Promoting healthy eating in young children

The use of a communication tool about diet in public health nurses' counselling: A complex intervention study

Bettina Holmberg Fagerlund

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Eiksmarka, November 2019

Bettina Holmberg Fagerlund

Sammendrag

Avhandlingens fokus er helsesykepleiers veiledning om mat og kosthold på helsestasjonen. Helsesykepleier brukte et samtaleverktøy om kosthold i sin veiledning av familier med barn under skolealder i denne komplekse intervensjonsstudien. Det overordnede målet med studien var å bidra til et optimalt kosthold for barnet og spesielt inntak av grønnsaker basert på veiledning. En forutsetning var at intervensjonen skulle være tilpasset de eksisterende tidsrammene for helsestasjonskonsultasjoner. Studien omfattes av artiklene I-IV som presenterer fire delstudier i en kronologisk rekkefølge. **Artikkel I** en modifisert scoping review, presenterer oppdatert informasjon om veiledning av foreldre til barn i alderen 0-2 år om sunt kosthold innenfor en helsefremmende kontekst. Resultatene indikerer at kostholdsveiledningen bør tilpasses det enkelte barn og familien samt forberede familien på barnets kommende kosthold. **Artikkel II**, en tverrsnittsstudie, undersøkte om det er en sammenheng mellom at foreldrene rapporterer at de unngår å gi til sitt 10 måneder gamle barn aktuelle matvarer siden de er redde for at barnet kan reagere med allergi eller overfølsomhet og barnets kosthold. Resultatene i artikkel II var basert på et semikvantitativt matvarefrekvensspørreskjema som foreldre hadde fylt ut innen de besøkte 10 måneders konsultasjonen på helsestasjonen. Et funn viste en statistisk signifikant sammenheng mellom at foreldre som unngår å introdusere enkelte matvarer på grunn av frykt for allergi og overfølsomhet hos barnet samtidig ønsker mer informasjon om barnets kosthold. Dette viste seg å ikke være forbundet med begrensninger i deres barns kosthold. **Artikkel III** var basert på individuelle intervjuer, med en ‘interpretive description’ - tilnærming. Den undersøkte foreldrenes erfaring med å delta på helsestasjonskonsultasjoner når barnet var i alderen 10-18 måneder og bruken av ett samtaleverktøy om kosthold i konsultasjonene. Resultatene i artikkel III indikerte at spesielt de av foreldrene som var positive til helsemyndighetenes kostholdsråd allerede innen besøkte barnehelsesenteret, var fornøyde med kostholdveiledningen på helsestasjonen. Foreldre som derimot hadde spørsmål relatert til for eksempel barnets matallergi eller amming, opplevde ofte at de fikk begrenset med støtte på helsestasjonen. **Artikkel IV** presenterer en klusterrandomisert kontrollert studie. Studien undersøkte effekten av et samtaleverktøy om kosthold på barnets kosthold når barnet var 2 år. Samtaleverktøyet ble brukt i veiledning ved tre helsestasjonskonsultasjoner og dette ble sammenlignet med standardveiledning ved tilsvarende konsultasjoner. I artikkel IV ble det konkludert at intervensjonen ikke signifikant påvirket studiens forhåndsdefinerte utfallsmål

som var barnets daglige inntak av grønnsaker og mettet fett samt kroppsmasseindeks. Intervensjonen påvirket imidlertid foreldrenes ønske om informasjon om barnets kosthold på en positiv måte. Innenfor helsesykepleierpraksis og relatert forskning bør man være klar over at foreldre eventuelt kan se på kostholdsveiledningen som positiv uten at dette har sammenheng med at de velger et sunnere kosthold for sitt barn.

Summary

Counselling on food and feeding practices by public health nurses at child health centres is the focus of this thesis. The public health nurses in this complex intervention study used a communication tool about diet in their counselling of families of under-school-aged children. The overall aim of the study was to contribute to the children's healthy diet, particularly their intake of vegetables, based on counselling. A prerequisite was that this intevention should be sustainable, fitting into the time frames of the existing consultations. The study consists of papers I-IV comprising four subsequent sub-studies. **Paper I**, a modified scoping review, presents updated information about counselling of parents of children aged 0-2 years on the child's healthy diet in preventive health care settings. The results of this paper indicate that dietary counselling should be anticipatory and adapted to the particular child and family. **Paper II**, a cross sectional study, investigated whether there is an association between children's diet and the parents reporting that they avoided giving appropriate food items to their 10-month-old because of their fear that the child might react with allergy or hypersensitivity. The results in paper II were based on semi-quantitative food frequency questionnaires that the parents completed before attending the 10-month consultation at the child health centre. A statistically significant relationship emerged between parental avoidance of introducing some food items due to fears of allergy and hypersensitivity in their child and the parents' desire for more information about food for their child. This was not associated with any dietary restrictions regarding their child. **Paper III** was based on individual interveiews and used an interpretive description approach. It aimed at investigating the parents' experience of attending child health centre consultations when their child was aged 10 -18 months and the the use of a communication tool about diet in the consultations. The findings in paper III indicated that parents who were positive to the health authorities' dietary recommendations before visiting the child health centre were most satisfied with the perceived dietary counselling. Parents who addressed questions related to issues such as the child's food allergy or breastfeeding often experienced limited support. **Paper IV**, presenting a cluster randomized controlled trial, investigated the effect of a communication tool about diet concerning the child's diet at two years of age. The communication tool was used in consultations at the child health centre and compared with standard consultations. In paper IV, the conclusion was that the intervention did not significantly impact the predefined outcome measures - the child's daily intake of vegetables and saturated fat or the body mass

index. However, the intervention positively affected the parents' desire for information about their child's diet. Public health nursing policy and -research should be aware that parents might perceive counselling about food and feeding practices positively, however without changing components of their child's diet in a healthier direction.

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List of papers

This thesis is based on the following four papers:

I Holmberg Fagerlund, B., Helseth, S., Owe, J., & Glavin, K. (2017). Counselling parents on young children's healthy diet: A modified scoping review. *Journal of Clinical Nursing, 26*(23-24), 4039-4052.
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II Holmberg Fagerlund, B., Helseth, S., Andersen, L. F., Småstuen, M. C., & Glavin, K. (2019). Parental concerns of allergy or hypersensitivity and the infant's diet. *Nursing Open*, 6(1), 136-143. DOI: **http://dx.doi.org/10.1002/nop2.195**

III Holmberg Fagerlund, B., Helseth, S., & Glavin, K. (2019). Parental experience of counselling about food and feeding practices at the child health centre: A qualitative study. *Journal of Clinical Nursing*, 28(9-10), 1653-1663.
DOI: **http://dx.doi.org/10.1111/jocn.14771**

IV Holmberg Fagerlund, B., Helseth, S., Andersen, L. F., Småstuen, M. C., & Glavin, K. (2019). The use of a communication tool about diet at the child health centre: A cluster randomized controlled trial. *Nursing Open*, 00: 1–16.
DOI: **http://dx.doi.org/10.1002/nop2.498**

The papers will be referred to by the Roman numerals shown above.

