

## REGULAR ARTICLE

# 'Now she prefers jeans, like everyone else...' – Parents' experiences of group- and web-based treatment of children's obesity

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## Abstract

**Aim:** Web-based interventions have shown promising results in paediatric obesity treatment with the potential to increase coverage of care. This study aimed to explore parental experiences about participating in an intervention to improve healthy behaviours and lower BMI-SDS in children with obesity.

**Methods:** This was an interview study with an inductive qualitative approach. Data were collected from individual interviews with 14 parents of 5- to 13-year-old children with obesity. The respondents had participated in a family-based treatment intervention consisting of four group sessions followed by 12-week web-based support. The interviews were analysed using qualitative manifest and latent content.

**Results:** The overarching theme 'A transformative journey of lifestyle changes for the whole family' described how the participation impacted the lifestyle of the whole family. Four categories: parental awareness, introducing new routines, negotiating family battles and a feeling of support, represented various experiences made by respondents. The parents shared predominantly positive experiences of the intervention but also expressed feelings of guilt and struggled to address their child's obesity.

**Conclusion:** Parents who participated in a study for children with obesity with a web-based component found the programme helpful for achieving healthier lifestyles for the whole family.

## KEYWORDS

children, obesity, parental role, qualitative, web-based treatment

## 1 | BACKGROUND

The prevalence of childhood overweight and obesity is rising at an alarming rate, and the World Health Organization (WHO) estimated in 2016 that more than 330 million school-age children and teenagers are affected worldwide.<sup>1,2</sup> In Sweden, about 17% of children 6–9 years old have overweight, and another 5%–6%

have obesity.<sup>3</sup> Children with obesity have an increased risk of remaining obese as adults with several health consequences, such as heart disease, hypertension, type 2 diabetes, fatty liver disease, cancer and increased risk of social and psychological problems.<sup>4,5</sup> Therefore, prevention and treatment of obesity in children are essential to improve health and avoid obesity-related complications later in life.<sup>6</sup>

**Abbreviations:** BMI, Body mass index; BMI-SDS, Body mass index standard deviation score; Web-COP, Web Childhood Obesity Prevention; IOTF, International Obesity Task Force.

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Parents are key players in preventing childhood obesity and have a pivotal role in treatment.<sup>7</sup> Further, the importance of engaging and supporting parents as part of a multi-level approach to encourage healthy lifestyle behaviours and healthy weight in children has been described.<sup>8</sup> Acting both as providers and role models, parents shape children's food behaviour and opportunities to be active.<sup>9</sup> Behavioural family lifestyle intervention programmes, including dietary and physical activity advice, are the internationally recommended treatment for childhood obesity. For children under 12 years of age, family-based treatment is suggested.<sup>10,11</sup>

Web-based interventions, defined as programmes delivered through an Internet platform to promote changes in various health-related behaviours, have shown promising results.<sup>12,13</sup> Hamel et al.<sup>14</sup> showed, in a systematic review of 15 articles, that computer and web-based interventions improved eating behaviour and diet-related physical outcomes among children. Internet-based individually tailored or personalised feedback were suggested as a useful approach for promoting desirable lifestyle changes.<sup>14</sup> In a randomised study performed in northern Sweden over a decade ago, a 1-year intervention lifestyle intervention had an Internet-based follow-up. However, Waling et al. concluded that the families seemed not comfortable with the web-based part of the programme, and utilisation was low.<sup>15</sup> Tripicchio et al., in a non-randomised study of three groups of children age 2–18 years, compared treatment with or without the addition of technology components to family-based treatment. The authors showed that technology adjuncts were feasible and promising for improving weight status in paediatric obesity treatment with the potential to reach children from socio-economic less privileged groups.<sup>16</sup> A review aiming to evaluate game-based interventions showed a significant but small reduction of children and adolescents' BMI in the ten included RCT studies.<sup>17</sup>

A qualitative study of parents' experiences of childhood obesity treatment stated a lack of support during outpatient treatment. Parents also said that members of their extended family often failed to support lifestyle changes.<sup>18</sup> Further, it has been suggested that treatment should engage the children and discuss the family's goals and concerns,<sup>19</sup> parental awareness about their child's weight status and educate the family regarding the health risks associated with childhood obesity.<sup>20</sup> Children with obesity are vulnerable to stigma, and weight stigma is primarily expressed as weight-based teasing and bullying in school or home. It has been described that feeling stigmatised can reduce the likelihood of returning for future health care visits, and the importance of a non-stigmatising healthcare approach has been highlighted.<sup>21,22</sup>

