Preventing child obesity

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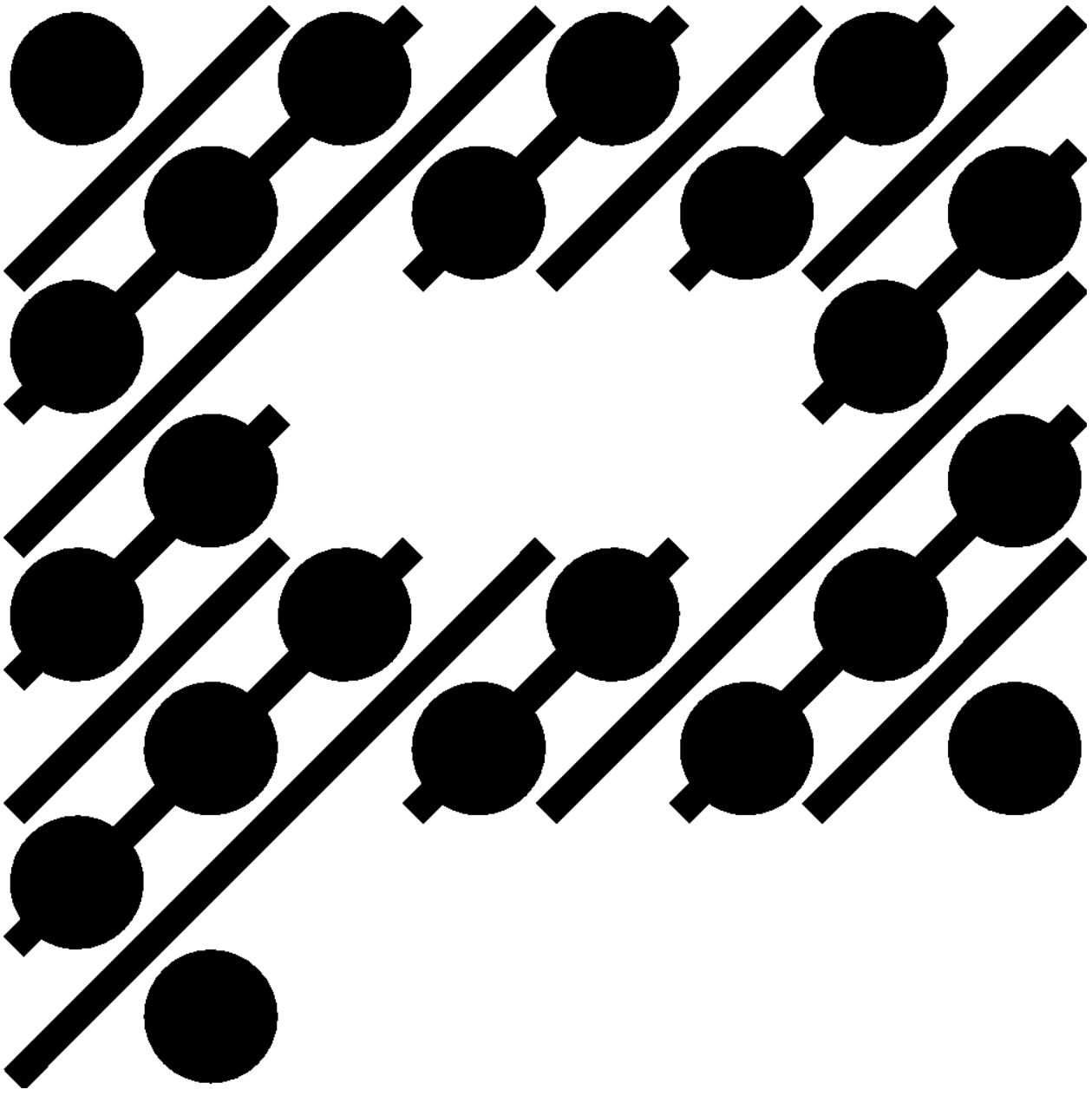

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Preface

The report that you are about to read is the result of a creative and in some ways chaotic project, where students from different disciplines and universities worked with challenges that Stockholm, as a county and a city, is facing.

The city is our lab! - is the motto for Openlab. Students worked with challenges provided by Stockholm City and Stockholm Council in a wide range of areas. Within the framework of a 15 credits master-course, students worked in project-groups of 6-8 persons for one semester. To develop an understanding of the issue at hand, students engaged with the set challenges though the use of various research methods such interviews and observations, as well as literature studies. Students then developed a number of proposals for solutions, one of which has then been pursued to create a more concrete solution that is tested within real-world situations.

Whilst working together at Openlab, students from different disciplines met and interacted with each other – not always without complications. However, in these meetings something new and exciting can emerge. Students carry with them experiences of interdisciplinary discussions and solutions - a very important competence for meeting challenges of the future.

The result of all discussions, analysis, and synthesis' is here documented in the report. Of course the report can only cover some parts of this dynamic and creative process. We who have worked as teachers in this course have our main function as coaches, providing tools during different phases of the project. The students work according to a process model based on *Design Thinking* and *SCRUM*. Creative ideas and systematic thinking merge together to a final project.

For us this is learning at its best – Freedom, Creativity, Social interaction, Engagement and FUN! But it is also based on real challenges in society – the idea is that Openlab's project should contribute to a better Stockholm for its inhabitants. **The city is our lab!**

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The Openlab Master's Course Report Series

13:01
Hitta rätt i vården
Ett värdigt åldrande

13:02
Vårdombud och Vårdagram
Rätt bil i rätt ruta
Hem & Vision

14:01
Levande stadsrum
LivsLabbet
Alla kan falla

14:02
Spira
Södersken
Zon 164

15:01 (English)
Increasing Patient Involvement in the Healthcare System
Stockholm in Motion
Green Power of the Ecoflower

15:02 (English)
Grassroots Movements & Stockholms Stad: Bridging the Gap
BikeMeSTHLM
The Step-Up! Planning Tool

16:01 (English)
Inside out
Elderly people & warmth
EduAction

16:02 (English)
Jobbtorg
Helping Hearts
Inspiring the Youth of Husby

17:01 (English)
The process wheel
Childish solutions
MindTrip-Making nursing homes more like homes

17:02 (English)
Cykelbanan+
Finns I Sjön
Culturama
Stockholm Water Tap

18:01 (English)
The Dinner Dome
The Magic Button

18:02 (English)
Revival
SpiderWoman 2:0
Fireplace
Smart Square
DiContrast

Abstract in English

Child Obesity is an increasing problem in the county of Stockholm, even though it is still on a lower level compared to other regions in Sweden and other countries in the world. Within the Open Lab Master's course a group was given the challenge to prevent child obesity for children aged between -1 - 6 years by SWElife and Stockholm County Council administration. The challenge has its place in the overall goal of "Zero obesity at school start 2030".

Obesity is a complex problem with a wide variation of root causes ranging from micro- to macro factor, well suited for the design thinking method, which is a non-linear, iterative process seeking to understand users, challenge assumptions, redefine problems and create innovative solutions through prototyping and testing.

Using design thinking, the group identified that the users (parents) needs help to come to a common understanding of their life with children, cooperate and structure their everyday life at an early stage in their parenthood to be able to build a healthy lifestyle in their new situation. Several solutions with potential to achieve the goal were prototyped and tested and the concept that were graded as the one with most potential was a tool for making a family-contract, called "We are Family". It is a tool which provides you with tips and tricks to cooperate towards a happy and healthy family.

Sammanfattning på svenska

Barnfetma är ett ökande problem i Stockholms län även om det fortfarande är på en lägre nivå jämfört med andra regioner i Sverige och andra länder i världen. Stockholms läns landsting och SWElife gav, inom ramen för Open lab's master kurs, en grupp utmaningen att förebygga barnfetma för barn mellan -1 -6 år. Utgångspunkten är det övergripande målet "noll fetma vid skolstart 2030".