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Abbreviations

BMI	Body mass index (kg/m²)
CHC	Child health centre
CONSORT	CONsolidated Standards Of Reporting Trials
COREQ	COnsolidated criteria for REporting Qualitative studies
cRCT	cluster Randomized Controlled Trial
E%	Per cent of energy intake
ETCS	European Credit Transfer and accumulation System
EQUATOR Network	Enhancing the QUality And Transparency Of health Research
HEIA	Norwegian Health in Adolescents cohort study
LDL	Low-density lipoprotein
MRC	Medical Research Council
PHN	Public Health Nurse
PRISMA	Preferred Reporting Items for Systematic reviews and Meta-Analyses
REC	The Norwegian National Research Ethics Committees
SFA	Saturated fatty acid
SFFQ	Semi-quantitative food frequency questionnaire
SOMAH	**S**amtaler **o**m **ma**t på **h**elsestasjonen (a Norwegian-language acronym for: Conversation about food at the child health centre)
WHO	World Health Organization

1.0 INTRODUCTION

The focus of this thesis is counselling about food and feeding practices by public health nurses (PHNs) at child health centres (CHCs). In this complex intervention study, the PHNs used a communication tool about diet in consultations with families of under-school-aged children. The overall aim was to contribute to young children's healthy diet, particularly their intake of vegetables, based on nutrition counselling.

During infancy, children are completely dependent on their parents' understanding, efforts and practices regarding food and feeding practices among other things. Good parental understanding of their infant's nutritional requirements is essential to support making appropriate decisions for their child (Hobbie, Baker, & Bayerl, 2000). Many mothers of infants experience challenges when transitioning from milk feeds for their children to family foods (Harrison, Brodribb, & Hepworth, 2017; Harrison, Hepworth, & Brodribb, 2018). Findings from a focus group study among PHNs at CHCs indicated that counselling during the child's transitioning to family foods was often perceived as particularly challenging (Holmberg Fagerlund, Pettersen, Terragni, & Glavin, 2016). Generally, there are few studies focusing on interventions for PHNs counselling parents on food and feeding practices during their child's first two years of life (Redsell et al., 2016; Waters et al., 2011).

Because food behaviour and food preferences established in childhood and adolescence tend to persist significantly into adulthood, nutritional education should be targeted early in the life span in order to prevent many diet-related diseases (Craigie, Lake, Kelly, Adamson, & Mathers, 2011; Mikkilä, Räsänen, Raitakari, Pietinen, & Viikari, 2005). Findings from a longitudinal birth cohort study indicated that children may develop biological risk factors for non-communicable diseases at six years of age (Kjellberg et al., 2019). Hence, development of interventions aimed to prevent problems such as obesity in children could help to prevent subsequent obesity in adulthood and adverse socioeconomic, psychosocial and health sequelae as associated with obesity (Craigie et al., 2011).

A previous study among preschool children aged three to six years indicated that children were more likely to eat unhealthy foods if their parents used Negative Feeding Practices, e.g. food as emotional regulation, food as child control, or food as reward. This was despite the parents' reported goals of feeding the child in a healthy way and based on natural food content (Kiefner-Burmeister, Hoffmann, Meers, Koball, & Musher-Eizenman, 2014).

A literature review by Marty, Chambaron, Nicklaus, and Monnery-Patris (2018) highlighted that until now it has often been assumed that providing nutritional information would drive healthier food choices in children. However, a one-sided cognitive approach seems to have limited impact on eating and healthy food choices. It might even be counter-productive, leading children to avoid healthy foods. Accordingly, new directions suggested for further research involve testing the efficacy of novel interventions that emphasize learning to derive pleasure from eating. This might offer an opportunity related to shaping healthy eating behaviours from early childhood (Marty et al., 2018).

A Norwegian questionnaire study (Kristiansen, Bjelland, Himberg-Sundet, Lien, & Andersen, 2017a) investigated the vegetable consumption of children, three to five years old, and associations with sociocultural home environmental factors. In addition, the researchers observed the children's vegetable intakes at two meals during one day in the kindergarten. Findings indicated that the child's vegetable intake was positively associated with the following sociocultural home environmental factors: child involvement (e.g. the child helping to select vegetables in the store), practical role model (e.g. parental modelling by eating vegetables), and family demand (e.g. the parent insist that the child should sit at the table until all vegetables on his/her plate are eaten). Contradictory, the child's vegetable intake was negatively associated with negative parental attitudes (e.g. the parent does not like vegetables), reward (the parent adds something to make the vegetables taste better) and reactive encouragement (e.g. the parent encourages the child to try a few bites of vegetables) (Kristiansen et al., 2017a). Physical home environment factors positively associated with vegetable consumption in this sample were availability (e.g. "at home we usually have vegetables for dinner every day") and accessibility of vegetables at home (e.g. "my child helps her-/himself to vegetables"). A physical home environment factor negatively associated with vegetable consumption was serving barriers (e.g. "it is difficult to use vegetables in daily cooking"). Purchase barriers (e.g. "vegetables do not look fresh/fine in the store") were not associated with reduced vegetable consumption (Kristiansen, Bjelland, Himberg-Sundet, Lien, & Andersen, 2017b).

In a Finnish food frequency questionnaire study among parents of three- to six-year old children was seen that high availability of vegetables in the home was not associated to hinder children from the intake of available unhealthy sugar-enriched foods. Thus, to prevent their children's intake of unhealthy food, parents should restrict the availability of unhealthy foods in their home (Vepsäläinen et al., 2018). A previous study among 11-12-year old

children in the United Kingdom, completing a food frequency questionnaire highlighted the importance of a healthy home environment based on factors such as greater availability and accessibility of vegetables for promoting vegetable intake. TV viewing could be related to both healthy and unhealthy snacking behaviours (Pearson, Griffiths, Biddle, Johnston, & Haycraft, 2017) based on the availability of healthy food. A tracking pattern of dietary behaviours among 11–13 - year old schoolchildren was observed on the basis of longitudinal data from the Norwegian Health in Adolescents cohort study (HEIA) (Totland et al., 2012). This indicated the importance of promoting a healthy diet at an early age (Totland et al., 2012).