In summary, there is evidence that family-based treatments should be the basis for obesity treatment of children, and studies indicate that web-based treatments may be effective. However, there is scant knowledge of parents' experiences and engagement of childhood obesity treatment that use web-based treatment modules. This qualitative study aimed to explore parental experiences about participating in an intervention, the Web Childhood Obesity Prevention (Web-COP) study,<sup>23</sup> to improve healthy behaviours and lowering BMI-SDS in children with obesity.

## Key Notes

- Parental experiences of web-based care for childhood obesity have not been extensively studied, and previous results are inconclusive.
- We report that the parents found the family-based treatment programme with a web-based component helpful, but the parents also shared their challenges of making sustainable lifestyle changes.
- Parents have a pivotal role in treating childhood obesity, and their experiences are important to investigate, especially when new technology is introduced.

## 2 | METHODS

### 2.1 | Study design

An interview study with an inductive qualitative approach was performed. Data were collected through individual interviews with parents to children with obesity who had participated in an intervention where group sessions were followed by a web-based support.

### 2.2 | Setting, recruitment, and study sample

The intervention included parents and their children 5–13 years of age with obesity as defined by the International Obesity Task Force.<sup>24</sup> The Web-COP intervention aimed at promoting lifestyle changes that would decrease the child's degree of obesity and is described in detail elsewhere.<sup>23</sup> Briefly, the intervention was inspired by social cognitive theory.<sup>25</sup> It included four weekly group sessions at the clinic comprising short lectures, peer support and interactive group discussions and activities for parents and children to influence social learning and altering behaviours. The group sessions were followed by a 12-week web-based programme targeting both parents and children. The device-friendly web-based programme contained weekly modules covering issues on basic nutrition information, goal setting and the importance of exercise. Gamification and practical advice, like recipes for cooking, were included in the web-based programme to stimulate participation. The majority of parents used the web-based weekly coaching modules. All families also received Physical Activity on Prescription (PAP), which enabled them to join free activities at local providers.<sup>23</sup> In summary, 28 of 51 children and at least one parent participated in all the four educational group sessions. All families registered in the web-based programme, and 42/51 (82.4%) children lowered their BMI-SDS during the intervention period.<sup>23</sup>

## 2.3 | Participants

Parents were informed about and invited to the post-intervention interviews at the group sessions. Thirty-five of the 51 families were invited to an interview. The remaining families had not completed the intervention when the interviews were conducted. Of the invited 35 families, 16 parents indicated an interest in participating and were contacted for further information by telephone (AT), and 14 decided to partake. Parents could choose a time most convenient for them for the interview.

## 2.4 | Data collection

A semi-structured interview guide was developed by MP and AT based on clinical experience and literature. An overview of topics included in the interview guide is presented in Table 1, and probing questions were posed as to further explore participants' experiences.

All interviews were performed between February and April 2019 and in privacy at the largest hospital in the catchment region. The interviews were conducted 2–4 months after the study finished, which corresponds to 8–10 months from the start of the study. We included participants until no major new information emerged in the interviews to secure data saturation.

Before the interview, the parent was reminded of confidentiality and gave permission to digitally record the interview. No child was present at the interviews. The first three interviews were held by two researchers (AT and MP) and the remaining by AT. Probing questions were used to clarify and explore their experiences further. The interviews lasted 30–60 min. The interviews were thereafter transcribed verbatim. After the 14 interviews, it was concluded that no major new information emerged in the last interviews; thus, there was no need for additional recruitment to secure data saturation. Each parent received a movie ticket voucher as a gift after the interview was completed.