Fetma, som är ett komplext problem med grundorsaker som spänner från mikro till makronivå, lämpar sig väl för "design thinking metoden". Design thinking är en icke-linjär, iterativ process som utgår från en förståelse för användaren, utmanar grundantaganden, omdefinierar problemen och skapar kreativa lösningar som kan testas.

Med hjälp av design thinking identifierade gruppen att föräldrar behöver komma till en gemensam förståelse för sitt liv med barn, samarbeta och strukturera sin vardag, på ett tidigt stadie i sitt föräldraskap, för att kunna utveckla en hälsosam livsstil i sin nya situation. Flera prototyper på lösningar med potential att göra detta skapades och testades och det koncept som skattades som det med mest potential var ett verktyg för att skapa ett familjekontrakt, "We are family". Det är ett verktyg som erbjuder tips och tricks för att samarbeta och skapa en lycklig och hälsosam familj.

Content

1. Background

1.1 The Challenge Givers and the Challenge

Child obesity is a severe disease which can have several root causes, it is highly complex and there is no “one solution fits all”. The numbers of obese children all over the world are rising and also Sweden is facing this challenge. Therefore “SWElife”, “a strategic innovation programme, funded by the Swedish Government” [1] and the Stockholm County Council administration approached OpenLab with one of their ongoing challenges. SWElife “support[s] collaboration within academia, industry and healthcare, with the goal to strengthen Life Science in Sweden and to improve public health. SWElife sees themselves as a neutral actor with the aim to achieve “better health through innovative ideas and solution” [2]. Due to their innovative approach on solution finding a student group of the OpenLab Stockholm course “Challenges for the Emerging City” was assigned with one of their visions and challenge: “the Prevention of Childhood obesity” from the years -1 until 6 of the child's life. The presented societal challenge has the overall goal of “Zero obesity at school start 2030”.

1.2 Design Thinking

The OpenLab Stockholm, as a challenge-driven innovation Lab, uses the “Design Thinking Method” as one of their core methods in order to come up with sustainable solutions where the end user is being placed “at the center of innovation” Design thinking is a non-linear, iterative process which seeks to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test. The method consists of 5 stages—Empathize, Define, Ideate, Prototype and Test and is most useful when you want to tackle problems that are ill-defined or unknown[3].

In the empathize stage it was about researching on the users’ needs to gain an empathetic understanding of the problem through user research. In the defining stage, users’ needs and problems with the accumulated information from the first empathizing are identified. In the ideating stage the ideas based on the solid background, looking for alternative ways to view the problem are generated. The next stage is an experimental one, where the best possible solutions are created, as prototypes. That is making some visual, inexpensive, scaled down version of the solutions with the aim of testing them in the next stage. The testing is the final stage of the design thinking process but, in an iterative process such as design thinking, the results generated are often used to *redefine* one or more further problems. Designers can then choose to return to previous stages in the process to make further iterations, alterations and refinements to rule out alternative solutions. In the Openlab Master course the process is made into two phases, each phase with the 5 stages double-diamond as shown in Figure 1.

[1] Swelife, 'Introducing Swelife', <https://swelife.se/en/what-is-swelife/introducing/>, accessed October 23 2019

[2] Ibid.

[3] Openlab, 'About Us', <https://openlabsthlm.se/about>, accessed 23 October 2019

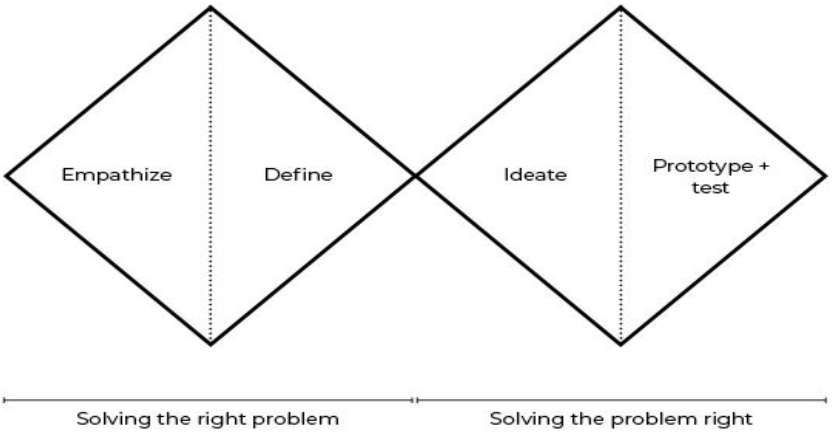

Figure 1: Design-thinking Double-Diamond

The outcome of the first double-diamond (hereafter called “First Project Phase”) of the process will be presented in the next part of this report.

2. First Project Phase

2.1 Empathizing

At this stage in the process learning more about the problem in literature and the user perspectives was done. The team members in the group were reading research papers about child obesity, went to interviews with BVC nurses in Hallunda and read through and communicated with a facebook group of parents with overweight children. More information about those steps will be given in the following sections.

2.1.1 Child obesity in Sweden

Overweight and obesity among children has risen sharply over the past 25 years in Sweden as the prevalence of obesity in children has increased from 1% to 4% [4]. The definitions and classifications of obesity are conventional as there are no precise limits on when excess fat causes health problems in children. In clinical work, obesity in children and adolescents can be defined by age- and sex-specific nomograms for body mass index (BMI). If the BMI is over 30, the child is obese[5] .

Childhood excess weight is a serious public health concern that reaches epidemic proportions in many regions of the world. According to the World Health Organization (WHO), the number of overweight or obese infants and young children (aged 0 to 5 years) increased globally from 32 million in 1990 to 41 million in 2016 [6].

In a recent meta-analysis of more than 100 published studies (477 620 children aged 2 to 13 years) where data from 28 European countries were included, combined prevalence of overweight and obesity in the Iberian region (mainly Spain, Portugal) tended to decrease from 30.3% to 25.6% but tended to increase in the Mediterranean region from 22.9% to 25.0%, while no substantial changes were observed in Atlantic Europe or Central Europe, where the overweight and obesity prevalence changed from 18.3% to 19.3% and from 15.8% to 15.3%, respectively[7]. Overall, the pooled prevalence estimates of overweight/obesity in European children (aged 2–7 years) during the period 2006–2016 was 17.9%, and the pooled prevalence estimate of obesity was 5.3%, where Southern European countries showed the highest prevalence of excess weight [8].

In Sweden, the number of children per 100,000 children diagnosed with childhood obesity has increased 2- to 3-fold from 2005 to 2015[9]. Children in more socioeconomically challenged

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[4] Annelie Thorén, 'Fetma Hos Barn', (updated 2017-06-28) <https://www.internetmedicin.se/page.aspx?id=5155>, accessed September 2019 2019.

[5] N. Tyson and M. Frank, 'Childhood and Adolescent Obesity Definitions as Related to Bmi, Evaluation and Management Options', *Best Pract Res Clin Obstet Gynaecol,* 48 (Apr 2018), 158-64.

[6] World Health Organization Who, 'Facts and Figures on Childhood Obesity', *Commission on Ending Childhood Obesity* (updated 23 September 2019 11:57 CEST) <https://www.who.int/end-childhood-obesity/facts/en/>, accessed October 20 2019.

[7] M. Garrido-Miguel et al., 'Prevalence and Trends of Overweight and Obesity in European Children from 1999 to 2016: A Systematic Review and Meta-Analysis', *JAMA Pediatr,* (Aug 5 2019b), e192430.

[8] M. Garrido-Miguel et al., 'Prevalence of Overweight and Obesity among European Preschool Children: A Systematic Review and Meta-Regression by Food Group Consumption', *Nutrients,* 11/7 (Jul 23 2019a).

[9] C. E. Flodmark, 'Prevention Models of Childhood Obesity in Sweden', *Obes Facts,* 11/3 (2018), 257-62.

families with respect to family income, education and immigrant background are at increased risk of obesity[10] [11].

