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Family members' roles in healthy-eating socialization based on a healthy-eating intervention

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Abstract

Purpose – *Healthy-eating socialization is often described as a bi-directional process, but there are only few studies on children and parent's roles in the process. This paper aims to investigate children and parents' accounts of awareness and involvement in healthy eating and how they relate it to their roles in healthy-eating socialization.*

Design/methodology/approach – *Semi-structured interviews were conducted with 38 families three months after a healthy-eating intervention involving dietary advice and SMS feedback. The interviews were analysed by means of qualitative content analysis.*

Findings – *Children and parents identified several causes of awareness and involvement in healthy eating: new or re-activated health knowledge, visualization of amounts, self-regulation and planning. Children adopted two strategies in terms of family socialization: a direct strategy placing demands on parents or a cooperative strategy helping the parents. Parents initiated dialogues with family members about healthy eating and felt responsible as role models often honouring the children's demands and help.*

Research limitations/implications – *Findings provide a concrete empirical account of the socialization process and confirm that parents still have the superior hand, when it comes to healthy eating, but with children as active players. The authors suggest future studies to explore the development of influence and awareness of healthy eating among children and the extent to which children wish to engage in healthy-eating socialization.*

Originality/value – *The study supplements previous research by including children's immediate family as a unit of analysis. By taking an intra-familial systemic approach to studying family socialization, future studies can take into account the family support (or lack hereof), when designing interventions and evaluating the outcomes.*

Keywords *Healthy-eating socialization, Healthy-eating intervention, Children, Parents, Qualitative research, Health education, Socialization*

Paper type *Research paper*

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Introduction

Soaring overweight and obesity levels among children in the western world are well-described in the literature as a serious challenge for the health of future generations (Reisch and Gwozdz, 2011) with the risk of bringing the undesirable eating behaviour into adulthood (Stice *et al.*, 2006; Klein-Hessling *et al.*, 2005; Knai *et al.*, 2006). Much previous health research emphasises the important role of parents when it comes to inducing children towards healthy-eating habits (Birch and Fisher, 1998, Lau *et al.*, 1990; Kremers *et al.*, 2003). Parental influence (Eldridge and Murcott, 2000) or parenting style (Arredondo *et al.*, 2006) embedded in the family's interaction and communication patterns (Nørgaard *et al.*, 2007; Nørgaard and Brunsø, 2011) and as a part of the overall consumer socialization (Kelly *et al.*, 2006) seem to be important for transmitting healthy-eating habits to children.

School-based interventions are another means to create awareness and behavioural changes with regard to healthy eating, and in recent years, interventions aiming at improving

children's dietary patterns have become widely applied. These interventions directly or indirectly aim at inducing participants to change their behaviour during a relatively short time span and intervention outcomes are usually measured in terms of changes in Body Mass Index (Stice *et al.*, 2006), healthy food consumption levels (Pearson *et al.*, 2010; Pearson *et al.*, 2009) or levels of knowledge about healthy eating (Blanchette and Brug, 2005; Shepherd *et al.*, 2006).

Previous studies strongly suggest that the family is decisive as gatekeepers in terms of the barriers and facilitators for children's healthy eating (Birch and Fisher, 1998). But when it comes to healthy-eating interventions as a socialization attempt involving children there is a lack of knowledge about how these interventions affect or is affected by family interaction. Arguably, a family perspective is important for understanding how an intervention is perceived by and possibly impacts both the participating child and its immediate family. Hence, studies of healthy-eating interventions, especially those targeting children, should explicitly take the family context into account, both to be able to better assess the healthy-eating socialization processes in families and in order to design more effective interventions in the future. The present paper is a contribution to fill this gap in previous research. Based on our review of the literature, we know that children and parents influence each other mutually when it comes to healthy food consumption, but there is a lack of knowledge about the roles children and parents play in healthy eating socialization. Hence, the purpose of this paper is to investigate children's and parents' awareness of and involvement in healthy eating after participation in a healthy-eating intervention targeted at the child. An additional aim is to explore how family members perceive their own roles in the process of healthy-eating socialization. Besides contributing to knowledge about family members' roles in healthy-eating socialization, this research is useful for designing future interventions that take the support (or lack thereof) in a family setting into account. Notice in this connection that the fact that we study these processes after an intervention is just characteristics of the context. In this article, we do not focus on, nor do we report, quantitative effects of the specific healthy-eating intervention. For such results, we refer to other publications from the same research project (Bech-Larsen and Grønhoj, n.d.). In this article, we report an account of the children's and parents' views on healthy eating and socialization based on qualitative research.

Family members' awareness of and involvement in healthy-eating interventions

The World Health Organization defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 2011). Healthy eating is behaviour securing a properly functioning body through intake of healthy food and drink. In this paper, healthy eating will be more narrowly defined as complying to the official Danish health recommendations (eight guidelines recommending eating fish, fibre, fruit and vegetables, drinking water, exercise, avoid fat and sugar and eating a varied diet) (Ministry of Food, Agriculture and Fisheries, 2011).