1.1 Organization of the thesis

The study's focus is presented in chapter 1. Chapter 2 addresses the basic concepts used in the thesis and provides a description of the context of the study. Chapter 3 gives a presentation of the aims and objectives. Chapter 4 outlines and describes the basic scientific structure of the work, its methodological underpinnings, the design of study and the practical implementation of the research. In chapter 5, the study results are presented. Chapter 6 comprises the discussion based on considerations related to methodology and to the study findings. The conclusions and further implications based on this study are presented in chapter 7.

2.0 BACKGROUND

In this chapter, the basic elements of public health and health promotion related to some ethical principles are presented. Further, central aspects of public health nursing and counselling as related to both health promotion and food and feeding practices are discussed, as are the development of children's eating habits and the promotion of a healthy diet for children are presented. In particular, I present the rationale for focusing on vegetables and saturated fat consumption as well as body mass index (BMI).

2.1 Public health and health promotion

Public health is defined as promoting and protecting the health of populations in the society undertaking activities to ensure the conditions in which people can be healthy (Faden & Shebaya, 2015; Turnock, 2009). These activities include organized community efforts of prevention, and identifying and countering threats to the health of the public (Turnock, 2009). Public health has its basis in many disciplines, for instance in epidemiology, biostatistics and health service administration. Health promotion is one of many elements in public health (Kemm, 2015). Health promotion is an intervention strategy that seeks to eliminate or reduce exposure to harmful factors by modifying human behaviours (Turnock, 2009). Any combination of health education and organizational or political interventions designed to facilitate behavioural and environmental adaptions to improve or protect health are thus related to health promotion. The process of health promotion enables individuals and communities to control and improve their own health for instance by developing solutions and working in partnerships (Turnock, 2009).

The World Health Organization's (1986) Ottawa Charter for Health Promotion acknowledged the importance of defining health as a basis for health promotion. This implicated a positive view of health and people aimed at expanding their potential for living without focusing solely on how to avoid being diseased (Breslow, 1999). Kemm (2015) summarizes that the aim of health promotion is to promote health and to prevent disease (ill health). Hence, several actions targeting health promotion also achieve specific disease prevention. For instance, health promotion initiatives to ensure appropriate nutritition may help to prevent cardiovascular disease (Breslow, 1999).

Numerous factors, so called determinants, indicate how the context of people's lives determine their health (Wilkinson & Marmot, 2003; World Health Organization, 2019). The determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviours (World Health Organization, 2019). According to United Nations General Assembly (1948), health can be seen as a human right. However, the resources for health are limited (Kemm, 2015). Accordingly, it is unlikely that all needs for everyone's health will be met. Every human's right to health should be interpreted as the right to participate in a fair process, without discrimination, for deciding how limited resources should be allocated. Health promotion could be a central contributor to this process by reducing inequity, which is a key aim of public health (Kemm, 2015). The ethical basis of health promotion is justice, underpinning health equity (Kemm, 2015).

All health promoters are guided by two basic ethical presumptions, beneficence and nonmaleficence (Kemm, 2015). Beneficence means that one ought to prevent evil or harm, remove evil or harm, or do or promote good. This requires taking action by helping. Nonmaleficence means that one ought not to inflict evil or harm. This requires intentionally refraining from actions that cause harm (Beauchamp & Childress, 2009). Two central moral principles of health promotion, autonomy and liberty, might be violated if a health promoter tries to make choices for others (Kemm, 2015). Utilitarianism, invoked in the axiom "It is the greatest good for the greatest number of people which is the measure of right or wrong" by J. Bentham (1776) in Kemm (2015, p. 113) is often considered the underlying ethic of public health and thus relevant to health promotion. Utilitarianism might however be challenging for instance if providing for the interests of the majority might override minorities' rights (Beauchamp & Childress, 2009).

In recent years, public health policy and liberal governments have increasingly looked to influence health behaviours among people in desirable directions, called nudges to influence. Based on libertarian paternalism (Faden & Shebaya, 2015), nudging aims to influence individuals to make decisions in ways that will improve their lives, without blocking other choices (Kemm, 2015). People are accordingly influenced to behave in ways that are in their best interest and healthy for them (Faden & Shebaya, 2015).

2.2 Public health nursing in the municipalities

To be admitted as a PHN student in Norway, a person must have a bachelor's degree in nursing and one year of practice as a registered nurse. One full-time year of PHN education consists of 60 European Credit Transfer and Accumulation System Credits (ETCS), according to the government's "Regulations on the framework for PHN education in Norway" (Ministry of Education and Resarch, 2005). Public health nursing combines the theory and practice of nursing and the theory and practice of public health. The Public Health Nursing Section in the Public Health Association in the US defines public health nursing as "the practice of promoting and protecting the health of populations using knowledge from nursing, social and public health sciences" (American Nurses Association, 2013). This population-focused practice targets health promotion and disease and disability prevention by creating conditions in which people can be healthy (Schoon, Schaffer, & Garcia, 2011).

Public health nursing is population-based because it foucusses on the population as a whole to determine the priority health needs of a community (Schoon, Schaffer, et al., 2011). A population-based approach to care is grounded in an assessment of community health, considering the broad determinants of health, and emphasizing health promotion and prevention. Interventions take place at multiple levels, including the individual or family level, the community level and the population level (Keller, Strohschein, Lia-Hoagberg, & Schaffer, 2004). Population is defined as a collection of individuals having some characteristics in common (Schoon, Garcia, & Schaffer, 2011). An essentially healthy population is called a *population of interest*, indicating that aspects might be improved in order to promote or protect health in this population. A *population at risk* is a population with a common identified risk factor or risk exposure that constitutes a threat to health (Minnesota Department of Health, 2001).

A population-based focus is central in both the earlier and newly updated versions of the *Norwegian national regulations for health promotion and disease-prevention services in CHCs, school health services and health clinics for young people* (Norwegian Directorate of Health, 2004, 2017). These national regulations are the basis for PHNs' service in Norway, representing a link in terms of public health between the authorities and the population (Dahl, 2018).