In Stockholm county, 8.8% of 4-year-old children were identified as overweight and 1.8% as obese[12]. However, even at this young age there is already a large variation in prevalence depending on the area of Stockholm where the children reside, with a prevalence of overweight and obesity of 6.5% in the affluent central city areas and as high as 17% in the less affluent suburban areas [13].

A study of the attitudes to patients with obesity in the Swedish health care system implies that there is a stigma around obesity and many times the health personnel talked behind the patient's back. Some of the medical staff had a negative attitude that included blaming the patient for their obesity. The obese patients were also often regarded as an increased workload.

2.1.2. Causes and consequences

Childhood obesity in Sweden has several causes that differ among populations and individuals. Excessive calorie intake in food is considered to be the main problem compared to physical activity. Consumption of fast foods, high sugar and fat contained foods, too big portion sizes, snacking and irregular meal times have been associated with child obesity[14] According to studies, also other factors contribute to child obesity in Sweden. Factors like income, maternal marital status, low level of education, living in large cities, advanced paternal and maternal age, family history of obesity, parental history of diabetes, chronic obstructive pulmonary disease, alcoholism and personal history of diabetes are all associated with higher odds of diagnosed child obesity[15]. High parental BMI and the child's own BMI at birth and at 1 year predicted higher BMI of the child at 5 years[16]. Parents' overweight, child's physical inactivity, skipping breakfast and overeating have also been associated with child obesity. Furthermore, parents with obese children have problems recognizing their offspring's overweight. Additionally, emotional eating is recognized to be more common in overweight children than normal weight children[17]. Many pathways also connects stress to obesity.

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[10] A. R. Khanolkar et al., 'Socioeconomic and Early-Life Factors and Risk of Being Overweight or Obese in Children of Swedish- and Foreign-Born Parents', *Pediatr Res,* 74/3 (Sep 2013), 356-63.

[11] L. Moraeus et al., 'Multi-Level Influences on Childhood Obesity in Sweden: Societal Factors, Parental Determinants and Child's Lifestyle', *Int J Obes (Lond),* 36/7 (Jul 2012), 969-76.

[12] Barnhälsovårdsenheten Stockholms Län, 'Årsrapport: Barnhälsovård I Stockholms Län 2018', (Stockholm: Stockholms län, 2019).

[13] Ibid.

[14] K. Sahoo et al., 'Childhood Obesity: Causes and Consequences', *J Family Med Prim Care,* 4/2 (Apr-Jun 2015), 187-92.

[15] X. Li et al., 'Neighbourhood Deprivation, Individual-Level Familial and Socio-Demographic Factors and Diagnosed Childhood Obesity: A Nationwide Multilevel Study from Sweden', *Obes Facts,* 7/4 (2014), 253-63.

[16] K. Huus et al., 'Risk Factors in Childhood Obesity-Findings from the All Babies in Southeast Sweden (Abis) Cohort', *Acta Paediatr,* 96/9 (Sep 2007), 1321-5.

[17] E. Jalo et al., 'Emotional Eating, Health Behaviours, and Obesity in Children: A 12-Country Cross-Sectional Study', *Nutrients,* 11/2 (Feb 7 2019).

It is widely known that obesity reduces child health-related quality of life and is associated with several health and social consequences[18] [19]. These include social stigmatization, school bullying, poor academic performance, mental health[20] [21], as well as an increased risk of several malignancies such as leukemia, Hodgkin's disease, colorectal cancer, breast cancer, metabolic syndrome, type 2 diabetes mellitus, osteoarticular diseases, and multiple cardiovascular risk factors[22] [23]. Furthermore, child obesity is an independent predictor of cardiovascular events in adult life and overall mortality, in such a way that it has been considered that child obesity could pose a threat to life expectancy of the youngest populations[24] [25]. Moreover, simulation studies showed that child overweight and obesity is highly predictive of adult obesity[26] [27] and is associated with almost twice as high productivity losses to society as for normal weight over a lifetime[28] [29].

2.1.3 Getting to know stakeholders and end users

From the literature and the contact with the Challenge-Givers (CG), some stakeholders and users were identified. BVC nurses were mentioned a lot by the CG and they also pointed towards parents as a user-group. But since the challenge is to prevent obesity for children between -1-6-years old, it was hard to overlook the child as a potential end-user. Obesity is also related to a socio-economic problem in Stockholm. Obesity among 4-years old children is

[18] M. Hoedjes et al., 'Health-Related Quality of Life in Children and Adolescents with Severe Obesity after Intensive Lifestyle Treatment and at 1-Year Follow-Up', *Obes Facts,* 11/2 (2018), 116-28.

[19] A. S. Kelly et al., 'Severe Obesity in Children and Adolescents: Identification, Associated Health Risks, and Treatment Approaches: A Scientific Statement from the American Heart Association', *Circulation,* 128/15 (Oct 8 2013), 1689-712.

[20] Sahoo et al., 'Childhood Obesity: Causes and Consequences', (Childhood obesity: causes and consequences', *J Family Med Prim Care,* 4 (2), 187-92

[21] C. Torrijos-Nino et al., 'Physical Fitness, Obesity, and Academic Achievement in Schoolchildren', *J Pediatr,* 165/1 (Jul 2014), 104-9.

[22] Kelly et al., 'Severe Obesity in Children and Adolescents: Identification, Associated Health Risks, and Treatment Approaches: A Scientific Statement from the American Heart Association', (*Circulation,* 128/15 (Oct 8 2013), 1689-712

[23] S. Weihrauch-Bluher, P. Schwarz, and J. H. Klusmann, 'Childhood Obesity: Increased Risk for Cardiometabolic Disease and Cancer in Adulthood', *Metabolism,* 92 (Mar 2019), 147-52.

[24] M. Barton, 'Childhood Obesity: A Life-Long Health Risk', *Acta Pharmacol Sin,* 33/2 (Feb 2012), 189-93.

[25] K. M. Flegal et al., 'Association of All-Cause Mortality with Overweight and Obesity Using Standard Body Mass Index Categories: A Systematic Review and Meta-Analysis', *JAMA,* 309/1 (Jan 2 2013), 71-82.

[26] S. A. Cunningham et al., 'Entrenched Obesity in Childhood: Findings from a National Cohort Study', *Ann Epidemiol,* 27/7 (Jul 2017), 435-41.

[27] Z. J. Ward et al., 'Simulation of Growth Trajectories of Childhood Obesity into Adulthood', *N Engl J Med,* 377/22 (Nov 30 2017), 2145-53.

[28] K. Neovius et al., 'Lifetime Productivity Losses Associated with Obesity Status in Early Adulthood: A Population-Based Study of Swedish Men', *Appl Health Econ Health Policy,* 10/5 (Sep 1 2012), 309-17.

[29] M. Tremmel et al., 'Economic Burden of Obesity: A Systematic Literature Review', *Int J Environ Res Public Health,* 14/4 (Apr 19 2017).

at least seven times more common in Alby, Märsta and Storvreten compared to parts of the inner city of Stockholm[30] .

Some quick interviews on the streets of Östermalm, known as a wealthy part of Stockholm, with parents that have children in different ages from small babies to adults was done. Some strong opinions on the topic such as kids can not be addressed as obese, kids are kids and should be left that way were found during the interview. These opinions clearly indicated that child obesity is a sensitive topic, just as the CG had pointed out.

2.1.4 Interviews with BVC nurses

To know more about all of these groups a contact with BVC-nurses in socially disadvantaged areas was made. This let the group to get 4 nurses as interviewees in Hallunda/Botkyrka which is a socially vulnerable area in the south of Stockholm.

The insights from the interviews with the BVC-nurses were that firstly, the nurses are aware of the problem and seem to have ways to address it when it's called for. Secondly, they also seem to look upon food as the main root cause or rather the most important issue to address when overweight is a fact. Thirdly, the curve with the child's growth in length and weight was seen as a natural starting point for the discussion around overweight. This is because the curve is perceived as a fact and not arguable. Overweight and obesity was seen as a sensitive topic to address by all of the nurses.