## 2.5 | Data analysis

The interviews were analysed using inductive manifest and latent qualitative content analysis, as described by Graneheim, et al.<sup>26</sup>; a method that focuses on the subject and its context, highlighting differences between and similarities within codes and categories. The

TABLE 1 Overview of topics included in interview guide

- Reasons for joining the study<sup>a</sup>
- Experiences and perceptions made regarding<sup>a</sup>
  - Group sessions
  - Web-based follow-up coaching programme
- Experiences made during the intervention<sup>a</sup>
- Experiences made after the completion of the intervention<sup>a</sup>

<sup>a</sup>Probing questions such as 'Can you please explain ...', 'Can you please provide an example...' etc. were asked for all topics to expand and explain the experiences further.

analysis comprises a stepwise and systematic process where codes, subcategories and categories are identified.<sup>26</sup>

First, each transcript was read and reread to gain an overall understanding of the parents' experiences. The text was broken down into meaning units and condensed meaning units addressing the aim and, thereafter, labelled with codes. This process was performed by two authors (AT and MP) separately, and emerging codes were discussed to reach consensus throughout the analysis process. Next, similar codes were grouped based on shared content and sorted into subcategories. Subcategories, according to Graneheim & Lundman,<sup>26</sup> can be described as groups of content that share a commonality. Thereafter, subcategories were sorted into categories with subcategories and categories illustrating what the data talk about. Finally, an overarching theme emerged linking the categories and expressing the data's latent content, that is the interpreted meaning running through the data.<sup>26</sup> During the analysis, all authors provided input on the findings to secure the trustworthiness of the findings.

## 2.6 | Ethics

The Web-COP study was approved by the Ethics Board at Umeå University (Dnr 2018-113-31M, Dnr 2018-461-32M). All parents in the Web-COP study were given oral and written information about the purpose of the interview study, and a signed consent was obtained before the interviews. The oral information was given to all parents by the same researcher (AT) at one of the group sessions, and information was also provided by the nurse at the clinic.

## 3 | RESULTS

The final study sample was 14 parents (twelve mothers and two fathers) to six boys and nine girls (two siblings) from 14 different families. The topic of obesity was highly familiar to all respondents. Many parents revealed their personal struggle with obesity and how that had affected them, both as children and grown-ups. Some expressed concerns regarding their children's behaviours around food and eating because they could relate to similar behaviours from their own childhood. Several parents thought that they had good knowledge about unhealthy and healthy diet, as some had previously participated in weight loss programmes for adults. There were also parents who had undergone obesity surgery. One driving force put forward by the interviewed parents was to make changes for their children as the parents expressed how they themselves had been bullied or had suffered due to childhood obesity. The parents did not want their children to have similar experiences. Making the changes now would be beneficial, proactive and protective not only for the child but also aid other family members.

Theme—A transformative journey of lifestyle changes for the whole family

The overarching theme illustrated how parents of children with obesity experienced their participation in the Web-COP

intervention. The participation had improved the health lifestyle in most families, but changes also led to new challenges and relapses to previous habits. The theme comprised of four categories with two to four corresponding subcategories, respectively, reflecting various aspects revealed by the parents. An overview of the findings is seen in Table 2, and included categories and subcategories are presented below. Citations (in italics) further exemplify the parents' experiences.

### 3.1 | Parental awareness of needs for change

This category was made up by two subcategories: *Acknowledge the obvious obesity problem* and *Have positive expectations of the intervention* which summarised various aspects of parents' awareness, hopes and concerns regarding their child's obesity.

#### 3.1.1 | Acknowledge the obvious obesity problem

Most parents expressed awareness and concern of their child's obesity problem, and some parents had actively tried to find various options to help their child. A few had also participated in previous weight management support with little success. As the weight of the child was increasing, the parents experienced the situation slipping out of their hands and was not manageable by them any longer:

He gained so much weight, almost 10 kilos in less than one year, it was awful. The skin on his stomach cracked, and I just felt "Help, what should I do?".

(IP5)

However, some participants also revealed that they found the child's obesity problem to some extent caused by them as parents, which left them with feelings of shame and self-blame. Parents expressed that they saw themselves as role models and, therefore, responsible for the children's lifestyle, and now they had failed.

It (children's overweight) is almost a little shameful for many parents. We know what the problem is, and it is us, not the children.

(IP4)

Also, some families had been contacted by the school nurse about the child's weight. Parents mostly stated that the school nurse was helpful through regular contacts aiming to help them manage obesity. However, some thought that the information provided from the school nurse was insufficient and unsupportive. At times, the school nurse had assured the worrying parents that the observed child obesity could be temporary and would diminish over time.

The school nurse said: it is not a problem; she will grow into it (the body). Then I got a little sad; we were motivated (to make changes). What a dumbass!