Current public health nursing practice in Norway is widely individual-based and takes an individual disease-prevention approach. The lack of language to articulate population interventions has been identified as a barrier to maintaining a population focus among PHNs (Dahl, 2018). Even at the administrative level of public health nursing practice in Norway, resources for population-based health promotion and disease-prevention focus seem to be lacking. It has thus been suggested that more skills and tools need to be directed towards implementing health promotion and population-based interventions in the public health nursing practice (Dahl, 2018).

In Norway, PHNs provide health promotion services at the CHCs, in the school health services and at youth health centres. The school health services are available at the primary, lower secondary and upper secondary schools in Norway. This service usually includes a PHN, a general practitioner, a psychologist and a physiotherapist, as well as other health professionals. The school health service is subject to the duty of confidentiality. The aim of promoting health to all pupils is a target based on, among other things, collaboration with schools (The Norwegian Directorate of eHealth, 2015). The youth health centres in the municipalities are usually a multidisciplinary service for young people up to 20 years of age with opening hours in the afternoons and evenings. These centres are commonly operated by PHNs, a general practitioner and a psychologist. They provide counselling related to themes like contraception, mental and social problems, drugs and alcohol, and so forth (The Norwegian Directorate of eHealth, 2015).

CHCs are a focus of this thesis. CHCs are longstanding, legally regulated institutions for preschool children and their families in the municipalities in Norway. The PHNs are designated as contributors in performing the services at CHCs according to the jurisdiction (Ministry of Health and Care Services, 2011). In addition, each CHC usually employs a general practitioner and a physiotherapist. In addition, CHCs usually offer prenatal services for pregnant mothers and their partners (The Norwegian Directorate of eHealth, 2015), which are beyond the scope of this thesis.

CHCs offer extensive and freely available preventive health care and health promotion for preschool children and their families in the municipalities: these programmes are accessible to everyone and adapted to the needs of individuals, irrespective of social standing or background (Norwegian Directorate of Health, 2017). Almost all parents use these CHCs,

although it is not mandatory and have regular encounters with the PHNs (Statistics Norway, 2016).

Usually the first contact between a family and their PHN is established during the PHN's home visit to the famliy and their newborn child, seven to 10 days after birth (Norwegian Directorate of Health, 2017). From birth until the start of school children have 14 regular consultations at the CHC with their parents (Norwegian Directorate of Health, 2017). The following topics are central during these consultations: child motor and psychosocial development, breastfeeding, vaccination, nutrition, language development, dental health, the parental role, and the parent cohabiting and interacting with their child (Norwegian Directorate of Health, 2017; The Norwegian Directorate of eHealth, 2015). Moreover, information about domestic violence and the child's temperament, as well as the child's weight and length stays central during the CHC consultations (Norwegian Directorate of Health, 2017). When necessary to provide for optimal support for a child's health concerns, the CHCs collaborate with municipal psychologists, preschool staff, family therapists, the child welfare service and the pedagogical psychological service (The Norwegian Directorate of eHealth, 2015).

In an interview study, PHNs expressed that they sometimes perceived ethical dilemmas because they saw required regulations from the authorities as obstacles to providing customized care (Dahl, Andrews, & Clancy, 2014). Because of perceived time pressure, task overload, and limited resources, PHNs did not always feel fully prepared for their consultations. This lack of preparation in turn caused the PHNs to compromise the basic value of their work and to prioritize work in ways that they subsequently possibly regretted (Dahl, Clancy, & Andrews, 2014).

2.3 Counselling

A central part of health promotion, counselling (Schoon, Garcia, et al., 2011), is defined as an interpersonal relationship established on an emotional level to increase or enhance the capacity of self-care and coping (Garcia, Schaffer, & Schoon, 2014). The counsellor, whose role is to support, must build a relationship with the client to be counselled based on empathy and respect (Kemm, 2015). Counselling engages on a community, systems, family or individual level (Schoon, Garcia, et al., 2011). An overall aim of counselling is to provide the

opportunity to live in a satisfying and resourceful manner. Counselling may be directive or non-directive and consists of three steps: identifying a problem, setting a goal and facilitating action. In non-directive counselling, the client identifies what changes to make and how this should be done. In the context of health promotion, counselling is usually directive, with the counsellor encouraging changes in habits relevant to health. Providing encouragement, however should not turn into giving advice. When an adviser suggests the need for change to the client, including how this change should be accomplished, it is usually unlikely to be a productive way of acting. To achieve purposeful change, a client has to be involved in identifying the problem and exploring possible ways of changing (Kemm, 2015).

According to Miller and Rollnick (2013), counselling inspired by motivational interviewing resembles directive counselling and might be useful for helping people to recognize and do something about a present or potential health-related problem (Kemm, 2015). This style of counselling is characterized by the counsellor's expression of empathy ragarding the collaborator's needs, which strengthens confidence and avoids any persuading (Wong, 2014). Further, motivational interviewing implicates counselling by creating opportunities for cooperation. The purpose is to achieve a focus for a mutual project between two collaborators (Barth, Børtveit, & Prescott, 2013), the counsellor and the client. If the client wishes, the counsellor will provide help to change. The counsellor allows the client to decide whether there is a problem and, if so, whether and how they want to change. Support is given to build the client's belief in their ability to make the changes under consideration (Kemm, 2015).

According to a qualitative study among Norwegian PHNs working in CHCs, the counselling provided by PHNs comprises giving information, teaching and giving advice in order to increase parents' control over factors that affect their lives (Tveiten & Severinsson, 2004). The PHNs want to help empower parents in their own decision-making processes. Occasionally, the PHNs are nevertheless the dominant actors in encounters with parents, which is contrary to the aim of facilitating an encounter between equal parties (Tveiten & Severinsson, 2005).

2.4 Counselling on food and feeding practices at the child health centre

According to the Norwegian Directorate of Health's (2016b, 2017) recommendations, counselling on food and feeding practices provided by PHNs is a central part of all 14 regular CHC consultations from birth and until school age. Parents' attitudes about their children's eating behaviour (Scaglioni, Salvioni, & Galimberti, 2008) and their basic understanding of their child's nutritional requirements (Hobbie et al., 2000) should be the basis for this counselling.