"I feel prepared to talk about the topic, but I must find out first how the parents are feeling about the topic to know how to address it because of its sensitivity."

The strategy to talk about the issue was to refer to the weight curve. When the nurse sees a change towards overweight on the curve, she or he likely starts by asking if something out of the ordinary has happened in the family or if some habits have been changed. Some of the reasons associated with a child becoming overweight were either parents divorce or just a new phase in the child's life - for example starting with formula or "välling" one or a couple of more times during the day.

It was noted from the BVC-nurses that most parents seem to know what is healthy and what a healthy lifestyle is. The problem is more to see the details in their own daily routines, to see their own child's potential overweight and go from that to start to change their habits.

"Mostly they (the parents) already noticed the change physically, but for most parents that is normal, healthy and even a blessing."

The difficulties making a change in the routines or having to change their habits, seem to be overshadowed by other issues in their life, according to the nurses.

"They are having other social problems, it does not help if I say that this is the portion size because daily life is too complex"

They also point out that both cultural background and false beliefs about obesity sometimes put barriers to doing something to prevent obesity.

"But still many people here are having a very healthy food at home also in this area!"

Some practical needs were also mentioned by the nurses, for example, that they only have brochures in swedish about food, health and related issues as well as insights in depth of the obesity problem and of food habits in different cultures are lacking among the BVC nurses (some have special training). According to the nurses, they have too little time with the families

[30] Stockholms Län Barnhälsovårdsenheten, 'Årsrapport: Barnhälsovård I Stockholms Län 2016', (2017).

and there is a gap between the followup meetings of families with BVC between 18 months and 36 months of age, an age where the signs of overweight and obesity is becoming more obvious.

2.1.5 Parents to overweight and obese children

We also tried to get in contact with parents in different parent-forums on the internet and found a group called “Föräldrar till överviktiga barn” (Parents to overweight children) on Facebook with almost 300 members. The banner for the parents with overweight children in the facebook is shown is image 1.

Image 1. Facebook group banner for the parents with overweight children.
(https://www.facebook.com/groups/overviktiga.barn/)

We prepared and posted questions to the group but didn’t get answers so instead we went through the different threads and conversations and tried to grasp what were their main issues in life. The most common themes in the group were:

(i) General tips and seeking advice on practical matters like:
- How to find big size clothes
- Find different types of exercise/physical training to do
- Healthy snacks and menus
- Sugar and candy replacements

(ii) Communicating to the child:
- that he or she is perfect but that they need to change
- without an “forbidding” attitude
- that they can’t have more or have to stop eating certain foods

(iii) The connection (and interconnection) of the overweight/obesity with other problems like:
- Stress and problems with the “life-puzzle”
- Neuropsychiatric disorders like ADHD and autism
- Inactive lifestyle
- Bullying
- Divorces
- Poverty

(iv) How they are being met in the Swedish health system:
- With judgemental attitudes
- Not being assigned to meeting with doctor at specialist care center “barnmedicin” or “ungdomsmedicin”
- Being afraid that the social services will take the child

(v) Feelings:

- Gulit
- Frustration
- Anger
- Powerlessness

Below, some quotes from the facebook group are listed:

“I feel despair and powerlessness! You who have received help with this concerings your children.What tips and advice have been most valuable and produced the best results?”

“I am just so sad right now, this is triggering a lot of feelings within me from childhood and even thoughts about my daughter getting bullied and so on.”

From the forum we concluded the insights that the parents have a wide variation of life problems to deal with that might have a strong link to the fact that their child is overweight. That strengthens the facts from literature on the complexity of the causes. It is also really clear that the parents need help and take help, feels badly treated by professionals and that they are fed up with judgemental attitudes. The matter is very emotional.

2.1.6 Key insights from empathizing stage

Prevention of child obesity is, according to the insights from the empathizing phase, precisely the kind of complex problem for which the design thinking methodology is well suited. It has multiple causes within a lot of areas in life, ranging from genetics, via personality, family structures, living conditions, personal economy and social-economic factors.

This has many implications. As many areas of causes as possible should be framed in a solution, and the problem should therefore be addressed through many stakeholders. Not one single actor has the key to the solution. From our challenge givers, and literature, we got the insight though, that parents have a key role and should in some way be a part of the solution. They are the link between almost all the causes and the child and also a link between many stakeholders and the child when in the age of -0-6 years old. We also found out that food has a bigger impact than exercise contrary to what we thought and if to single out one cause, food would in some way be involved.

There is a lot of prejudice and negative attitudes towards overweight and obese persons in Sweden. It is also a highly sensitive matter, still almost a taboo to talk about in Swedish society, both among people in general and within professions. That means that even if a professional of some kind, a doctor or a preschool teacher, meeting an obese, or a person at risk of being obese, has no prejudice and is highly educated on the matter, it would still be hard to just raise the question in a conversation. In that sense you can see parallels to other difficult matters such as for example violence in the family.

The fact that the prevalence is higher in socially vulnerable areas with a higher number of immigrants makes it even more complex to address where language barriers is one but also matters of traditions regarding food and knowledge of healthy food, and other habits.

Furthermore, the challenge was about preventing child obesity, and thus the matter is of course even more sensitive when it comes to talking about it to children - both for their parents and for professionals. A child is a vulnerable, not yet developed person. To address something that might influence their self-esteem and understanding of themselves in a negative way is a delicate matter.

2.4 Defining

2.4.1 Personas

Based on the findings from the empathizing phase the team decided to focus on food as the root cause of child obesity in the social-economic challenged areas and parents as the main actors.

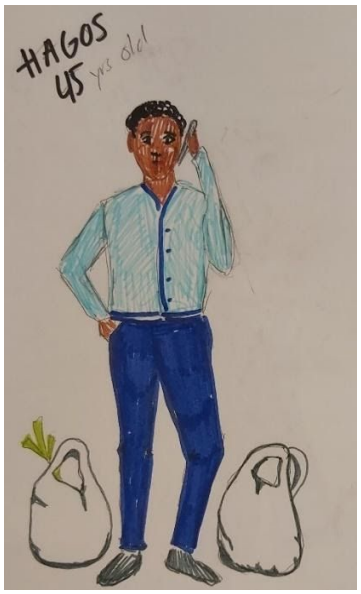
To get further the team created three personas (a persona is a role that individuals play).Those personas, representing a mother, father and a child living in those areas, were created as shown in Figure 1. The personas were created with different characteristics and the group was drawing them to achieve a better visual understanding of the three characters. Further, we were discussing about the persona's lifes, about their routines, possible thoughts and feelings. That is how the group came up with the needs of each persona and insides based on those. The personas were used not only for defining the core problem and empathizing with the main target groups, but also in various settings on later stages. For example, the group used the personas when evaluating the solutions from the first phase and also for understanding user needs when creating the final prototype in the second phase. A point of view (PoV) for each persona was created as shown in Image 2.

Image 2. The 3 Personas - Johanna, Hagos and Emma.

- Johanna from Sweden, 28 years old with a 1 year old son, Kian
- She is obese but the father has normal weight
- She is starting her part time job again
- She will stop breast feeding Kian
- She is feeling stressed (household, job and baby)

Need: a better daily routine that will give her time for sleeping, socializing and communicate with her partner
Insight: the risk that the child could get obese is not enough present in her thoughts

- Hagos from Eritrea
- Has a 18 months old daughter and a 10 year old son
- Living with his wifes parents
- Not working and was never employed
- Wife is working full time in elderly care
- The grandmother is cooking
- He has time to take care of the child but doesn't – no time constraint but many friends



Need: buying cheap food and other necessities to save money and send it to his family in Eritrea
Insight: He has almost no contact with the child, he needs to prioritize food and the grandmother needs to understand how to feed the child with healthy food

- Emma, 4 years old, born in Sweden
- She is going to preschool
- Is not overweight
- She is living with her parents in one household
- Average life standard
- Likes eating selectively-foods like pasta and cany, she hates potatoes and fish
- She likes watching cartoons

Need: eating what she likes, feeling loved by parents and having power over her choices
Insight: she needs support from her parents to build her identity by using food, because that is the part of her life which she can influence the most

We met Johanna, 27 years old mother, **We were amazed to realize that** she needs better daily routine that gives her time for her personal needs. **We wonder if that means** the risk that the child could get obesity is not present enough in her thoughts.	**We met** a 45 year old father, Hagos, **We were amazed to realize that** he needs to buy cheap food and other necessities to save money and send to his family **We wonder if that means** the person buying and preparing the food are a key persons for changing food habit in a family and they need to be in agreement.	**We met** a 4 year old child, Emma, **We were amazed to realize that** she needs support from her parents to build her identity using food because that is part of her life that she can influence the most. **We wonder if this means** that the child has the strongest opinion on what to eat in the family and the least power/influence

Figure 2. PoV for the three Personas.