Healthy-eating interventions attempt to create more awareness of and involvement in healthy eating among the participants hopefully changing their eating behaviours in a healthier direction. There is an extensive body of literature focusing on interventions for both overweight children (Bauer *et al.*, 2010) and normal weight children (Stice *et al.*, 2006). Interventions take place in different settings, but are mainly school based (Kubik *et al.*, 2003; Anderson *et al.*, 2006; De Bourdeaudhuij, 2011) or family based (Berry *et al.*, 2004). Different tools as input for each participant are used, such as diet counselling (Eliakim *et al.*, 2002), tailored information or feedback (Brug *et al.*, 1999; De Bourdeaudhuij and Brug, 2000). Studies have also explored issues such as parenting style (Arredondo *et al.*, 2006), family language (Geer *et al.*, 2002) and knowledge levels (Hursti and Sjöden, 1997) in connection to children's healthy eating. In all of these studies, the individual child's behaviour before, during and after the intervention is usually in focus, rather than that of the whole family. An exception is the area of nutritional advice and clinical psychology, where studies have been conducted targeting both children and parents (Wilfley *et al.*, 2010). When it comes to preventive healthy-eating interventions, involvement of parents, if any, is usually restricted to

providing their children with information about the intervention (Stice *et al.*, 2006). This seems insufficient since children are very much affected by the decisions taken in the family regarding healthy eating and depend on parental support, for instance, with respect to availability of healthy options at home. Therefore, it is important to study family members' awareness of and involvement in healthy eating in connection with a child's participation in a healthy-eating intervention. De Bourdeaudhuij (1997) has studied family members' perceived influence on introducing healthy food into the family and her findings provide support for targeting families rather than individuals in nutrition interventions.

From a social learning point of view, behavioural change interventions should teach participants a more appropriate behaviour or, if their behaviour already is in line with dietary recommendations, confirm this behaviour. The learning outcome may include experiences with self-regulation, changed self-efficacy levels, increased knowledge, etc. and can be of a more or less conscious nature. Cognition, behaviour and environment (peers, family, social structures) are believed to influence the social learning process in a reciprocal way (Bandura, 1977, 2004; Luszczynska and Schwarzer, 2005), which makes it a complex task to determine the causality of possible learning outcomes and effects on behaviour. However, to enable and support the learning process multi-component interventions are recommended, making it easier for the participant to implement the learning outcomes with support in different settings such as school, peers and family (Birnbaum *et al.*, 2002; Shepherd *et al.*, 2006; Müller *et al.*, 2005). Brug *et al.* (2005) argue that in order to understand the effects of healthy-eating interventions, including how learning outcomes perceived by children and parents can be implemented in the participants' everyday lives, barriers and facilitators in the surrounding environment (mainly parents in this case) needs to be investigated.

Hence, in accordance with a social learning approach, we argue that children's healthy eating should not be studied in isolation, but take the child's immediate family into account. This systemic approach to intra-familial communication and interaction is valuable when viewing a healthy-eating intervention as a socialization attempt. However, there is a lack of studies looking into the roles of family members in relation to interventions aiming at creating awareness of and involvement in healthy eating. Apart from looking at the possible effects of an intervention (in terms of, e.g. behavioural changes), it is valuable in its own right to study the amount and nature of family interaction that is likely to follow from such an intervention.

Family members' roles in healthy-eating socialization

Building on classic socialization theory, consumer socialization research places parents as the main agent in the primary socialization process, where they both explicitly and implicitly transmit consumer-related orientations to the child (John, 1999; Ward, 1974; Ekström, 2006). In the secondary socialization process, peers, school and media become more influential (Dotson and Hyatt, 2005; John, 1999; Moschis, 1985). Eating healthily is a part of the child's consumer socialization process where family, school, peers etc. play a long-term role in influencing the child's eating habits (Chan *et al.*, 2009; Kelly *et al.*, 2006; Murnane, 2008). Children's cognitive abilities are important factors in family interaction and the process of consumer socialization. For example, children aged seven to 11 are at the "analytical stage", where information processing abilities are improved, more complex knowledge is taken in and new perspectives that go beyond their own feelings and motives can be applied (John, 1999). At the "reflective stage" (age 11-16), the social and cognitive abilities are further developed, and "attempts to influence parents and friends reflect more social awareness as adolescents become more strategic, favouring strategies that they think will be better received than a simple direct approach" (John, 1999). In short, pre-adolescents and adolescents typically have similar knowledge of and experience with strategies to influence decision-making processes as those of adults (Easterling *et al.*, 1995; Grolnick *et al.*, 1997; Nørgaard *et al.*, 2007).

Scholars agree that nowadays pre-adolescent children play a role in household decision-making (Dotson and Hyatt, 2005; Easterling *et al.*, 1995; Foxman *et al.*, 1989; Grønhøj, 2002). However, our knowledge about children's influence on family decision making and role in family interaction is still rather fragmented and superficial. Grønhøj (2006)

has explored family interaction in relation to environmentally oriented consumer behaviour and her findings suggest that children influence their parents' consumption choices both indirectly and directly contributing to consumer socialization of all family members. Nørgaard *et al.* (2007) investigated children's influence on and participation in family decision processes and family conflicts and conflict resolution (Nørgaard and Brunsø, 2011) related to food buying. Their findings suggest that children's active participation determines the influence they gain on food buying and that they use specific strategies to ease family life. With reference to healthy eating, Ayadi and Bree (2010) argue that food meal times are ways of socializing family members in consumption skills related to food and they argue that food learning is a two-way process between children and parents. A study on adolescents' everyday food practices suggests that the independency of adolescents in terms of what and when to eat can create intergenerational conflicts, but also that meal times are a way of maintaining family relatedness and love. Hence, the active role of children in family interaction implies that consumer socialization is not merely a one-way process, but can be "reverse" (Moschis, 1985; Foxman *et al.*, 1989; Grønhøj, 2002) or a collection of "bidirectional interactive processes" (Kuczynski and Parkin, 2006) where mutual influence and value exchange take place between parents and children (De Mol and Buysse, 2008; Knafo and Galansky, 2008). These processes can involve conflicts, but also conflict resolution and avoidance, communication and influence strategies (Nørgaard and Brunsø, 2011) – which can be both direct and indirect.