Newly updated national guidelines on infant nutrition (Norwegian Directorate of Health, 2016b) recommend that infants receive breast milk exclusively during the six first months of life, with a supplement of vitamin D from four weeks of age, assuming that the infant and mother are satisfied. These recommendations correspond to the World Health Organization's recommendations on breastfeeding (World Health Organization, 2009, 2016a). If a supplement to or replacement for breast milk is needed before four months of age, the only food alternative is a breast-milk substitute, as defined by the World Health Organization (Norwegian Directorate of Health, 2016b; World Health Organization, 2016b). After the age of four months, solid foods should be introduced if needed to supplement breast milk. Until the age of one year, children should consume milk in the form of either breast milk or a breast-milk substitute (Norwegian Directorate of Health, 2016b). In conjunction with the counselling about infants' food and feeding provided at CHCs, a booklet based on the updated guidelines is available to be distributed to the parents at CHCs or downloaded from the internet (Norwegian Directorate of Health, 2018b).

The Norwegian authorities' general dietary recommendations about healthy food choices after a child's first year are available on the internet (National Nutrition Council in Norway, 2011; Norwegian Directorate of Health, 2016a). There are guidelines emphasizing aspects such as the duty of PHNs to promote healthy living and provide counselling about food and feeding practices (Norwegian Directorate of Health, 2010). However, themes related to children's transition to family foods and challenges related to developments in eating after infancy are lacking in the guidelines and recommendations. This applies both to the older and the newly updated version of dietary guidelines used in CHCs (Norwegian Directorate of Health, 2004, 2016b, 2017).

Findings from focus group studies indicate that PHNs reported possessing limited strategies and tools for addressing issues regarding food and feeding practices in their everyday practice in the CHCs. Additional training on these themes, within both PHN education in Norway and in service education for fully trained practising PHNs was presented as a proposal to remedy this (Holmberg Fagerlund et al., 2016).

2.5 Development of children's eating habits

Infants' eating habits develop gradually and in phases from breastfeeding initiation or formula to the introduction of solid foods and the successive transition to family food habits. This development is based on the child's biological maturation and experiences (Schiørbeck, Birketvedt, & Helland, 2008). A child will follow certain milestones related to the development of self-feeding (Carruth, Ziegler, Gordon, & Hendricks, 2004). Among other things, tasting experiences are important for children to learn to like food (Schiørbeck et al., 2008). Weaning, or the gradual introduction of beverages and foods other than breast milk or commercial infant formula, starts when milk is no longer nutritionally sufficient for the child (Schwartz, Scholtens, Lalanne, Weenen, & Nicklaus, 2011). Optimal introduction of weaning foods will impact the development of healthy eating habits (Birch & Ventura, 2009). The development of children's food preferences is complex, involving an interplay of congenital, familial and environmental factors (Scaglioni et al., 2008). Healthy eating behaviours depend on both the availability of healthy food and responsive parenting behaviours that reflect reciprocity between the child and the caregiver (Black & Aboud, 2011). This is conceptualized as a four-step process: 1) the caregiver creates a routine, structure, expectations, and emotional context that promote interaction 2) the child responds and signals to the caregiver 3) the caregiver responds promptly and in an emotionally and developmentally appropriate, supportive manner 4) the child experiences predictable responses (Black & Aboud, 2011).

From an evolutionary standpoint, infants have unlearned, predisposed preferences for sweetness and saltiness. Because children readily accept these tastes, they may be likely to have a diet too high in sugar and salt. Preferences for other new flavours, for instance bitter or sour-tasting foods, need to be learned (Birch & Ventura, 2009). Breastfeeding may contribute to the child's initial acceptance of food, for instance bitter-tasting vegetables, if the breastfeeding mother regularly has eaten similar-tasting food (Forestell & Mennella, 2007).

There is a period, particularly in the second year of life, when children may have a tendency to avoid novel foods (neophobia). This time is also crucial for the child's transition to the family's food (Cashdan, 1994; Scaglioni et al., 2008).

2.6 Promoting a healthy diet for children

Parental food preferences are tremendously influential in creating good eating habits in children, as is eating together (Scaglioni et al., 2008). Positive parental modelling may be a better method than attempting to control what a child eats in order to improve the child's diet (Scaglioni et al., 2008). There are two particular aspects of control: restriction and pressure. Restricting a child's access to junk foods or restricting the total amount of food that the child gets are ways of exercising control. An example of pressure might be compelling a child to eat healthy foods, usually fruits and vegetables, or pressuring them to eat enough food (Scaglioni et al., 2008).

A longitudinal study by Gregory, Paxton, and Brozovic (2011) following 60 mothers and their children over 12 months found that the frequency with which 2-year-old children consumed fruits, vegetables and sweets was significantly predicted by their consumption of each of those foods at the age of 1year. Moreover, less frequent pressure on 1-year old children were to eat a certain way the more frequent use of healthy modelling among mothers were significant predictors of frequency of vegetable consumption at 2 years of age. Hence, parents should focus on modelling healthy eating behaviour by enjoying a healthy and varied diet themselves to help their children learn healthy eating habits from an early age (Gregory et al., 2011). Based on a prospective longitudinal study, Coulthard, Harris, and Emmett (2010) emphasized that serving home-cooked fruit and vegetables to children at six months, predicted their consumption of fruits and vegetables at seven years of age. A similar association was not seen if the fruits and vegetables consumed at six months were industrially prepared baby food (Coulthard et al., 2010).

It is recommended that childhood obesity interventions, including nutrition education, take place before school entry because most programmes so far have focused on school-aged children and have had little success (Birch & Ventura, 2009).

A previous systematic review of qualitative studies indicates that parental factors that promote obesogenic diets among young children include negative parent/family/peer

modelling, lack of knowledge, time constraints, using food as reward, affordability and concerns about the child's health (Mazarello Paes & Ong, 2015). Another systematic review, focusing on interventions preventing childhood obesity in the period from conception through the age of 24 months, concluded that few effective interventions currently exist for this age group. Out of four interventions during infancy – a period that is critical for the development and prevention of childhood obesity – published between 1 January 1980 and 12 December 2014, only one demonstrated a significant effect (Blake-Lamb et al., 2016). One intervention, starting in infancy, showed decreasing BMI scores up to 3 years of age. However, this study was limited by its small sample size (Blake-Lamb et al., 2016; Harvey-Berino & Rourke, 2003). The aforementioned study was the only study with participants representing the age of infancy, which was included in an earlier intervention review of the Cochrane Collaboration "Interventions for preventing obesity in children" (Harvey-Berino & Rourke, 2003). The majority of the studies included in this Cochrane Collaboration review, targeted children aged 6–12 years (Waters et al., 2011). In another earlier Cochrane Collaboration review, "Interventions for increasing fruit and vegetable consumption in children aged 5 years and under", only one of the included studies targeted children younger than two years old throughout the intervention period (Wolfenden et al., 2012). A recently published systematic review, "Effectiveness of universal parental support interventions addressing children's dietary habits…", covering the time span from 1990 to 2013 includes no cases with study participants aged two years or younger throughout their participation in the intervention (Kader, Sundblom, & Elinder, 2015).