2.4.2 Rephrasing the challenge

In this stage the group had a task to rephrase the challenge and come up with a new point of view. Initially, there were arguments on how the network around the family can be part of the problem and in what way it should be involved in the solution. The discussion was based on the question on how narrow the PoV should be while addressing the complexity of the challenge. There were several PoVs that were too narrow and pointing more in one aspect of the problem like *"how might we make heart-shaped pasta?"*. It was then possible to define a more general PoV:*"How might we bring parents with risk-kids together with dieticians and doctors to eat and create healthier menus for different cultures"*. This PoV was presented to other members in the class. It was seen to point too much in one direction. It was encouraged to open up the PoV and widen the challenge. One good comment was that the cultural aspect was touched upon and that it was good to empathize with the parents.

The team had a chance to ideate the solution directions that addresses the three personas PoV and use the 'How might we' questions to generate questions that can result into a more general game changing solutions and grouped the themes.

From the grouping it was noted that cooperation among parents in creating healthy families might be one key to prevent child obesity and therefore the project point of view (Challenge) was reframed from:

"How to prevent Child Obesity for children from -1 to 6 years old"

to

"How might we help families to cooperate towards creating and establishing common values related to a healthy lifestyle?"

2.5 Ideating

With the new, more narrowed challenge, the project group ideated and came up with several different ideas for solutions by working with different design thinking methods. By asking "How might we…" - questions the group took the insights on the next level. It became clear that the

aim will be to find ideas which might help families to cooperate, to live a healthy life and to decide on routines which they will keep. In individual brainstorming the whole group came up with a wide scope of ideas in Image 3 - some were quite obvious ideas, some really unconventional and some were unimpressive first, but got interesting when looking closer on them.

Image 3: Group ideas on the initial solutions for the new PoV

These ideas were grouped and discussed using the How-Now- Wow matrix- and to choose ideas with a different touch as shown in Figure 5, five ideas were chosen and elaborated upon. This means also that the group had many ideas which got lost in the process, and there were different reasons for leaving these ideas behind, but mainly it was because the ideas seemed to have a very small impact, they seemed undoable or even both.

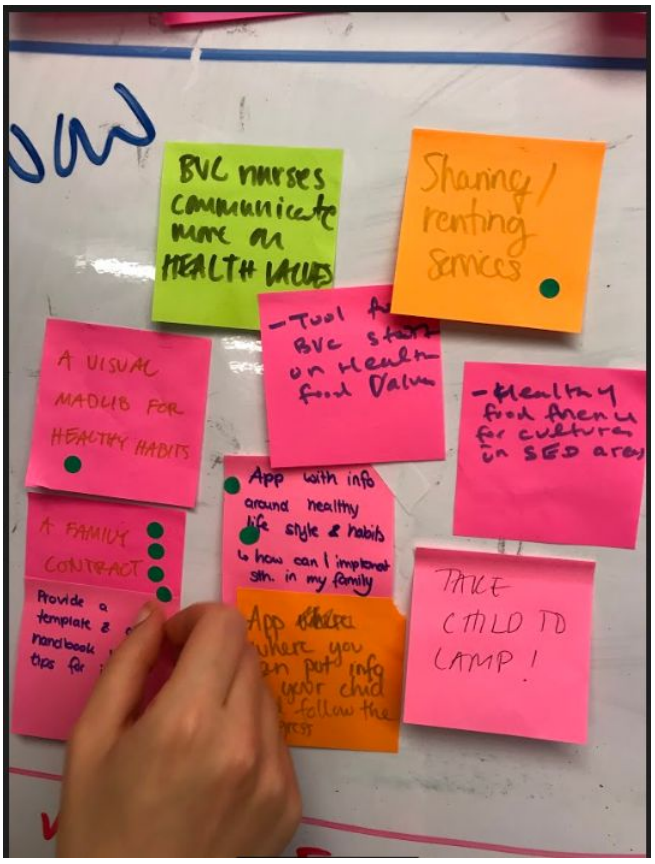


Image 4: Idea selection from one of the team members

Later the group was going deeper in the ideas which we had chosen. By walking around outside, asking questions such as “What would Catwoman do?” and starting to sketch the ideas the group got inspiration for prototyping ideas. In the following part all five ideas and pictures of the prototypes will be presented.

2.6 Prototyping

When the group had decided on the ideas to proceed with, the final work for the first phase began. In a very short time span five prototypes, one for each idea, were created. Figure 5 shows group members in action when creating the prototypes collaboratively. The ideas and prototypes will be presented below.

Image 5: Group members collaborating in creating the prototypes

2.6.1 Cheap & Healthy Food Box

One of our ideas from the ideation phase was to create a cheap and healthy “food box”. “Food boxes” which are delivered to the customers with certain recipes and food which is exactly measured for the recipes are already existing, but they are usually quite expensive. Bags of food are also already handed out by NGO’s in socially vulnerable areas. The idea is to mix these two products in a cooperation between supermarkets or food companies with some NGO to provide a very cheap food box with healthy food and healthy recipes that are made for people in socio-economically challenged areas. The foodbox could be semi-funded by public healthcare or made cheaper by including food samples to be marketed or food that are excluded because of visual defects. In the prototyping phase we were constructing a food box to get an impression of what could be inside, how it could look like and how people react to it.

Image 6: Prototype Foodbox.

Image 7: Prototype Family Contract.

2.6.2 Family Contract

Another idea is to help families outlining a family contract, by providing a guidance template. This family contract should include information around the whole family life as the social interaction with others and inside the family, conflict solving and, concerning the challenge most important agreements around food. Those are decisions around mealtimes, portion size, rules around sugar and candy or special diets. The creation of such a contract could be accompanied by a third party, for example the BVC. Especially for families with pregnant women the creation of such a contract could help to have a better start into the new situation. The contract was prototyped very generally to get feedback on the topics and see if it would generally be accepted to do a contract in a family.

2.6.3 The Game

In this game, players can create an avatar, which is based on their current life style. They can give their avatar special clothes, choose the age, how much they weigh, and how tall they are. In a next step they can include their daily food and exercise routines. Based on that the game will show the player how they are going to look in 5, 10 or 20 years, and which illnesses or problems they might be facing. After, the player can create an ideal avatar, saying how they would like to live. Based on that the game creates a new view into the future. In the end the player gets tips on what they should change in their lifestyle to come close to their ideal type. Parents could create themselves as well as their children in the game, to get a better insight in the risk of unhealthy habits but also to get rewarded for a healthy lifestyle, if they are already living it. The idea was prototyped as a storyboard showing different stages of the game.