Based on this literature review, we now report our qualitative investigation of children's and parents' accounts of awareness of and involvement in healthy eating after having participated in a healthy-eating intervention. We also explore how family members perceive their own roles in the process of healthy-eating socialization.

Method

Sampling

To investigate family interaction regarding healthy eating, interviews were carried out with children and their families three months after they had participated in a healthy-eating intervention. A total of 43 families responded positively to the recruitment letter, which was sent to pupils at 12 schools in the Central Denmark Region that had participated in the healthy-eating intervention. In 38 of these families, interviews were carried out in October 2008. The interviews took place in the participants' home at a time of their convenience (evening or weekend) with the families. Background characteristics of participants in the interviews, compared to non-interviewed participants in the intervention, are shown in Table I.

The interviews had an average duration of 100 minutes and were conducted by a professional interviewer from a market research agency experienced in interviewing children and families. Student assistants participated in digitally recording the interviews, taking pictures, registering the family members' names, age and occupation and made observation notes. Subsequently, the interviews were transcribed verbatim.

Interview procedures

The interview guide was semi-structured in order to invite interviewees to answer using their own words and narrative structures (Flick, 2009), thereby taking the children's cognitive abilities into account. The interview guide focused on the family's habits concerning meals, leisure time, physical activity, grocery-shopping and cooking with emphasis on responsibility, motivation and initiative. More indirectly, the family discourse on health was investigated as well as its knowledge of nutrition and health recommendations. In a fruit and vegetable session (similar to one conducted by a dietician at school), the family members had to pick what they believed to be 600 g of fruit and vegetable and put it on their plate. The plates were then weighed and the difference calculated. The session served to illustrate six portions of fruits and vegetables, which created a dialogue within the family about their current habits. This also gave a break in the rather long interview. The last part of the interview guide concerned the family's overall evaluation of the intervention. They were

Table I Background characteristics

	Non-interviewed families			Interviewed families		
	Mean	SD	n	Mean	SD	n
Number of participants	204			38		
Gender, children (percentage of girls/boys)	52/48			55/45		
Gender, parents (percentage of mothers/fathers) (the one answering the survey)	86/14		147	88/12		38
Children's mean age	11,48		204	11,49		37
Parents' mean age (the one answering the survey)	41,29		138	42,65		36
Parents' educational level ^a	4,15	1,385	136	4,37	1,262	35
Mean, standard deviation and n						
Monthly household income (DKK) before tax ^b	4,51	1,084	144	4,95	1,079	37
Mean, standard deviation and n						

Notes: ^a1 = 7th-10th grade, 2 = high school or similar, 3 = vocational education, 4 = shorter education (up to two years), 5 = Medium education (two to four years), 6 = higher education (four years or more). ^b1=less than 8.000, 2 = 8.000-14.999, 3 = 15.000-29.999, 4 = 30.000-49.999, 5 = 50.000-69.999, 6 = 70.000 or more. 100 DKK ≈ 11.5£

asked to evaluate the outcome and relate it to their family interaction regarding healthy eating.

Children's attitudes and behaviour can be difficult to study since their willingness to share thoughts in an interview setting vary with their maturity, roles in the family and other characteristics (shyness, little involvement, etc.). Therefore, the interviewer was instructed to make sure that all family members were heard and were given the possibility to answer questions; as a principle, children were asked first and then the parents. The interviewer was also instructed to interpret answers during the interview in order to make sure that the statements were correctly understood. Parents sometimes answered on behalf of the children and here the interviewer asked the child again. Often parents would also supplement the child's statements, creating a dialogue. We acknowledge that the interview can be viewed as an intervention in itself influencing the children's and parents' statements, however by following the interview guidelines described previously, we have tried to avoid the interviewer influencing the families.

Background for interviews

As already mentioned, the background for the interviews was a healthy-eating intervention, where 242 children (age ten to 12, 5th grade) were recruited class-wise from 12 schools in the Central Denmark Region. Randomly assigned to three experimental groups, they were subjected to different treatments in a nine-week intervention period; focus was on intake of fruit, vegetables and (reducing) sweet drinks (for example soft drinks, ice tea and drinking yoghurts), all referred to here as "healthy eating". The intervention consisted of education by a dietician and individual reporting and feedback by SMS (mobile phone Short Message Service). During the intervention all classes were visited twice (45 minutes) by a dietician from the Centre for Public Health, Central Denmark Region, who, following the official health recommendations (six portions of fruit and vegetables per day), educated the children about sugar in food and beverages and the importance of eating fruit and vegetables. A practical exercise was conducted where the children were asked to pick what they believed to be 600gms from 5 kilos of mixed fruits and vegetables. The amounts were later on weighed. The exercise was repeated in the interview session (described in the following). The content of the education sessions was coordinated by the first author to ensure that all classes received identical information.