(IP9)

#### 3.1.2 | Have positive expectations of the intervention

Several parents expressed how they felt relieved and encouraged when the family was invited to the Web-COP study. The enrolment increased their motivation to promote a healthy lifestyle for their children and families. They also expressed their appreciation of the intervention being free of charge. Likewise, the free periodical gym membership for the family was regarded as a positive option, and some parents revealed that financial hardship was a barrier to improve the family lifestyle.

It (gym membership) costs 1 000 SEK for six months. Therefore, we have waited: Just the fact that we got one for four months, it was good!

(IP 18)

Parents described that they had been looking forward to meeting other parents in similar situations and get extended support through

TABLE 2 Theme, categories and subcategories

Theme	Categories	Subcategories
A transformative journey of lifestyle changes for the whole family	Parental awareness of needs for change	Acknowledgement the obvious obesity problem Have positive expectations of the intervention
	Introducing new routines	Adopt new ways of cooking and exercise Observe increased self-esteem
	Family mission with some battles	Support from family and others Negotiate habits of family, siblings and friends
	Feelings of more or less support	Engage in group sessions Take on the web support Clash with school meals Involve extended family and friends

the programme. Also, many parents described that their children were positive to the intervention and showed interest to meet peers in a similar situation. Several parents emphasised the opportunity to further increase their knowledge and obtain tools to promote health behaviour changes. They described how they hoped that the programme would influence and aid them to support their child's eating behaviours and physical activity.

I have been nagging..... If someone else says the same things, maybe one [the child] listens.

(IP1)

He may be inspired by the fact that other children and young people are participating and maybe makes new friends who are in the same situation.

(IP1)

### 3.2 | Introducing new routines

This category comprised of two subcategories: *Adopt new ways of cooking and exercise* and *Observe increased self-esteem*. The subcategories described various parental experiences of introducing new routines in the family regarding a healthier lifestyle as a result of the intervention.

#### 3.2.1 | Adopt new ways of cooking and exercise

All parents thought that the programme had supported them to initiate new routines and to make healthier food choices at home. Advice on regular meal arrangements and appropriate portion sizes was adapted by many families. Reducing sweet cereals, choosing natural yoghurt instead of sweetened and offering less candy on weekends were some of the new routines that were mentioned. The intervention programme's content provided new eye-opening knowledge for parents which they also saw had impact on their child. Many parents described their efforts to involve the child in the new routines. The parents reported that they had started shopping for food together with their child, making efforts to find healthy alternatives together by reading the table of contents as they had been introduced to in the programme. Some children had stopped eating candy completely, and parents noted that the programme's information had been integrated with the child.

Parent: He was not allowed to have more than 11 pieces [of candy] when we bought candy on Saturday. So, I said: Yeah, I'm 52 years old, that means I can have 52 pieces. And he responded: "No, that's not what they [group session leaders] said".

(IP4)

He understands himself, that's what is so wonderful. She (the dietician) explained it so easy: your fist [size]

of meat or fish, one fist of potatoes or pasta... It's so very easy for him to do it by himself, even at school.

According to the parents, most children were positive about new routines of regular physical activity after the initial group sessions. The broad selection of choices that came with the gym membership made it easy to find activities that stimulated the child's motivation. The older children liked the gym, and the younger often preferred swimming. Many parents expressed that their child found being active as fun nowadays and also, a means to meet other children and engage with them.

He has begun to work out regularly. That's a big deal. I don't have to nag, he is doing it by himself.

(IP1)

Another aspect mentioned was that the Physical Activity on Prescription which was viewed as a good opportunity for the child to be more active, but also motivated the family to exercise.

However, the gym membership opportunity was not used in all families. Some children choose other options, and for some, the fitness centre was too far away. Depending on season, other activities were mentioned. Some children went for walks; others had an exercise machine at home or were playing outdoors. But some parents found it challenging to motivate their children to play outdoors or be active. Children's lack of interest in physical activities or being largely immersed in gaming, watching mobile or television were challenges these parents had to face.

Parents described how their daily routine and eating pattern had changed during and after the intervention. Some examples mentioned were eating breakfast regularly and providing regular meals for the family. Many families had increased the amount of vegetables and tried new sorts. Some had introduced water as a mealtime drink and encouraged their child to drink more water between meals, especially if hungry before meal. Another healthier habit that many parents described was the increased amount of whole grains, where they had switched to whole grain versions of products that they already consumed.

