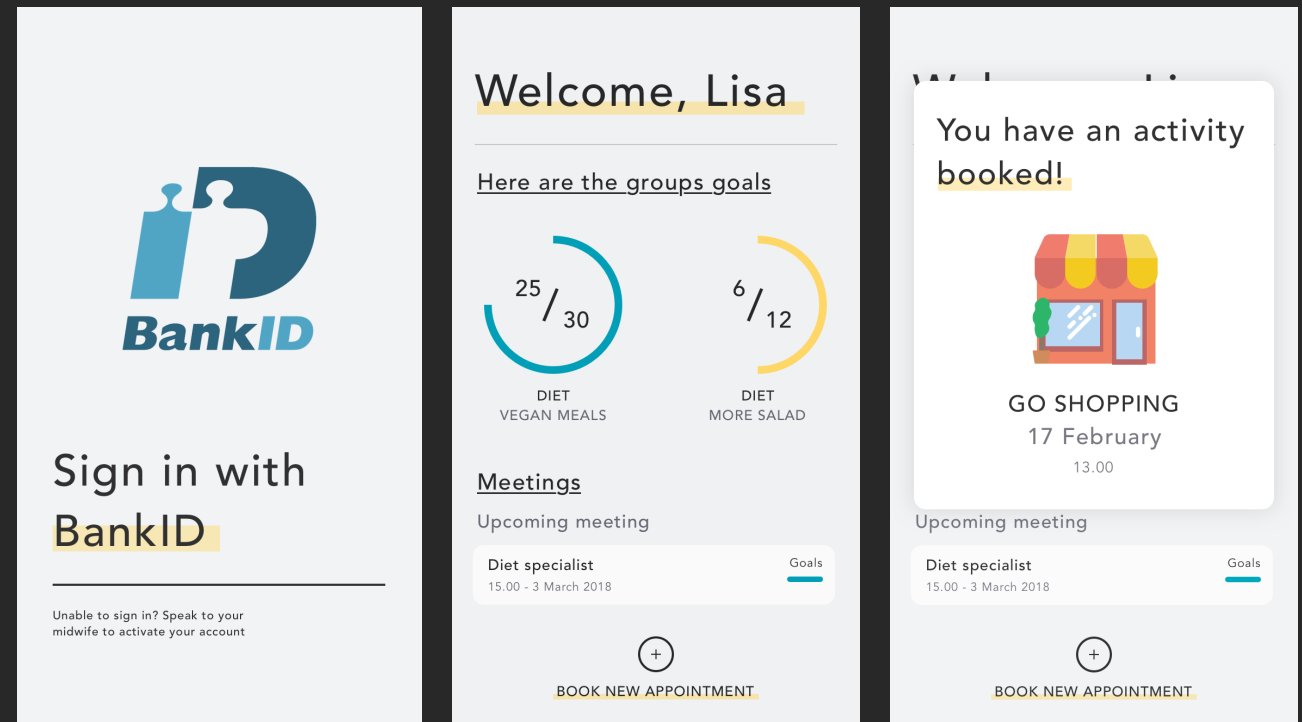
On the meeting the mother group meets up with a dietitian with whom they talk about the topics they had entered in the app. The dietitian coaches them and helps them in anyway related to changing their dietary lifestyle.

Together they **set personalised goals** that are to be accomplished until the next meeting with the dietitian. The dietitian also guides them through the app and how they can track their goals using the app.

In the app, the expecting mother can follow up on their collective goals and track how they are progressing. The goals set are all on group level, assuring that the tracking is to. For instance a goal might be that the group collectively should eat 30 vegetarian meals in 30 days. One expecting mother might eat 20 and the other might eat five each, however this won't be visible for the expecting mothers, but only for the dietitian. This enables the goal and **the work to be done in a group and not on an individual level**.



The service also sends out recommendations and guidance about how and what to think of when attempting to change a dietary habit. The dietitian can send out messages, invitations to meetings to the group via the app. The service itself sends out tips of activities for the expecting mother to try out. This could be, for instance, to go grocery shopping together to inspire each other to eat healthier food. This invites them to meet and have contact without the need of specific orders from the dietitian.



Potential design solutions for the connected app.
Showing group goals and upcoming meetings.

IMPLEMENTATION

Dietitians and midwives role

All the data gathered from the app is securely processed and transferred to a database to which the expecting mother's midwife and appointed dietitian have access. The midwife receives the data and can easily track progress of the expecting mother. This way the mother will indirectly help and ease the midwife in journal keeping, which will hopefully free up time for the midwife. **Enabling the midwives to practise their work more efficiently.**

The other person using the gathered data is the expecting mother's dietitian. It is here where the dietitian uses the data to book group meetings and set common goals for the assembled group of expecting mothers. Through the dietitian's touchpoint they can look at the entered preferences of the mothers and prepare sensible goals that are to be met throughout the expecting mothers' pregnancies.

The service is designed in a way that puts minimal effort on the already hard working midwives and dietitians. When the service is implemented and well understood by all stakeholders, the midwife and dietitian will essentially be performing the same amount of work as before. One could even claim that their workload will be reduced, this possibility was affirmed in an interview with the coordinating midwife (H. Hansson, personal communication, April 23, 2018).