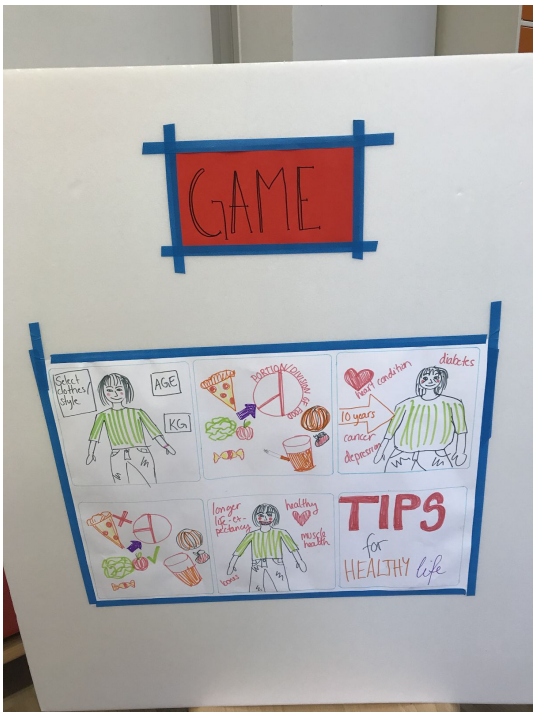


Image 8: The Game for Families Prototype.

2.6.4 Parents to Camp

This idea is about a voluntary bootcamp that pregnant families can go to, to learn about healthy habits and meet other parents. It will be organised by the Stockholm Region and spans one weekend. The bootcamp may be located on an island in the archipelago to avoid distractions. Mothers and fathers (and older children) all go to the camp together. You share and learn about how it is like to live as a family. Things like feelings, practical challenges, cooking, etc. will be discussed, explained and exercised during the weekend. All families are encouraged to meet up informally, or within the scheme of parental groupmeetings at the BVC, afterwards so the learning can be retained.

Image 9 & 10: Prototyping “Parents to Camp”.

2.6.5 Healthy Habits Madlib

The healthy habits madlib is a visual template with symbols that explain healthy habits and can be easily customised for different family contexts and cultures. Constructed as a game for

learning it is fun, simple, fast and works in all languages. The Madlib can be a tool for reflection and discussion when families are meeting their BVC nurse. All the things presented in the madlib are based on the facts from food science and sensible/practical recommendations. It can include various different tasks, games or information so it also could be used as a guide when shopping and cooking.

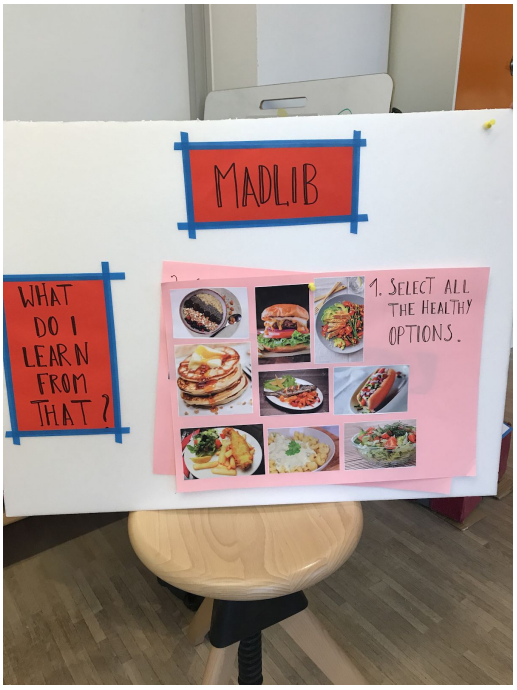


Image 11: Healthy Habits Madlib Prototype.

2.7 First phase feedback

2.7.1. Feedback from Challenge givers

The challenge givers (Stockholms läns landsting and SWElife) were given a presentation of the whole process and the 5 possible solutions. They underlined that our empathize phase gave a good picture of the problem and the stakeholders and they were impressed by our personas that grasps the complexity of the problem became evident in an easy way. They thought the personas could be useful for them in their education.

The challenge givers also liked the new point of view (PoV), especially that it was put in a positive way, “the creation of a healthy lifestyle” and that it had a link to values. They also liked that the overall aim is to change the situation before the problems occur and having an empowering stirring.

Regarding the solutions they thought all were interesting and addressed the problem in a good way, so most of the discussions were about the feasibility of the solutions.

The Family Camp were perceived as positive but hard to do in practice: cost and time needs to be considered. Who would organize and will people join? But they also thought of the possibility of making more impact, since new environment is positive for learning. The role of nature and going outside were seen as positive. We discussed if a camp would change

behavior and the possibility to move som meeting with BVC outdoors or to another environment.

The response on the madlib was that this would be an upscaling of information they already give in the BVC, but in a more fun way. But we were asked to think about the costs related to benefits and that it might be perceived as insulting.

The discussions regarding the game was if the data needed for realizing it is too complex and that this could be helped with taking it down to a simpler level of analysis. They perceived it as a fun thing but had doubts on whether it would be effective.

The healthy food box was evoking questions on infrastructure (who would distribute it and how) and also if the benefits would be worth the efforts. The solutions were also recognized as something that to some extent already exists i Göteborg. But it might give incentives to families to change their life-style.

The contract was perceived as something that would work for all, but there might be some difficulties in socially vulnerable areas. The fact that the kids are included were positive, but that the challenge givers stressed that economy should be included, that follow-up is important and that it should be introduced before pregnancy.

2.7.2. Other feedback

When the solutions were presented to the class and to coaches, the feedback was that we should not forget the cultural aspect, maybe take a look at the opposite problem (like anorexia) and se how similar solutions work there.

3. Second Phase

In the second phase the group evaluated the ideas and choose one idea and redefine it to develop and test. In one sense the same process is done one more time all over again but with a less wider scope and more integrated.

3.1 Evaluation of previous Ideas

Among the five different solution ideas that were developed in phase one of the design thinking process, second phase required us to narrow them down, ending up with only one solution. Based on feedback and a thorough discussion, we wanted to combine ideas and develop a new solution. However, we were advised by coaches against combination and instead focus on one selected idea to avoid complexity. Thus, we decided to eventually eliminate all of our lovely solutions and save one!

Towards this end of 'kill all-save one', we used a decision matrix, that was presented in the course. Using this matrix, one can take decisions based on the rating and scoring of different criteria and compare the different choices based on these criteria. Briefly, we listed the evaluation criteria appropriate to our challenge and then reduced the list of criteria to nine those that we believe are most important through brainstorming. Based on team discussion and consensus, we assigned a relative weight to each criterion taking into account how important that criterion would be to the challenge (from 1-3, 1=least important, 3= highly important). In order to evaluate each solution against the criteria, we established a rating scale for each criterion as: 1, 2, 3 (1 = slight extent, 2 = some extent, 3 = great extent).

We created our matrix by determining a criterion to rank our solutions, followed by choosing a weight (importance) for each of the criteria (1-3). Furthermore, for each solution, we assigned a score using each of the criteria as shown in Table 1.

Table 1. Decision matrix.

Criteria	Weight	Parents to Camp	Cheap and Healthy Food Box	Family Contract	Healthy Habits Madlib	The Game
Costs	2	2	1	3	3	2
Scale	1	2	1	3	3	3
Effect	1	3	3	2	1	2
Easy to Implement	2	1	1	2	1	0
Wow	2	1	1	2	1	3
Inclusiveness	1	1	2	3	2	2
Realistic	3	2	1	3	2	1
Spot on	1	3	2	3	1	2
Total (sum of weight*score)		23	17	**34**	23	22

From the table above, family contract appeared a clear winner. Thus, we decided to further work on Family Contract as a final solution to be delivered at the end of phase two.

3.2 Re-empathizing

Emphasizing in the second stage was done with the facebook group of parents with overweight children, role playing with the personas and literature review. The following question was posted in the facebook group: "*Would you have been helped by early support (before the birth of the child) to create a good cooperation in the family (regardless of how it looks) around healthy habits and lifestyle?*". It was noted from the responses that the question was to some extent misunderstood, and also some of the parents got upset by it, although it was possible to discuss with the respondents and explain further.

The upset reactions made it clear that however you approach the group with a solution, some parents might find it blaming and stigmatizing. In this case the reaction was (for some) that the assumption is that the child is overweight because the family is dysfunctional. But we got several reactions that this kind of help is something that all parents would need. The conclusions of the empathizing in the facebook group was:

(i) The contract should not be launched as a preventive solution for child obesity. The name for the contract should have rhetoric that it is about health in a wider sense to avoid stigmatizing and blaming the parents to obese children that they have the wrong lifestyle.