We replaced all white bread, we basically stopped eating bread. She ate a lot of quark and sour milk for her evening snacks. We removed the cereals that were not good. Those were left for Dad to eat.

(IP7)

Many parents described making changes in physical activity both for the child and the family. Increased time spent outdoors, more activities together and limiting screen time were common lifestyle changes. One parent said that the whole family had started swimming together on regular basis, another described regular joint family activities outside. The majority of parents used the Physical Activity on Prescription they received in the programme and said that it worked both as a motivator and a start-up. Many parents worked out together with their child, and a lot of the younger children use the prescription to visit an indoor bath. Some introduced a new routine

by setting a screen time allowance and some used screen time as a reward after physical activity or spending time outside. Many parents who started to work out with their children during the intervention continued when the prescription and the gym membership related to the programme ended.

When Physical Activity on Prescription ended, I bought a membership at the gym and then we bought a membership for my daughter there as well.

(IP 18)

### 3.2.2 | Observe increased self-esteem

Several parents mentioned an improved self-esteem of their child as an important outcome of the intervention. They described how their children were inquisitive about how to live healthier and proud of the changes they had made, which had resulted in weight loss and improved well-being. Parents experienced that the programme had not shamed or blamed the child and that treating the child respectfully was part of the success. Improved self-esteem and passing like others when, for example, shopping for clothes were also mentioned by the parents, as well as improved sleep which contributed to more energy and stamina.

Previously she wore tights with an elastic waist. Now, of course, she prefers jeans, like everyone else has.

(IP13)

We talk a lot around the table at home. We talk a lot about food, that we should eat what makes us fit and strong. We never talk about obesity or overweight

(IP13)

### 3.3 | Family mission with some battles

The two subcategories supporting this category was *Support from family and others* and *Negotiate habits of siblings and friends*, and they described the cooperation between parents and children and related challenges in changing lifestyle.

#### 3.3.1 | Support from family and others

The programme contributed to positive outcomes for the whole family. Making new healthy food choices and having a more active leisure time involved both parents and siblings, not only the child with obesity. Parents noticed that as they themselves changed behaviours, it also had impacts on the children.

Children don't do as you say, they do as you do.

(IP4)

We limited screen time and then the children found something else to do, suddenly they started to be physically active.

(IP12)

All parents expressed a desire for continued support. Many felt that the intervention and its support was too short, and they wished for a continued programme for themselves as parents and their children. Parents highlighted the importance of feeling supported and having a sense of belonging to the group in the process of changing behaviours. However, the wishes for more support diverged. Some wanted a single group session after the web-based programme to sum up the programme, while others preferred a prolonged and extensive support through the web-programme, access to a coach and more group sessions during the following year.

I would have liked more meetings. More pushing.

(IP17)

You need reminders, especially if you want to change something.

(IP1)

#### 3.3.2 | Negotiate habits of family, siblings, and friends

Some parents highlighted the difficulty with food temptations; the children with obesity wanted to eat the same food and snacks as their friends. At times, the parents felt guilty about treating the child differently compared to friends or siblings because of the child's obesity. Also, the parents were aware that the child could be in situations parents had no impact over. One father said that he did not want to put blame on his son for making bad choices, but just nudged him to make better choices and consider the consequences:

There are always these temptations and they are friends and they like to go out and have burgers and that, yes, so it is so obvious that he is exposed to things that I cannot influence.

(IP1)

Even when the children participated in physical activities, there were temptations to manage. Many parents expressed a wish for healthier food options when visiting different sports arenas. For example, downhill skiing was mentioned as a challenge as the cafeteria only served unhealthy food.

I've said maybe you should be selling fruit here, because they don't, it's strips and sweets.

(IP9)

However, not all family members were eager to integrate new habits. Some mothers revealed that the husband or partner, or siblings, could comment or be reluctant to try the new food. At first, there was a fight to introduce new preferences, but after a while and by being persistent, things got easier and the changes were made within the families. Parents noted that it seemed like the children over time developed a much more favourable taste preferences and were positive to try new recipes and new foods.

First of all, it was a bit of a struggle - I do not eat this  
- No but be without [food] then.