The second component was individual reporting based on communication via SMS. Every other week, the participants in two of the three experimental groups had a daily task of reporting, via SMS, their intake of fruit, vegetables and sweet drinks in units, as instructed in class by research assistants. One unit consisted of 100 g of fruit or vegetables or 150 ml of sweet drinks; this was depicted on laminated sheets handed out to participants. On sending

the daily SMS-report, participants received prompt feedback comparing their report to a self-set weekly goal, which could be adjusted between SMS-weeks. Parents participating in SMS-reporting were instructed in a letter. Participation was voluntary and parental consent had to be obtained.

Data analysis

The interviews were analysed by means of qualitative content analysis (Flick, 2009). Data coding followed the principles of theoretical coding and was based on concepts from the literature review and the empirical data itself. In order to explore similarities and differences between children and parents and their accounts of awareness of and involvement in healthy eating and roles in healthy-eating socialization, thematic coding was applied. Since the focus was not on the intervention effects, but on children's and parents' accounts of healthy-eating awareness and involvement and roles in the process of healthy eating socialization, no comparisons between groups were conducted. Also, all interviewed families were included in the analysis, no matter how much they reported on awareness and roles in healthy-eating socialization.

Views on health and health behaviour differed a lot; in some families it was perceived as good health behaviour to eat breakfast containing a lot of wholegrain, low-fat dairy products and no sugar, while in other families the emphasis was on the act of eating breakfast no matter what it consisted of. Therefore, in the analysis no view on health was taken at face value. Instead a more holistic approach was taken noting self-contradictions and observing how the families talked about and handled the fruit and vegetables in the practical exercise. Also, no attempt has been made to rate and compare the overall health status of the families

Results

The empirical findings are depicted in Figure 1, which serves as a heuristic tool (Flick, 2009) providing a structure of associations and links between categories coded for the analysis. The boxes represent core categories from the literature review: awareness of and involvement in healthy eating based on a healthy-eating intervention and family members' roles in healthy eating socialization.

The circles represent categories derived from the interviews with the parents' categories above the line and the children's categories below the line. However, these are not the exact words used by participants, but our categorizing statements and concepts. The number of children/parents confirming the aspects is illustrated by how close the circles are to the core categories (for instance, more children confirmed self-regulation than increased will and self-efficacy, but these are still related). Children's and parent's perceptions sometimes overlap, but in order to reveal differences as well as similarities, children and parents are analysed separately with respect to each category and its' subordinated concepts.

Awareness of and involvement in healthy eating based on a healthy-eating intervention

Awareness of and involvement in healthy eating can arise from a number of occasions over time: Family meal times, advertising, home economics classes, grocery shopping, diets and so on. According to socialization theory, parents, friends, school, media and other family members are the main sources. In this study, all children and (indirectly) parents had taken part in the healthy eating intervention, which naturally led them to reflect on the outcomes caused by the intervention. It was expected that both children and parents could have learned something new about healthy eating from the intervention and tried to influence family members at home. It was also expected that the intervention could serve as a reminder of tacit knowledge, which became activated again. But the awareness of and involvement in healthy eating could also arise from events before/outside the intervention such as personal experiences with special diets, diseases or health knowledge from books etc. On a methodological note, the interview session itself may have triggered a heightened awareness of healthy eating. The following sections present children's and parents' general accounts of

Figure 1 Associations and links based on the interviews. Parents' categories are shown above the line, children's below the line. HE stands for healthy eating

awareness and involvement based on the healthy-eating intervention and the circles in Figure 1 represent the categories related to outcomes by children and parents accordingly.

Children

The interviewed children mentioned several accounts of awareness of and involvement in healthy eating based on their participation in the healthy-eating intervention. Increased awareness arose from thinking and talking more about healthy eating. In relation to the intervention they said they had been thinking about the consequences of unhealthy eating, the benefits from healthy eating and ways to be a bit healthier by cutting down on sweet drinks and increasing consumption of fruits and vegetables. For example, a boy said: "Yes, I am thinking about it – that the unhealthy stuff might taste good, but fruit and vegetables may be better" (boy, 503). Children had talked with classmates, family and friends as predicted by socialization theory about different aspects of healthy eating. One girl explained how she and her friends had spent quite some time talking about the intervention and personal improvements. Increased and continuous focus on healthy eating was mentioned as a way of reminding oneself of self-set goals, avoiding situations including unhealthy food or choosing healthier alternatives. One boy explained that due to a sports injury he could not exercise and therefore he was more aware of getting his six portions (fruit/vegetables) a day.

Knowledge serves as a link between awareness and the possibility of changing behaviour and thereby more active involvement according to social learning theory. From the sessions with the dietician, children learnt about sugar levels and the official Danish health recommendations. One boy said that his newly obtained knowledge was good for him, since

he now knew the sugar levels in some of his favourite products like chocolate milk, drinking yoghurts and soft drinks. He used the knowledge to refrain from the products choosing healthier alternatives instead. But knowledge did not only refer to facts about products; for many of the children knowledge was equivalent to experience. Through the SMS-based intervention they had experienced setting goals and living up to them. Successes and failures had made them more knowledgeable about the difficulties related to eating the recommended quantities of fruit and vegetables or avoiding sweet drinks. Other children gave the impression that the intervention did not bring them new knowledge especially because their parents had taught them about healthy eating by implementing healthy routines at home such as eating fruits before dinner instead of crackers, only eating sweets once a week etc.