A living systematic review (an approach that involves continually updating and incorporating new evidence when available) from the Cochrane Collaboration entiteled "Interventions for increasing fruit and vegetable consumption in children aged five years and under" was recently published. This review comprises ten articles and one conference abstract on interventions targeting children younger than 2 years (Hodder et al., 2018). The conclusions indicate that evidence of effective interventions for this age group is sparse and of very low quality. This suggests that rigorous research methods should be adapted to advance the field of evidence. In the following, the main findings from studies related to children younger than 2 years old in this Cochrane Collaboration review (Hodder et al., 2018) are presented briefly.

An intervention based on weaning exclusively with vegetables instead of fruits resulted in higher vegetable consumption at 12 months of age. However, at the age of 23

months this effect had disappeared (Barends, de Vries, Mojet, & de Graaf, 2014). This might be caused by food-neophobia (Barends et al., 2014). Early exposure to vegetable flavours during weaning increased infants' acceptance and intake of vegetables (Hetherington et al., 2015). The mothers in the intervention group appreciated the structure and guidance regarding the introduction of vegetables and advice on how to identify and deal with food refusal and satiety cues that they received while participating in the intervention. The mothers received vegetable purees or instructions on how to prepare them easily. This encouraged them to feed their infants with vegetables during the complementary feeding period (Hetherington et al., 2015). Based on an intervention, it was concluded that repeated exposure to a novel food item increased infants' acceptance of that food item (Sullivan & Birch, 1994). Breastfeeding seems to facilitate this acceptance. Findings by Mennella, Nicklaus, Jagolino, and Yourshaw (2008), suggest that having repeated opportunities to taste both particular food items and a variety of foods is positive for infants because this may promote willingness to eat fruits and vegetables (Mennella et al., 2008). Providing repeated exposure by offering foods several times during complementary feeding was seen as effective and simpler to implement than flavour-flavour learning. Repeated exposure was more effective than flavour-nutrient learning for increasing vegetable acceptance. Flavour-flavour learning means that a savoury flavour is given in advance to prepare for a new flavour. Flavour-nutrient learning is when a high energy density food item, which induces a positive post-ingestive consequence, prepares a child for a new flavour (Remy, Issanchou, Chabanet, & Nicklaus, 2013).

One educational intervention consisted of four to five educational workshops on Mediterranean diet and related themes for parents of children aged 1–2 years old. This led to an increased adherence to the Mediterranean diet among the participants (Roset-Salla, Ramon-Cabot, Salabarnada-Torras, Pera, & Dalmau, 2016). Another intervention on complementary and responsive feeding education among food-secure rural Indian families resulted in, among other things, improved dietary intake for children under two years (Vazir et al., 2013). A family-based healthy lifestyle intervention among children aged 9–24 months resulted in healthier weight outcomes. However, dietary-related behaviours developed in an unhealthy direction in the intervention and control groups (Verbestel et al., 2014). Trained volunteers promoting infant feeding practices during monthly home-visits to mothers had no effect on infants' nutrient intakes. This study was ongoing in disadvantaged districts of the inner city of London (Watt et al., 2009).

2.7 Rationale for focusing on vegetables and saturated fat

Establishing healthy feeding practices during infancy and childhood is essential to children's good health and development (Gidding et al., 2005). Establishing healthy eating habits early in life one might prevent diet-related diseases later in childhood and in adulthood (Schwartz et al., 2011). Health behaviours established in childhood tend to persist into adulthood (Craigie et al., 2011; Nicklaus & Remy, 2013).

Focusing on children's daily intake of vegetables and saturated fat, might be seen as reasonable because these nutritional factors are associated with the occurrence of cardiovascular disease in adulthood (Kaikkonen et al., 2013; World Health Organization, 2017). Coronary heart disease (= ischemic heart disease (NHS.UK, 2018)) and stroke (World Health Organization, 2018a), are the world's leading causes of death, accounting for a combined 15 million deaths in 2015. These diseases have been leading causes of death globally for in 15 years (World Health Organization, 2017).

The World Health Organization (World Health Organization, 2018b) recommends a minimum of 400 g of fruit and vegetables (excluding potatoes and other starchy tubers) per day for adults. According to the Norwegian diet recommendations, adults should consume at least 500 g of vegetables, fruit and berries daily. The amount of one serving is 100 g, half of which should consist of vegetables according to the Norwegian Directorate of Health (2019). For children, an intake of fruit, vegetables and berries of at least 250 g/day has been considered a target. Yet there are no guidelines regarding the suggested daily amount of these food items for children (National Institute for Health and Welfare in Finland, 2016).

In a national dietary survey conducted among adults in Norway, it was reported that the recommended level of at least 250 g of vegetables per day was achieved among on average 15% of men and women (Totland et al., 2012). Based on a national dietary survey in Norway among 4-year-old children a recommendation was set for this age group for an average daily intake of vegetables of 190 g. The study found the mean daily vegetable intake of 4-year-old participants to be 66 g on average (Hansen, Myhre, & Andersen, 2017).

In a national diet survey (Kristiansen, Andersen, & Lande, 2009) among two-year-old children in Norway in 2007, several positive features were detected in relation to a previous equivalent study from 1999. The mean intake of fresh and frozen vegetables in 2007 was 54 g/day, having increased from 33 g/day in 1999. Vegetables and potatoes in industrially produced children's food were not included in this calculation (Kristiansen et al., 2009).

Children's daily intake of vegetables was the focus of the current study. This focus was chosen because results from dietary surveys show that the mean vegetable intake among children and adults in Norway is lower than recommended (Norwegian Directorate of Health, 2018a). Further, bitter-tasting vegetables might be harder to accept than fruit initially during the transition to the family's food. This is due to infants' innate preference for sweet flavours according to Birch and Ventura (2009).

According to a current Cochrane Database Systematic Review, child feeding interventions appear to increase vegetable intake in children daily by 3.50 g on average. However, until now, this estimate has been based on low-quality evidence and is likely to change when future research is undertaken (Hodder et al., 2018).