(IP17)

Another challenge was differences in weight status between siblings, with one slim child while the other had obesity. Parents reflected that these differences existed despite siblings having similar food intake and activity level. They expressed that treating children differently was a challenge in these cases. A greater understanding of the genetic background to childhood obesity obtained within the programme was considered comforting:

How unfair it can be. One sibling is really skinny despite the same food, and the other suffers from obesity. So, I thought it was good to learn that it is not always about eating the wrong food, but what genes you have as well.

(IP12)

Some parents revealed that they found it difficult to resist relapses to unhealthier choices over time, especially concerning food choices at certain times, such as around Christmas and other vacations. Periods of illness or other external factors could also mean slipping from their healthier routines. A few parents described feelings of shame for not managing to resist temptations and the consequences for the child. Instead, they continued to push the child to more physical activity to compensate for poorer food habits in periods. Generally, most participants were proud of taking the steps to implement healthier choices that benefitted the family as whole, not only the obese child, even though some relapses had occurred.

It takes some effort. It's not just doing this for a while, this is something one has to do all the time.

(IP4)

### 3.4 | Feelings of more or less support

This category included four subcategories: *Engagement in group sessions*, *Take on the web support*, *Clash with school meals* and *Involve extended family and friends*. Each subcategory comprised a variety of more or less supportive experiences.

#### 3.4.1 | Engagement in group sessions

All parents expressed their appreciation of the initial weekly group sessions. Many parents thought that the interaction with other parents were of great value, both to share ideas and to listen to others' experiences. Some revealed that they had been doubtful at first, partially due to talking about the child's obesity, which was perceived as a sensitive issue. But such feelings were transient, and the support from other parents in the group was appreciated. The content of the group sessions was perceived as educational and easy to understand.

It has been supportive that there are more people in the same situation. You give advice to each other. I had not thought about exchanging the candy bag for those little ones. Now, I do so with the smaller bag of crisps too.

(IP14)

All group sessions also had an activity for the children, which parents found motivating for most children. However, some parents described that their child hesitated to join at first. Most parents were positive to the fact that the children were involved in the group sessions as it was perceived easier to collaborate with the child regarding new diet and exercise routines if the recommendations came from someone else, and if they were put forward to parents and children at the same time. Also, the child received tailored knowledge and activities, which resulted in an increased awareness at home.

I thought the meetings were incredibly good and so did my daughter. She thought it was great fun to meet other children and play and cook. It inspired her.

(IP7)

One of the most appreciated group activities was a 'food-store walk' in which the group went shopping for food together with a dietician in order to receive concrete advice and enable discussions on how to make healthy choices and how to read table of contents to identify healthier options. Further, the 'food-store walk' gave parents ideas on how to choose healthy breads, cereals and dairy products, and served as an eye-opener for some parents.

The shop walk was very, very useful. It was the biggest awakening. [I] found out about the traps, here you are fooled over and over again. You think you're buying healthy (foods), but instead it's a disaster.

(IP1)

I have never, ever, looked at a table of contents, I have shopped with my eyes. Now one has learnt what the

table of contents stands for, so now it takes twice as long to shop, but one has the time.

(IP14)

### 3.4.2 | Take on the web support

All parents were positive to the web-based programme following the initial group sessions, and many parents thought that it provided useful information and was a resource to help them remain with healthier habits and focus on the changes. The majority described that the web-based programme was easy to use, follow and enjoyable. Many also liked the idea that the child could participate in the web-based programme, especially the regular weekly assignment and gamification parts. Others appreciated content of the web-based programme was the recipes, where healthy alternatives for meals and breakfast were provided. The web-based programme was perceived to encourage parents and children to broaden the food repertoire, improve food choices and create an interest in cooking. Some parents appreciated the web-programme's home exercise videos and highlighted the examples of outdoor activities and suggestions for daily exercise. Further, parents valued learning about creative ways to engage their children in physical activities.

Good, it is available 24 hours a day. I could log in when I needed to, without having to adapt to anyone. I think that was good.

(IP14)

She made scrambled eggs on her own one morning, great! She has never been cooking in the kitchen before.