The children heavily underlined that the fruit and vegetable session (both with the dietician and in the interview) served as bringing awareness to eating healthily. One boy said: "I was very surprised by (discovering) how much you actually have to eat to get the 600 g, and then I thought it was a lot to eat" (boy, 503). Representing the opposite experience, one girl explained how the weighing session in class surprised her, since "I thought 600 g was much more" (girl, 1116). Children largely agreed on the usefulness of a handed out counting form that clearly visualized one unit of fruit, vegetables and sweet drink. For those reporting by SMS, it served as support, and several families had kept the form in sight, to remind them of getting enough fruit and vegetables and avoiding sweet drinks.

When accepting new insights from learning, trying to align behaviour with the newly acquired knowledge seems reasonable. The children tended to report on increased self-regulation; substituting foods of a more unhealthy character with fruit, vegetables or abstaining from sweet drinks, as illustrated by this statement: "On the first day of the project, we went to McDonald's, and here I actually thought I did something by ordering water instead of a soft drink" (boy, 407). Others talked about turning down soft drinks at family parties or asking for fruits instead of the usual unhealthier snacks when visiting friends after school. Self-regulation could also be social, as illustrated by a girl saying how her cosy evenings with friends instead of including the usual crisps and sweets consisted of a buffet of apples, grapes and homemade buns brought by her friends. The social aspects of self-regulation almost became a social regulation of group member behaviour when discussing postponing a birthday party for classmates due to the SMS-reporting on sweet drinks. The birthday was held on a Friday based on the reasoning that the children then had to keep away from sweet drinks for the rest of the weekend. Some children explained that the sense of self-regulation was strongest during the intervention and had disappeared afterwards for different reasons such as decreasing interest, no SMS-feedback or because the unhealthier alternatives became too attractive. Some children reported that their health behaviour was absolutely unaffected by the intervention; already eating healthily or not wanting to change behaviour were the main reasons. However, some children actively decided to live healthier thereby stating their active involvement. This could be a result of the intervention, but with the interviews done three months after the intervention, it is not possible to tell from the interviews whether there was any long-term impact on behaviour.

The children who actively tried to change health behaviour reported that they felt an increased will or self-efficacy (understood as belief in their own ability to achieve goals (Bandura, 1977)). Increased will was expressed as making an effort to try unfamiliar fruits and vegetables; a mother quoted her daughter as saying "Next time we are having broccoli salad, then I would like to taste it" (mother, 405). Another girl mentioned that tasting new foods had a positive effect on her intake, but she felt disappointed with herself for not eating more knowing that it tasted good and was healthy – the motivation or will was simply not there. Some forced themselves to healthier eating as illustrated by one boy who recognized that even though he did not like vegetables the intervention "gave me more will to eat them" (boy, 407). Through goal-setting some felt an increased belief in achieving self-set goals. Realizing that it was not that hard to eat for instance six a day made some continue after the intervention, but at the time of the interviews, most children did not think about the goals anymore.

Parents

It was clear that the intervention and the interviews activated pre-obtained knowledge among the parents renewing the awareness of healthy eating. Some parents admitted that their previous healthy habits had over time turned in to not so healthy habits (such as also eating many vegetables for dinner over time was substituted by eating a few slices of cucumber because that was what the children preferred). The difference between objectively and subjectively consumed amounts was pointed out by parents – especially those taking part in the SMS-reporting – as a way of increasing awareness and was illustrated by one father saying: “Being forced to count concretely and not just what one subjectively thinks was eaten was a huge eye opener” (father, 901). Therefore, visualizing one unit of fruit/vegetable/sweet drink also made it easier for the parents to handle the recommended six a day. As with the children, parents valued the handed out counting form: “When I used to hear about this six a day or six units of fruit and vegetables per day, I thought it was absolutely unrealistic [...] and it was not until receiving this chart where I [...] well, I can see the measures and I can see that it is realistic” (mother, 105). This was also evident during the fruit and vegetable sessions in the interviews. For some parents the weighing session or the child’s participation in SMS-reporting was a confirmation of their current lifestyle. These parents clearly stated that the intervention had not changed their behaviour, but the participation confirmed their assumption that the child was eating enough fruit and vegetables per day, did not drink too many sweet drinks, etc. This made parents content and proud and for some it justified the occasional intake of unhealthy foods.

As with the children, parents heavily emphasised the intervention as creating awareness of eating fruit and vegetables and avoiding sweet drinks. Facts related to healthy eating were not new to most of the parents, but whereas children mentioned focused thinking and talking more about healthy eating in everyday settings, parents in general emphasised planning and/or creating structures that facilitated healthy eating. Parents mentioned being aware of getting six a day, of spreading the intake of fruit and vegetables out during a whole day and of how different structuring of the weekdays influenced their behaviour. One mother said: “It became clear that weekends is the time where [...] well, it’s easiest to maintain the structure during the weekdays” (mother, 1006). Thereby, parents tried to maintain an overview and plan accordingly, which can be ascribed to parental responsibility for providing their offspring with healthy-eating habits. However, especially the parents taking part in the SMS-reporting also mentioned awareness about their own eating habits.