The dietitians practice would be different in the sense of having a group of expecting mothers all of whom have the same goal of lifestyle change. The midwives work would be streamlined by the dietitian and the applications data. To confirm this in reality however, the service would have to be field tested in its proper environment with all influencing factors. In the initial stages of a imagined implementation of the service, there would be a learning- and adjustment curve for the midwife and dietitian. This is because of the new computer program that would have to be introduced to their routine.

TOUCHPOINTS

The touchpoint of the service is the app in which the expecting mothers track their goals, get written recommendations from the dietitian and accept or decline meetings in the calendar.

One could also argue that the midwives and the dietitians themselves could work as touchpoints since they enable the enlisting of mothers. The dietitians also has a touchpoint on the service in a web based follow-up tool.

VALUE STATEMENT

Dietero will assist pregnant women adopt a healthier lifestyle. In a cooperative way the pregnant women will coax and support each other and work together toward their common goals. Working together will ensure that no one flags or fails.

STAKEHOLDER NEEDS AND OPPORTUNITIES

The midwife's part in this service need to be kept minimal, as the resources and time of midwives are as of today already strained (H. Hansson, personal communication, April 23, 2018).

The service is designed to be a beneficial tool for the midwife. The midwife can use the data gathered from the sessions the dietitian held with the expecting mothers to aid the midwives private sessions with said expecting mothers.

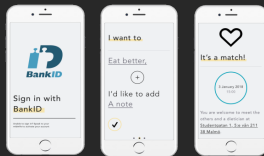
The dietitian needs to be able to have an overview of many groups, set goals and an easy way to manage the booking of meetings.

USER JOURNEY

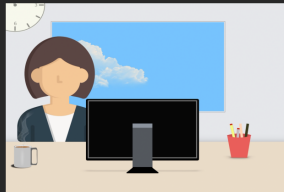
DIETERO flowboard

Lisa's midwife has recommended her to lose weight in the pregnancy, but Lisa is after some time expressing trouble to lose weight. Her midwife recommends 'Dietero' and approves Lisa in the service.

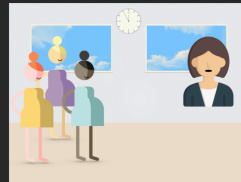
Lisa signs in with BankID on the Dietero app. She enters her preferences and gets a match after.



Dietitian receives a notification about the group that has formed. Dietitian sees their common preferences and prepares for a meeting.



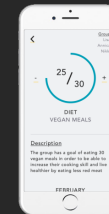
Lisa attends to the first meeting with her dietitian and two other pregnant mothers. Common goals for the group are set.



Midwife gets info from Dietero about Lisa: goals set, progress and advised activities. This data is put into the midwife's journal about Lisa. This data can be used in future meetings, eg. as groundwork for motivational interviews.

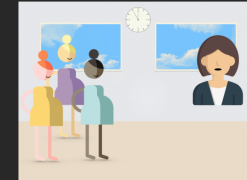


Lisa views and tracks her group's goals until next dietitian meeting. Eg. 30 vegan meals. When one day has passed and Lisa has eaten one vegan meal, she presses the goal tracker once. It then shows progress for everyone in the group.



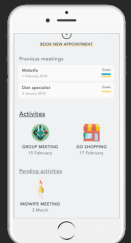
Dietitian gets updated data about Lisa's group, sees their goals and prepares for a new meeting.

Lisa attends to the second meeting with her dietitian. New goals for the group are set.



Dietitian uses gathered data to push out an group-activity to the group. An activity that will help the group fulfill their goals to their next meeting.

Lisa and the others in the group receives notifications about a group-activity, recommended to them by their dietitian.



CONCLUSION AND DISCUSSION

The most influential insight revealed in the project is that change has to come from within, from a desire to change. This is preferably done in a group, in order to inspire each other. Even if this is the proposed solution, this service is not the only way to approach this problem area.

Having proposed a potential solution to the problem area with the narrowed down scope of dietary lifestyle changing, we want to make it clear that the scope could involve other topics. The service that we have proposed here is designed to be able to apply to any topic, such as smoking, alcohol and exercise. The specialist would then have to be changed to match the topic. However, the research conducted does not include enough substantial sources to back an immediate switch of topics, and needs further research to confirm.

Dietero can also ease the midwives and specialists work in terms of increased amount of data concerning the patient. This aspect of Dietero can be further developed on, possibly included in the midwives journaling program.

Further work would include field testing of the service and the app. Thorough research of different topics and how these would apply on the existing prototype app would determine the versatility-value of the service.

Also, it has been established that a change when being pregnant is inevitable. Even so, we would like to emphasize that we do not disregard it as being a potential problem. We are therefore aware of that many struggle with more difficult topics than dietary but hope that these get the support they need from the midwives and psychologist. This is not a specifically a service for expecting mothers with substance or alcohol difficulties in risk groups even if those topics are potentially more harmful toward the foetus.

We are also aware that one cannot push friendship on people, however when connecting people who have the same preferences, interest and goals, the probability is higher. Also, since the need and desire to have these kinds of groups has been established, the expecting mothers have a positive mindset meeting new friends entering the service.

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