(IP17)

I think it was great fun, everything was there. There were recipes, training tips and exercises, there was a lot

(IP15)

Parents also appreciated the coaching function in the web-based programme, partly because it contributed to the general feeling of support, but also because of the possibility to ask direct questions at any time. Some parents contacted the coach to learn more about obesity in children and to discuss issues of concern, like if there was a risk of developing an eating disorder or how to support the child's self-esteem. Some parents expressed concerns and anxiety that the child might become too concerned about his or her body and appearance. To illustrate that many found the support from other parents supportive, it was suggested that there should be a community function in the web-based programme, as a means to keep contact with other families and for peer support during the web-based part of the programme.

It was nice to know that there was someone to ask

(IP14)

I was terrified about thoughts that might induce eating disorders. That she would be fixed by her body [image].

(IP 12)

Further, the web-based programme provided valuable information about children and their screen time. Parents were given suggestions and information on how to limit children's screen time, for example, by parents' role modelling by limiting their own time TV viewing and smart-phone use. The families were also suggested to track their own screen time, perform some tests to check, follow up and inspire less screen time, which made some families considerably limit their screen time. Several parents felt that this was an eye-opener in the web-based programme.

After the exercise on screen time, we have reduced it a lot. We introduced other activities instead of sitting with the tablets. Now they [the children] can watch on weekends, but not during the weeks.

(IP15)

The opinions were divergent regarding the amount of information provided each week. Some wanted more information every week, and others found it difficult to allocate time to finish each week's tasks. Lack of time and interest was mentioned by one father who had not used the web-based programme, though his partner was active and followed it weekly.

That (the web-based program) was not my cup of tea, unfortunately. I left that to her [mother]. Interviewer: was she active? Father: Yes, absolutely!.

(IP4)

### 3.4.3 | Clashes with school meals

In Sweden, school children are served a hot meal for lunch free of charge. Pros and cons were expressed by the parents regarding the school's impact on the children's food. Overall, most parents were satisfied with the school support and highlighted the importance of cooperation to best help the child. Some parents had talked to the staff or the cook in the school restaurant and had experienced constructive dialogues about the food served to their child. Many parents thought that their school provided good choices for the meals and appreciated a rich variety of vegetables.

The sports teacher sometimes eats with them. It is a great school that makes sure they eat healthily.

(IP 9)

However, some wanted more support from the school and hoped that the schools could also act as a role model for healthy



food and activity habits. Concerns regarding the school staff's lack of restrictions on how many portions a child could eat for lunch, or the number of sandwiches a child could have during snack time, were mentioned. When this occurred, the parents felt powerless and discouraged as the efforts within the family were obstructed. One parent also described having been in contact with the head cook at their child's school because of the unhealthy servings of marmalade and hot chocolate at snack time. Another parent mentioned that recent changes had been made at the child's school regarding limitations of food access for financial reasons, but not due to health reasons.

Unfortunately, they cook a little too good food... They do have big buffets. A little too good food to stick to normal portion sizes, at the same time, it's nice that the food is good.

(IP 1)

### 3.4.4 | Involve extended family and friends

Many parents expressed previous and present difficulties to engage grandparents in making healthier options for their grandchild. Cookies, candy and ice-cream had commonly been offered when the grandchildren visited. As to get support, most families were open to grandparents, friends and other family members about their participation in the Web-COP study and had received favourable responses. One manifestation expressed by several parents was that the parents were now asked before the child was served food and that candy bowls were no more available. Many parents appreciated that their efforts were taken seriously and mentioned that such supportive behaviours helped the family to keep their motivation.

Now there are no sweets. We have a grandmother who loves such things, it does not matter what day it is, there is dessert. [We say:] "Now there are no sweet desserts, you can offer fruit and berries. Now we are rock-solid, and you have to help".

(IP7)

But not all parents felt supported by their next-of-kins and friends. Some parents expressed how they had tried to precede situations with unhealthy food by bringing their own food options, but such arrangements were seldom appreciated. As the parents struggled with new routines, it was difficult to prohibit unhealthy food when the child visited relatives or friends who served the child food that was restricted at home. Some actions by relatives were even perceived as counter-productive of the family efforts.

Grandmother pampers the children. Then she [the child] has to be detoxified when she gets home. And we have to start all over again.

(IP13)

## 4 | DISCUSSION

In this study, we showed that parents who participated in the Web-COP study found the intervention transformative and helpful not only for their obese child, but for the lifestyle of the whole family. However, the changes made were not without battles and challenges, and many parents wished for prolonged support to enable sustainable results.