Barriers for more involvement in healthy eating mentioned by the parents were time, prices, motivation and lack of inspiration. Several parents had tried to overcome some of these barriers by, for instance, buying tasty fruit instead of sweets: “I have to tell myself it is not more expensive than buying a bag of sweets” (mother, 204). As with the children, it cannot be determined whether behavioural changes are long-term and necessarily caused by participating in the intervention; however some parents mentioned that they still avoid sweet drinks or eat bigger amounts of vegetables. As for the children, the parents’ stated that their sense of self-regulation clearly decreased after the intervention. One parent explained about her lack of self-control as the reason for returning to previous routines: “No, it was my fault, that with the Coca-Cola and things like that, that is because I cannot stay away from it myself” (mother, 107).

More parents than children stated that the intervention did not change their health behaviour. However, where some children described no changes or no active health decisions, surprisingly many parents reported on what could be interpreted as “resistance” to healthier eating. Reasons like convenience, lack of time and motivation were often mentioned, and one mentioned the need of a wake-up call before changing habits: “Dad has high cholesterol levels and is a bit overweight and [...] yes, high blood pressure and all those symptoms of stress and [...] the job he has [...] but it doesn’t result in anything. It is 100 times easier to do what you usually do [...] there is no doubt that if one of us got a really big wake-up call, then [...]” (mother, 809). Among the interview persons, two parents had cancer, one had recently had a heart attack (age 44) and one had had a bypass operation. The two parents diagnosed with cancer said that being diagnosed for them was a severe warning, and they immediately changed their diet in a healthier direction. On the contrary,

the parent with diabetes said that he knew how to eat according to the disease: “you have to [...] but then you learn to bend the rules” (father, 1018). It was clear that perceived consequences of current lifestyle varied a lot among the interviewed parents and the intervention could not change these perceptions.

Family member’s roles in healthy eating socialization

After these accounts of children’s and parents’ awareness of and involvement in healthy eating, we will now look into the “black box” of healthy eating socialization and family member’s roles in this process. Family members can take on both active and less active roles, they can be forced into roles and they can try to avoid roles. As shown in Figure 1, parents seem to be mostly involved in the socialization process, which are in line with common socialization theory.

Children

Based on the children’s awareness of healthy eating, it was clear from the interviews that children used – to various degrees – this awareness in two ways in the socialization process of healthy eating. The children who emphasised awareness of healthy eating (especially those taking part in the SMS-reporting) took on an active role and made demands on their parents. The demands mostly centred on provision of food items and related services with the children acknowledging their secondary role when it comes to food buying and preparation. One girl concerned about eating enough vegetables stated her demands quite bluntly: “I said that I wanted more vegetables in my lunch pack” (girl, 915). Another girl was concerned about the amounts her parents bought: “Because at the end [of an SMS-week] we could sometimes be running low and then I had to tell my mum all the time to buy some more apples or vegetables” (girl, 916). Availability was important to the children, not only when it came to ensuring that there was enough fruit and vegetables in the house, but also parents making fruit and vegetables more available and attractive by preparing, peeling, slicing and serving them. In none of the cases did the children mention asking parents not to buy sweet drinks.

The children’s demands included asking for support and help. According to social learning theory (Luszczynska and Schwarzer, 2005; Bandura, 1977), support from family and peers is extremely important in order to secure a change of behaviour. Mainly children participating in the SMS-reporting asked for help in counting units and remembering to send their text messages. A more general demand was the reassurance that parents supported and approved their participation in the intervention or in general their effort of eating healthier. It was clear that children linked performance in the intervention with family support illustrated by one girl talking about the girl in class eating most fruit and vegetables: “She is really good [...] I also think her family is good at it” (girl, 809). A boy was positively surprised by the fact that his whole family started to participate in counting units of fruit and vegetables on a sheet of paper at home, when he started doing the SMS-reports.

Children’s demands on parents had a very immediate impact on family interaction, since parents had to decide whether to honour the demands or not. A more indirect role of impacting the socialization process of healthy eating was by influencing the family’s eating habits in a more cooperative way. Children actively contributed to the family’s healthy eating socialization by putting forward ideas that could facilitate healthy eating in the family or offer their help. They suggested different ways to prepare fruits and vegetables, such as cutting different fruits and serving them in a bowl after dinner, making smoothies for breakfast, and adding more fruit and vegetables to their lunch box. There were no ideas on how to limit intake of sweet drinks, though. Children also shared their newly obtained knowledge in their interaction with family. In a family where the father drank Coca-Cola from a mug every morning instead of coffee, the child could now criticize the father’s behaviour by providing him with facts about tooth decay as a possible consequence of his excessive daily intake. Other children used facts from the session with the dietician to remind their families to eat enough fruit and vegetables or to avoid sweet drinks and explained the consequences. Children’s supportive or cooperative roles suggest that children are very active players in the healthy eating socialization of immediate family members.

Parents

As main caretakers and food providers, the parents expressed responsibility of teaching their children healthy eating habits by being role models. One parent mentioned preparing the kids for leaving home in such a way that they would know how to live a healthy life. Some parents also supported the view underlying the intervention that children could and should learn to take responsibility for their own health by practising self-regulation and thinking about the consequences of unhealthy eating. Other parents were sceptical about a project teaching healthy eating to their children, since to their mind it would take a lot more than just information and/or a short-term intervention. Political views on who is responsible for the health of individuals (society or the individual) were also put forward, reflecting an on-going public debate about the role of the Danish welfare state.