(ii) The contract could be helpful for all parents and should be launched for everyone.

In the role playing with personas, the team members had to play as Hagos and Johanna while other members were observing the reactions. It was noted that:

(i) Hagos will like the idea of Family contract as long as he can save some money to send back to his family.

(ii) Children will like the rewarding feature and should be added to the solution.

The group members had a chance to read and find out existing contracts to find out features that can be included in the Family contract. It was noted that;

(i) The contracts in the literature were perceived as boring and bureaucratic.

(ii) Most of the contracts were legal contracts with signatures at the end.

However, a useful platform to develop a Family contract was found ("Mediennutzungsvertrag" (https://www.mediennutzungsvertrag.de/). In this case an idea that the families can be provided with a platform with tips on how to create their own contracts envolved.It was also noted that the Family Contract solution should be different from the existing contracts in the literature.

3.3 Re-defining and re-ideating

In the redefining phase the group looked into strengths and weaknesses of the selected solution to see what should be emphasized in the final prototype. The group stated that the strengths (see Figure 8) of contract are that it is easy to share with the focus group either as an application or in a written form, it is dynamic in the sense that it is convertible according to individual situations and overtime, it could be perceived as empowering, rational and a

helping-hand. Moreover, it is inclusive for different cultures. The contract was also targeting many background factors linked to child obesity. Furthermore, the contract could be easily gameficated. The weaknesses listed were, contract is an overall solution trying to target many areas and it was still very unclear and undefined. After this the group went into a process where we defined the features that we would like to see in the solution and that would cover the strengths and help solve the weaknesses.

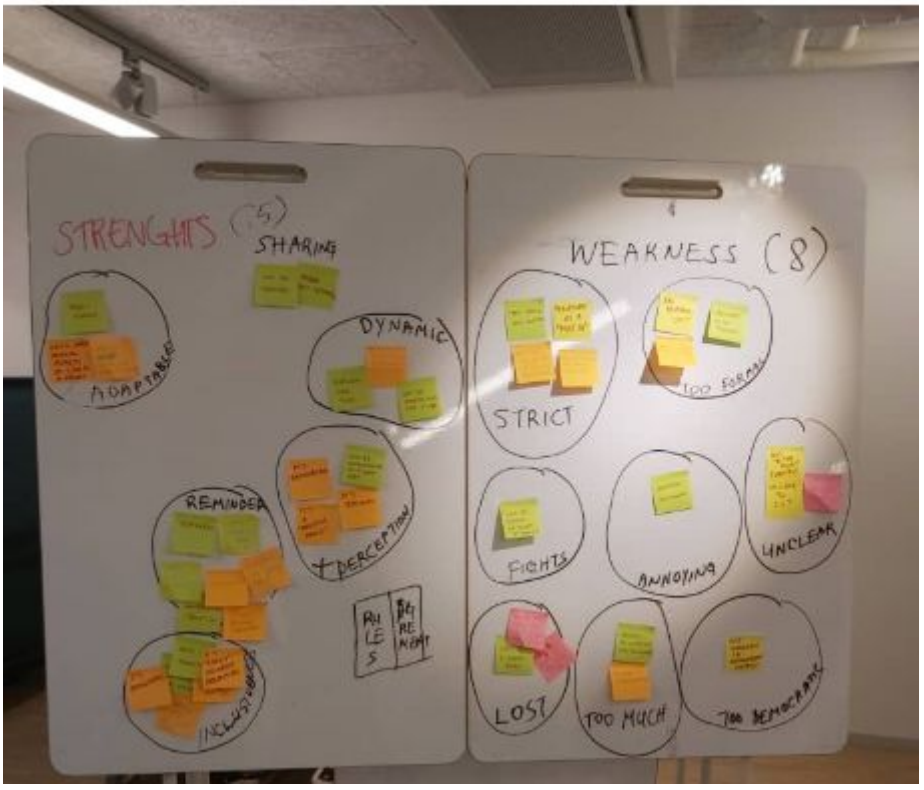


Image 12: Group ideas on the strengths and weakness of the Family Contract Solution

The group decided that the contract should entail some sort of tool which would give feedback on decisions, which could be for instance based on statistics of other users, a guideline or a game. Furthermore, a library of rules could give tips of rules that support establishing a healthy lifestyle inside the family. We discussed that an overall evaluation of a family's contract should be made either by professionals for example nurses at the BVC or by AI technology. A personalization within the platform should be possible for the users, meaning for instance, adding your own picture or selecting your own themes. The group discussed that features including reminders of revising the contract and rewards of following the contract should be incorporated. The group also reflected on combining the game from the previous round to the final solution. However, at the end it was perceived as "too much" and to mess with the core idea of the contract. Furthermore, the team elaborated that using AI as an evaluation tool for the content of each individual contract would be complicated, since the content or rules would be written in different forms and the AI had to take into account different background factors for instance cultures. At this stage, it was perceived as too complex, but as something that could be taken into consideration in the future. The comparison to other users' contracts would require the implementing group or organization to dig deeper into data protection laws. Comparison or competition was also seen by some group members as rather discouraging than empowering.

After some more considerations we came to the conclusion that one prerequisite for the contract is that it should entail guidelines and recommendations and information for the users to make healthy choices even without any previous knowledge. Thus, it was seen as crucial to incorporate recommendations and guidelines that are scientifically proven and accepted by a

broad range of experts. One of the central strengths and weaknesses of the solution was that it is addressing many causes linked to child obesity, not only food and nutrition. This could blur the connection between the solution and the problem, however, the team agreed that addressing only one part of the many reasons underlying is merely enough. This could lead to oversimplification and thus, decreasing the effectiveness. By addressing several areas, there is also a benefit to other factors of well-being and health in the family. On the other hand, it should be made sure that the core problem addressed does not fade out of focus.

After identifying a framework of content for family contract, we moved on to ideation towards something that could be developed into a testable prototype. We started with ideation of the name for the solution as the term 'contract' might have some negative impact on our target users perception of the solution without going into the content. Each member came with multiple alternative names and we selected 'We are Family'.

We went through each of the "We are Family" features and looked as to whether feedback/evaluation could be doable. Accordingly, we decided to avoid having feedback on decisions and also not to include an extra tool for day-to-day decisions.

Regarding specific rules the family chose to implement from the library of rules, some kind of reminder tool would be of great help towards implementing and following up their progress. Thus, we decided to include reminder feature via messaging/email. The same strategy of reminder would be helpful for self-evaluation and consequent revision of the agreed upon terms in the WAF.

After having all those ideas on the table it was very hard to narrow the ideas down again, to come up with one prototype for testing. Therefore, we discussed every single idea, decided upon the pros and cons of for example suggesting rules to the families. After those discussions it was clear that the final solution should include the following aspects:

a) Guidelines of how to use it
b) Seven fields on which the family should discuss and agree on
c) Library of rules
d) Different Language options
e) Option for a reminder

The seven fields on which the family should discuss and agree on are:

1. Food
2. Behavior
3. Sleep
4. Decision Making
5. Division of tasks
6. Economy

The group agreed that in the Guidelines and the Library of Rules will be sections with information and assistance to make decisions for each of the eight fields which are mentioned above. Thereby, it will be tried to help the families making decisions which are fostering a healthy and happy lifestyle.

3.5 Creating the final solution

3.5.1 Coming up with a prototype

In a next step the group discussed how a prototype should look like. Based on the decisions about the features of the solution it became clear that the final solution should be digital, as an App or a Website. Nevertheless, we wanted to avoid going in the “App-trap” and hence, being quite precise and clear about the solution.

Further, the group saw the possibility of making use of the title “We are Family” also in other sections of the prototype. That is why the sections got names as for example “We eat!” to bring it all in a common format and make the whole idea less abstract and more directed to the users.