The impact of parents as role models who set rules and support the children's development of self-regulation was described in a review including 51 papers on parenting and feeding style and its influence on children's bodyweight.<sup>27</sup> An indulgent feeding style was associated with negative health outcomes and a higher risk for children to become overweight or obese, whereas an authoritative feeding style seemed to be protective.<sup>27</sup> In our study, many parents were motivated and determined to help their children establishing healthier habits and saw themselves as role models responsible for their children's lifestyle habits, that is applied a more authoritative feeding style. Another review demonstrated that overweight and obese children are more likely to make healthy eating choices when they are with peers who make healthy choices. Eating meals together and involvement in food preparation were improving the children's quality of diet.<sup>28</sup> In our study, exposure to unhealthy foods outside the family was a parental concern which made sustainable changes more difficult. Thus, there may be reasons to involve schools and other child activities in the preventive measures of child obesity.

Sustaining changes were reported to be challenging, and parents wished for support for a longer period, well aware of the need for continuous efforts to counteract the child's tendency to increase in weight. However, in another study, an intervention of 16 weeks was commented as too long, suggesting that Internet-based options may be more feasible and accessible.<sup>19</sup> The combined treatment model with group sessions and web-based support was well-received by participating parents and may have the potential to add digital adjuncts to childhood obesity treatment.

Parental ambivalence between taking active actions and caring for the child's self-esteem is described when studying parenthood in families with children with overweight and obesity.<sup>29</sup> We speculate that our study facilitated a journey, where the participating parents initially appreciated the group sessions as an arena for discussing the sometimes-sensitive subject of obesity, both with their own child and other families. Many parents expressed feelings of guilt. Discussions with peer parents in similar situations supported and aided them to introduce changes and provided support of their parental role. Furthermore, comprehensive family behavioural interventions are shown to be effective in treatment of child obesity.<sup>10</sup>

In the final months of our study, the support from staff was continued online and helped sustaining the changes made.

Digital components as a part of a paediatric obesity treatment are still rare.<sup>16</sup> Given the number of children in need of effective treatment for obesity, innovations that aim to be appealing, user-friendly, effective, sustainable, but also easily scalable in clinical

practice, are highly needed. The experiences of patients and parents need to be actively investigated when introducing new technology.

#### 4.1 | Methodological considerations

The strength of this study was the vivid interviews where parents shared beneficial as well as challenging experiences made during and after their participation. The familiarity of the interviewer (AT, a paediatrician) may have contributed to fruitful interviews as the obesity of the child was already well-known and under treatment. On the other hand, this familiarity may also suggest a dependency position between participants and interviewer. It is also possible that the interviewer (AT) had presumptive opinions that could affect objectivity in the interviews. Further, there may be a selection bias as the most positive and satisfied parents were willing to participate, while some significant respondents with less positive experiences might have been lost. Only two of the participants were fathers; hence, the findings may predominantly reflect the experiences made by the mothers.

However, these possible biases were addressed by the different professions and experiences within the research group who could challenge any presumptions. Two researchers (AT and MP) coded the interviews independently, and the emerging findings were discussed repeatedly within the team and with peer researchers to reach consensus. For enhanced dependability, all steps in the emerging result were rigorously discussed between all authors to reach a consensus. Parents interviewed in this study were all aware that their child had weight issues and most of them had sought medical support. This will limit the generalisability in the study since many parents of overweight children do not recognise their child's weight problem.<sup>30</sup> Further, the study aimed to explore parents' overall experiences of partaking in the Web-COP study; hence, no identification of whether specific components of the programme were perceived as more helpful and effective than others was made.

## 5 | CONCLUSION

We showed that parents who participated in a programme (the Web-COP study) combining group session and web-based support found the intervention transformative and helpful not only for their obese child, but also supported the lifestyle of the whole family. Using a combination of group sessions and web-based support involving the whole family may be a fruitful clinical tool to obtain sustainable changes in BMI-SDS in children with obesity. However, further research is needed to identify what components in such interventions are the most helpful to initiate and maintain the changes.

### CONFLICT OF INTEREST

Annelie Thorén is a consultant to and has equity in For Life Academy. The other authors have no conflict of interest to declare.

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