As mentioned in the section on children's demands on parents, parents could choose to honour the demands and thereby welcoming the children's active role. Many parents did provide children with the desired fruit and vegetables, in larger quantities and with more variation than usual. As food providers, the parent's awareness of healthy eating could regulate a large part of the family's intake of unhealthy food and drinks simply by not buying them. It was not necessarily discussed in the family but just simply carried out as exemplified by one parent wanting to avoid additives in food: "red bangers and cod roe are out [...] and Saturday night sweets are cancelled" (father, 917). Here the parent displayed a power regulating other family members' intake of these foods. But parents also responded positively to children clearly trying to influence the family's behaviour in a more healthy direction. One mother said that her boy had bought a book on smoothies and "then, all of a sudden, we had to buy mangos and other unfamiliar fruits, didn't we" (mother, 204). Some parents pointed out barriers for complying with their children's wishes: The relatively high prices of fruit and vegetables, not enough time to prepare it or resistance to dictation from official health recommendations on how to behave. Some children did not put forward demands about increased intake of fruit and vegetables during the intervention, but tried to do so during the interviews. In one case, the parent immediately turned the suggestion down saying: "Well there you have it: then you have to get an extra lunchbox. Their school bags are already full [...] you cannot squeeze more in. It will get squashed, the fruit they are bringing" (mother, 204). So here the practical and maybe economic aspects of buying a bigger lunch box and/or school bag were a barrier for bigger fruit intake.

Parents viewed the socialization efforts of giving their children healthy-eating habits as a continuous, often conflict-ridden struggle. One parent expressed it like this: "Well, I do hope that maybe sometimes they see that it is not only mum and dad being stupid when we are saying: now you have to eat this or that" (mother, 811). Parents heavily underlined the intervention as providing them moral support representing a "third party" which was harder for the children to argue against, and one mother even said: "I feel I have been struggling. I know I haven't been good at making them participate [...] but it is hard and as a mother you get sick of it and then I feel that the project has made it a bit easier for me" (mother, 216).

Parents' awareness of and involvement in healthy eating (coming from the intervention or other events) brought about dialogues between the child and other family members regarding healthy eating, supporting the parent's main role as caretakers. Different types of dialogue were identified in the interviews. One type of dialogue was about persuasion, illustrated by one parent saying: "It is about [...] I think she is easier to talk into eating fruit and vegetables" (father, 216). Another type of dialogue was about helping and supporting the child in his or her efforts to change behaviour. Some dialogues were initiated by the children participating in the intervention making them report on their new knowledge, recipes, experience, etc. or children asking parents about health advice. Some parents praised their child when eating healthy, some expressed normative pressure on the child at mealtimes or when snacking ("we are only saying this because we love you"), while other parents appealed to the child's critical sense of what is right and wrong when raiding the fridge after school.

The dialogues tended to include siblings, regulating their behaviour so that all children in the family had to abide by the same set of rules. The dialogues gave the opportunity to discuss conflicting health behaviours such as parents drinking soft drinks in the evenings while children were not allowed any such drinks. In some cases, the discussion resulted in group formations where, for instance, the children argued against their parents, or the mother would argue with the father about being the healthiest or unhealthiest person in the family. In one case a health behaviour conflict arose during the interview. One mother was relating her huge efforts in preparing healthy and varied lunches for her daughter. The daughter cut her off by saying: "But I don't eat your lunch, I never did. Well, maybe in the first grade" (girl, 811). The stunned mother, trying to grasp that for four years her lunches had been dumped, asked her daughter what she then had for lunch. The daughter (very annoyed) answered that she did not want to eat anything. This statement clearly struck the parents with concern.

The discussions could also be about health beliefs as illustrated by a boy who cut down on sugary sweet drinks, sweets and crisps. His decision resulted in a conflict with his mother about him drinking light soft drinks, as his mother preferred that he got real sugar rather than artificial sweeteners. The dialogue on healthy eating revealed different roles in the families. A number of mothers, in particular, defined themselves as "health promoters" or "family directors" in charge of the family's health. Some of them faced resistance from the whole family as illustrated by one mother: "I have always wanted us to eat fruit. Especially in the mornings [...] and I really would like us to drink freshly-squeezed juice. But my family definitely do not accept that" (mother, 811). So conflicts also appeared between parents sometimes leading to compromises with for instance having both raw and cooked vegetables for dinner. In other cases parents joined forces and pressed the child to improve its' health behaviour. Some parents were careful about thrusting too many health messages on-to the child, worried that he/she would get fed up and refuse to engage in the dialogue. This clearly showed that parents' took their role as main caretakers and responsible for the children's healthy eating socialization serious, but also that there exist a number of barriers that makes the role hard to fulfil.

Discussion

The aim of our study was to study the nature and sources of family member's awareness of and involvement in healthy eating and investigate how they related it to their roles in the process of healthy-eating socialization.