The National Nutrition Council in Norway (2017) has reported that convincing evidence supports replacing saturated fatty acids (SFAs) with unsaturated fats in order to prevent cardiovascular disease. While there is some evidence on improvements in weight and BMI by reducing saturated fat intakes, there is no evidence of harmful effects of reducing saturated fat intakes on cancer mortality, cancer diagnoses or blood pressure (Hooper, Martin, Abdelhamid, & Davey Smith, 2015). A systematic review and meta-analysis study (Te Morenga & Montez, 2017) emphasizes that advice to reduce SFAs intake among children results in a significant reduction of low-density lipoprotein (LDL) cholesterol levels as well as diastolic blood pressure. Elevated cholesterol has been linked to cardiovascular disease in adults and preclinical markers in children; thus, reducing saturated fat intake from an early age may help to reduce the risk of cardiovascular disease later in life. There is no evidence of adverse effects on growth or development in children from reduced intake of saturated fat (Te Morenga & Montez, 2017).

In general, to prevent cardiovascular disease, Norwegian dietary guidelines recommend that SFA intake be lower than 10 E% which can be accomplished by replacing foods high in SFAs with foods high in unsaturated fatty acids or polyunsaturated fatty acids (National Nutrition Council in Norway, 2017). People who are currently healthy appear to benefit as much as those at increased risk of heart disease and stroke and those who already have had heart disease and stroke from replacing saturated fats with polysaturated fats. It is uncertain which type of unsaturated fat is preferable (Hooper et al., 2015). In Norway, the population's consumption of SFAs needs to be lowered about 25% from today's level to achieve the recommendation (National Nutrition Council in Norway, 2017). There is a strong

prioritization of this recommendation due to the large number of deaths caused by cardiovascular disease (National Nutrition Council in Norway, 2017; World Health Organization, 2017).

Dietary guidelines should thus continue to recommend diets low in saturated fat. Interventions targeting a reduction in the amount of saturated fat consumed by children and adolescents could result in cost savings and reduced risk of cardiovascular disease. Accordingly, reducing the intake of highly processed, fried and nutrient-poor fast foods and snacks, processed meats and fatty meats is a central concern. High-fibre fruits and vegetables, nuts and seeds, lean meats and reduced-fat dairy foods should be the core components of children's diets (Te Morenga & Montez, 2017).

Eighty-seven per cent of the two-year-old children in 2007 had a higher intake of saturated fat than recommended. The mean daily intake of saturated fat was 12.7 E% among two-year-old children in 2007 and thus higher than the recommended daily intake of ≤10E%. The mean daily intake of saturated fat among this age group had nevertheless decreased from 14.2 E% in 1999. Moreover, in 2007, children aged two years increasingly preferred skim milk as compared to 1999 (Kristiansen et al., 2009).

2.8 The child's body mass index (BMI)

The fundamental cause of overweight and obesity is an energy imbalance between calories consumed and calories expended. Worldwide, 41 million children under the age of five were overweight or obese in 2016 (World Health Organization, 2018c). The mean BMI of children and adolescents has plateaued in many high-income countries since around 2000, though at high levels. In Norway, about 15–20% of children aged eight to nine years old are overweight or obese (Norwegian Institute of Public Health, 2017). Based on statistics from 2015, the prevalence of overweight among children is no longer increasing. Differences in the population based on social determinants among overweight children are visible in Norway. For instance the prevalence of overweight children is 50% higher in rural than in urban areas. Among mothers with lower levels of education, the number of overweight children is 30% higher than among mothers with higher education (Norwegian Institute of Public Health, 2017).

Increased BMI is seen as a major risk factor for non-communicable diseases such as cardiovascular diseases, diabetes, musculoskeletal disorders and some cancers. Childhood obesity is associated with a higher risk of obesity, premature death and disability in adulthood. In addition, obese children experience an increased risk for breathing difficulties, increased risk for fractures and hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects. Both overweight and obesity are largely preventable. Increased consumption foods such as vegetables and fruit, as well as regular physical activity, might help at the individual level. However, individual responsibility can only have full effect if people have access to a healthy lifestyle (World Health Organization, 2018c)

Age- and sex-specific cut-off points for overweight are relevant to use among children from birth to 18 years of age. The cut-off for overweight is a BMI of 25. Among two-year-old children this is equivalent to a BMI of 18 adapted to the child's age and gender (Cole, Bellizzi, Flegal, & Dietz, 2000).

3.0 AIMS OF THE STUDY

The overall aim of the current study was to encourage a healthy diet for children, and particularly to increase vegetable intake, using a communication tool about diet in counselling provided by PHNs. When designing this study, we wanted the intervention to be sustainable. Hence, implementing it should not require additional resources or time commitment for the PHNs. Our intention was to use a communication tool about diet to adapt counselling about food and feeding practices as much as possible to correspond to the usual content and the existing time frame of regular CHC consultations.

The objectives of the four papers comprising this study were as follows:

1. To map and describe key information in existing research on counselling of parents of children aged 0–2 years on the child's healthy diet in preventive healthcare settings (cf. paper I).

2. To investigate whether there was an association between the children's current diet and the reported parental avoidance of giving their child appropriate foods at 10 months because they were afraid that the child might have an allergic reaction or hypersensitivity (cf. paper II).

3. To investigate parents' experiences of participating in CHC consultations when their child was aged 10, 12 and 15 or 18 months where the PHN used a communication tool about diet to provide nutritional counselling (cf. paper III).

4. To investigate the effect of a communication tool about diet used in a PHN intervention at CHC consultations with parents compared with standard consultations concerning the child's diet at two years of age (cf. paper IV).

4.0 METHODS AND MATERIALS

In this chapter, I first present the complex intervention framework and central assumptions related to the philosophy of science. Next, I explain central aspects related to identifying the evidence base and the design of the study and related concerns. Then, I provide a step-by-step description of the intervention followed by a qualitative assessment of the intervention. Lastly, I present the ethical issues encountered in the study and the mandatory registrations.

4.1 A complex intervention, the ontological and epistemological foundations

The current study fits the Medical Research Council (2008) definition of a comlex intervention because it includes several interacting components and presents practical and methodological challenges to overcome. Complex interventions have been widely used in public health practice and Figure 1 shows the four-stage iterative process of the Medical Research Council (MRC) framework for complex interventions: *develop-test-evaluate-implement* (Richards, 2015). As seen in Figure 1, the first three stages were applicable when conducting the current complex intervention study in accordance with the Medical Research Council (2008) guidelines.