We were proceeding in the creation of a prototype by sketching our individual ideas of how the prototype could look like on paper. It soon became clear, that every idea had something we wanted to keep for the final prototype and there were many similarities, which meant we had a common understanding of what we were aiming for.

The group has also agreed on the necessity of a short elevator pitch for the explanation of the whole concept. The final elevator pitch is:

We are Family is a tool that provides you with tips and tricks to cooperate towards a happy and healthy family.

3.5.2 The Prototype

In the end, the group created a prototype, which was later used for testing. The prototype was created in PowerPoint and it was kept simple, to get feedback on the general idea and the content instead of the design in the testing phase.

Image 13: Prototype Start Page.

In picture 10 you can see the start page of the prototype. On the left top of the start page you can see a picture of the family which is using the tool. This is aiming to make the whole tool personal to engage the family in it as much as possible. The round symbols on the right of the start page are different features which the family can use. The *library of rules* is providing tips for rules for every section on which the family could agree on. The *library of rewards* is offering ideas of rewarding structures which can be included in the family's decisions. It is important to mention that the library of rewards is explicitly avoiding food as a tool to rewards and suggests rewards which are in line with the aim to make the family happy and healthy, as for example common activities. In the feature called *"We agreed!"* will be explained in image 15. The *settings* are mainly important because they contain the option of choosing different languages, which makes the tool adaptable to different cultural backgrounds and therefore, it is more inclusive.

The round symbols in the middle of the start page can be clicked and new pages will open. The symbols stand for different sections on which the family can or should agree on, when they are using this tool. In the section "We eat" the family should agree on several aspects around healthy food and eating, the section "We sleep" is covering everything around sleep, as who takes care of infant during nighttime, bedtimes and times to awake and get up. "We behave" is meant to be the section in which the family decides on social behavior within and without the family, for everyday and conflict situations. In the section "We decide" the family should agree on how they come to decision in everyday life situations and in "Our economy" the family agrees on financial issues. Since one common point to discuss is the division of tasks in a family, the section "Our tasks" is there for agreeing on a fair division of tasks and finally in the section "We move" the family can agree on their exercisis, which is important because even though food is the main reason for child obesity, exercising is part of a healthy lifestyle in general.

Image 14: Prototype of the "We eat!" section.

As explained above the "We eat" section, which is shown in image 14, is about healthy food and eating in general. We took this section as an example for all the sections in the prototype. On top a short introduction sentence is explaining what the section is about. Below the family can write their own decisions which they have made on this section. Because the tool also wants to include the children as much as possible every decision is marked with a visual

symbol as the apple or the cake in the example. The buttons for the *Library of rules* and the *Facts* are clickable and lead directly to the tips and information about the respective section. To include children even more in the whole process, the facts section will include also visual information.

Image 15. Prototype of the “We agreed!” section.

When the families have agreed on decisions in the sections they can be found in the “We agreed!” feature, which can be seen in image 15. In this feature all the decisions can also be printed and the family can activate a reminder, which helps them to continue with the decisions, bring them in action and rewrite the decisions if necessary.

3.6 Testing the solution

Testing the prototype was done on two separate occasions. Three people from the group went to BVC Hallunda to test the solution with users and two to RISE to get more feedback from professionals. BVC Hallunda was chosen as a testing site because of previous contact to the nurses and most importantly because there the group was more likely to test the prototype with users that belong to the risk group for child obesity. At BVC Hallunda the group met 8 parents from several different countries. The feedback on the solution was mixed. Many of the parents viewed the solution as not needed in their family. For instance, a 32 year-old Russian woman said:

“I make my rules so why would I need a tool? I already cook healthy food in my opinion.”

and a 30 year-old woman from the middle east said, that:

“For my husband this would be good but I don’t really need it. My husband doesn’t know how to plan family activities and he is a bit lazy with the kids and cooking. I would forget this quite easy myself.”

Similar feedback was given by around half of the interviewees. The main messages from this type of feedback was that people did not understand why they would need a cooperation tool for their family as they already knew how to work within their own family. The impression was that interviewees became quite offensive while explaining the tool. Although, the reference to

child obesity was not made by the group directly, the reactions followed the same pattern as what was described in the interviews with the nurses and the literature; child obesity and family issues are a sensitive and private topic.

More positive feedback was also given. Many interviewees overall were intrigued with the solution. These people also had their own suggestions for the improvements of the solution. Parents wanted to add for example, a calender or timetable, a task option for the kids, leisure or fun things to plan for the family, and a feature for cooperation with people outside the family. Other insights were, that in at least three families' the husband was the main person taking care of the economy of the family and in two of the families' the husband was doing the grocery shopping. Also, the facts section and guidelines around healthy food was liked by an interviewee and she also mentioned that being overweight is seen as a good thing in some cultures.

There was a range of feedback from the experts at RISE. A feature to help parenting was suggested as there is a clear demand from parents to help them be good parents and how they can behave differently in child raising situations. Also, comments were made about the missing feedback option and that it would be good for users to know whether they have succeeded. Furthermore, there was discussion about apps and websites being boring and whether the solution could be robosized.

4. Conclusion

Five team members, four months of work, three (hundred) Post-Its, two phases of the double-diamond and one final solution - the design-thinking process about preventing child obesity, described in a few numbers. While in the beginning the whole group was thrown into cold water, neither we knew much about obesity in general, not talking about child obesity in particular, nor did we know much about the design-thinking method. But the group has learned to swim.

By reading research literature, talking to the challenge givers, going out on the street, looking in a facebook-group and interviewing BVC nurses the group gained a deeper understanding of the problem and made it to the own problem. Long discussions and full whiteboards are symptoms of the high complexity of the topic and the huge variety of paths which were open in the beginning. During the process the ideas were narrowed down and open up again, just as the design-thinking double-diamond. After the first phase, the group had to choose to go further in the second phase with one of the created prototypes. There were ideas of combining one solution with another one, ideas were collected, evaluated and left-behind. The solution which was chosen to continue with, the Family Contract, was developed further by clarifying the core idea, adding features, eliminating unnecessary ideas and getting concrete with the content. And so "We are Family!" was created and tested. The testing will continue until the final presentation of the course and it might still modify the final solution.

With "We are Family!" we defined a solution which is way more than a tool for preventing child obesity. It is a tool to bring families closer to getter, making their life easier and help to live a healthy and happy life together. It is a tool which is considering the complexity and the sensitivity of the topic as well as the needs of parents and children for more information, guidance and structure. It is a tool which provides you with tips and tricks to cooperate towards a happy and healthy family!

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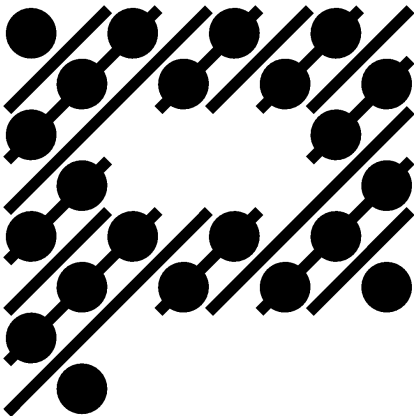
Preventing child obesity



In the autumn of 2019 SWElife and Region Stockholm presented the challenge to prevent child obesity from -1 to 6 years old to our group at the master's course at Openlab. The complex problem of obesity is well suited for the design-thinking method taught at Openlab.

In this report, our group presents a solution that could be useful for all families and at the same time help them prevent obesity. "We are family" is a tool that provides you with tips and tricks to cooperate towards a happy and healthy family.

The solution is supposed to be a brickstone to achieve the overall goal of zero obesity at school start in Stockholm by 2030.

OPENLAB

SWElife

Region Stockholm

Openlab is a creative centre that provides opportunities for finding solutions to challenges in society. In cooperation with our partners and other actors, we create proposals for innovative solutions for the Stockholm region. We do this across the lines between different disciplines and professions. The reports from Openlab are results from students interdisciplinary cooperation within the framework of a 15 ECTS master course.