The children's and parents' accounts of awareness of and involvement in healthy eating clearly showed that it can arise from a number of events and to various degrees: being with friends with healthier habits, reflecting on own health behaviour, seeing pictures of healthy foods, planning for it etc. As underlined previously, it was not this paper's purpose to determine the effects of the specific intervention, but give an account of how children's and parents' awareness of and involvement in healthy eating could crystallize. Among the children, awareness and involvement was characterized by thinking and taking about healthy eating, which could result in self-regulation and noticing an increased will for healthy eating. Visualization of amounts of recommended portions of fruit and vegetables was – according to the children – a successful mean of creating awareness of healthy eating, and the children converted this into concrete knowledge and possibly improved behaviour. The children's accounts of awareness of healthy eating can be characterized as centred on the child itself; the children mentioned specific events that made their awareness and involvement go up or down, and it was described as a learning process. In comparison, the parents' accounts of healthy eating awareness and involvement was also characterised by self-regulation and again the visualization was effective in providing concrete knowledge of recommended portion sizes. More parents than children also mentioned that awareness rose by re-activating pre-obtained health knowledge through different means. This is natural, since parents (presumably) have gone through a long consumer socialization process and thereby have been exposed to health knowledge and messages many more times than their children. When children described that their awareness development affected themselves, parents described how rising levels of awareness made them think about planning and

structuring healthy eating for the whole family and thereby regulating the family's health behaviour as well. Barriers to healthy eating seemed bigger, when awareness was low, and this also had consequences for the family. Looking at the concrete intervention, including the immediate family in such an intervention implicates for future intervention designers that it can affect awareness and involvement levels in a positive direction; both among the directly affected children, but also among the parents – at least in a short-term perspective as a catalyst for healthy eating. This suggests that the systemic intra-familial approach based on social learning theory is valuable when interested in knowing more about the possible broader impact of an intervention. However, it is one of this study's limitations that we are not able to determine measureable effects of the intervention on awareness and involvement levels, and therefore we suggest that future studies to do so.

The accounts of children's and parents' roles in the process of healthy-eating socialization described different strategies used by the two generations. In the interaction with parents, children displayed elements of what John called the "reflective stage" (John, 1999), where attempts were made to influence parents both directly and indirectly and to different degrees depending on the children's level of awareness and involvement in healthy eating. The direct attempts were demands on parents to provide specific fruit and vegetables in satisfying amounts when the children wanted it. More indirect attempts of influence were also made, such as suggesting eating healthy foods or avoiding unhealthy, helping and contributing with knowledge and ideas for the benefit of the family. These findings are similar to those found by Nørgaard and Brunsø (2011) regarding food buying. Our results confirmed John's (1999) description of children at the reflective stage favouring strategies that they thought would go down better with parents. Our study also confirmed that children are more likely to gain influence when they participate actively and help ease family life (Nørgaard and Brunsø, 2011). But whereas Nørgaard and Brunsø (2011) focused on food buying, both of unhealthy and healthy food, our focus on healthy consumption leaves little room for children's strategic considerations about being allowed to eat chocolate bars as well if they are actively involved in the family's healthy eating. This we would consider a result of successful socialization of the child.

Parents did in fact appreciate children's participation in family health, valuing the possibility of having a different dialogue with the child and the remaining family about healthy eating. Sensing a moral support from the intervention (and from other third parties like schools, media etc.), parents felt confident discussing conflicting health behaviours and food preferences with the child and the rest of the family, as also found in Nørgaard *et al.* (2007). Sometimes this confidence resulted in displaying power by regulating the whole family's intake of certain foods, which can be considered as natural having the role as caretaker. Fulfilling children's demands, parents displayed their responsibility as caregivers contributing positively to the overall consumer socialization of the child (Ekström, 2006), and being a role models for the child. However, parents also displayed resistance to more involvement in healthy eating. Barriers like time, money and convenience were given as reasons, and it was surprising to hear parents argue against their children's wishes of eating healthier. The barriers could of course be very real in the particular families, and it displayed that the widespread health discourse in Western societies, where health as argument seem to overrule everything else (Turner, 2010), is not necessarily incorporated in all families. It also illustrated that parents have the main executive power in relation to the socialization process, which simply confirms classical socialization theory.

In order to study the socialization process and family interaction, there are certain limitations to the method used here. Making interviewees reflect on their own health and family interaction during an interview with (in most cases) the whole family, can be problematic, since the "weaker" family members can hold back information. Observations during interviews can be of too short a duration to capture interaction and they tend to take place with interviewees knowing they are on display. Relying exclusively on interviewees' self-assessments can also be problematic since they might not be able to report on family interaction without actually interacting. Therefore, we suggest future studies to use additional methods to supplement the "capturing" of family interaction. Grønhøj and

Bech-Larsen suggested the use of vignettes in the study of family consumption processes (Grønhøj and Bech-Larsen, 2010) by inviting family members to interact during the interview. This could also be explored in more detail when it comes to healthy-eating socialization.

With the children influencing the socialization process, our study has given an empirical account with concrete details of the socialization process, which we also consider as bi-directional (Kuczynski and Parkin, 2006). However, our study showed that parents still have most power when it comes to healthy eating, no matter how involved and aware the pre-adolescent children are. We suggest future studies to be longitudinal in order to explore the development of influence and awareness of healthy eating and investigate the interesting question of whether children want to engage more in the process of healthy-eating socialization and thereby influencing their own health behaviour more, or whether they prefer leaving it to their role models. This could be conducted with children at different ages, since we believe (in accordance with John's description of children's cognitive abilities (1999)) that maturity and age are important factors, when it comes to children's possibility to gain more power in the socialization process of healthy eating.

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