Two central questions when evaluating a complex intervention study are *whether* the intervention works in everyday practice in comparison with usual treatment and *how* the intervention works, or in other words what are the causal mechanisms (Medical Research Council, 2008). Table 1 presents the outline for the current study according to the MRC framework for complex interventions.

The study's ontological assumptions were based on the pragmatism paradigm with a problem-centred orientation towards "what works" based on a pluralistic use of methods (Creswell & Plano Clark, 2011). Epistemologically, the study was based on a combination of quantitative and qualitative data. A pragmatic approach combining deductive and inductive thinking was used, being better suited to achieve the aim of the study than either type of reasoning alone (Creswell, 2015).

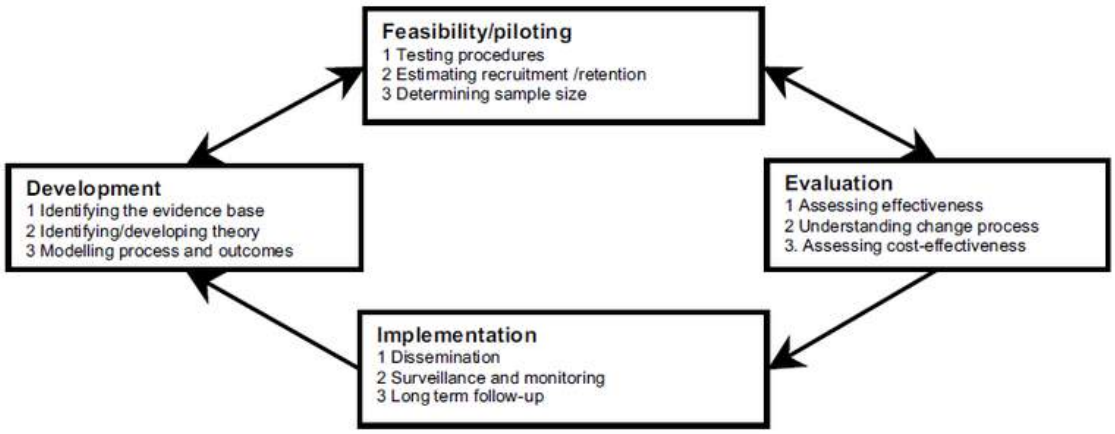


Figure 1. Key elements of the stages in the development and evaluation process of a complex intervention (Medical Research Council, 2008, p. 8)

4.2 The development phase

4.2.1 Identifying the evidence base

A modified scoping review (cf. paper I) was conducted in accordance with Arksey and O'Malley (2005) to identify all relevant research-based studies independent of study design. A systematic search was conducted in five databases between November and December 2015 using search terms based on the study's aims regarding counselling parents of children aged 0–2 years on the child's healthy diet in preventive healthcare settings, particularly related to public health nursing. The databases searched were EMBASE, Ovid Nursing, Ovid MEDLINE and Ovid OLDMEDLINE and CINAHL. In addition, records were identified in reference lists from the database search. Handsearching was performed from 1 June 2015 to 1 June 2016 in the journals *Pediatric Obesity* and *Child Health Nutrition* and in the databases Obesity+ obesity alerting system and Scopus. The data analysis of the identified records was based on an inductive qualitative content analysis approach, described by Elo and Kyngäs (2008).

In February 2019 a supplement search was conducted in the databases Ovid MEDLINE, CINAHL and Ovid Nursing with the same search terms, combinations of search terms, limiters and Boolean operators, as in the previous search. This search did not result in any new included articles.

Table 1. Components of the study related to relevant elements in the framework for a complex intervention (Medical Research Council, 2008)

The MRC framework for complex interventions	**Development phase**			**Feasibility test**	**Evaluation**	
Components of the study	Identifying theory: ❖ The basis of the intervention tool was in a previous SOMAH project, (2009 – 2013) (The Research Council of Norway, 2013) and focus group interviews with stakeholders (Holmberg Fagerlund et al., 2016). ❖ Elements of motivational interviewing were integrated in the intervention (Miller & Rollnick, 2013). ❖ Previously validated food frequency questionnaires were used as a basis for data collection (Kristiansen et al., 2009; Øverby, Kristiansen, Andersen, & Lande, 2009).	Identifying the evidence base: ❖ Conducted a modified scoping review (cf. paper I) ❖ Updated literature review in February 2019	Modelling process and outcomes ❖ Outcome selection based on indicators of children's and adult's healthy diet	Feasibility of the intervention tool: ❖ The selection and modification of images and the user's manual for the current study based on a feasibility and acceptability test (Richards, 2015) ❖ Determine sample size based on literature	Assessing parental concerns related to their child's diet at baseline: A survey based on baseline data (cf. paper II)	Assessing experiences and the outcomes of the intervention, ❖ Based on parental experience of intervention (cf. paper III) and ❖ A cluster randomized controlled trial based on the chosen outcome measures (cf. paper IV)

4.2.2 Design of the study

The current study, a two-armed parallel cluster randomized controlled trial (cRCT), was conducted in ten municipalities or clusters, five control municipalities and five intervention municipalities. The control and intervention clusters were randomly assigned. The participants followed the established consultation schedule of 10, 12 and 15–18 months. In the intervention municipalities, the PHNs used a communication tool about diet in the consultations, while in the control municipalities consultations were conducted as usual. Parents within the clusters answered a semi-quantitative food frequency questionnaire (SFFQ) on behalf of their child at baseline (T0) and endpoint (T1), on average 8–11 months after the end of the intervention (Figure 2) (cf. papers III, IV).

After participating in the intervention, a sample of parents in intervention municipalities were interviewed about their experiences with counselling about food and feeding practices and the communication tool about diet (cf. paper III). Table 2 provides a brief overview of the main methodological concerns of the four papers comprising the study.

A cross-sectional study was conducted among the participants (n=440) who had completed SFFQs at baseline. The aim of this study at baseline was to investigate a possible association between children's current diet and parents' reported avoidance of appropriate foods in the child's diet at the age of 10 months due to fears of allergic or hypersensitivity reactions (cf. paper II). Ahead of this study, a literature search was performed to identify previously published equivalent studies using search terms based on in the aim of the survey. On 1 February 2018 (test search) and 6 February 2018 searches were conducted in the databases MEDLINE, Food Science Source and PsycINFO. These searches identified 376 records from the databases after 97 duplicates had been removed. After a review of the studies' titles and abstracts, none of them were considered consistent with the aim of the current survey based on baseline data.

Figure 2. The timeline according to the child's age in the clusters consisting of intervention and control municipalities.

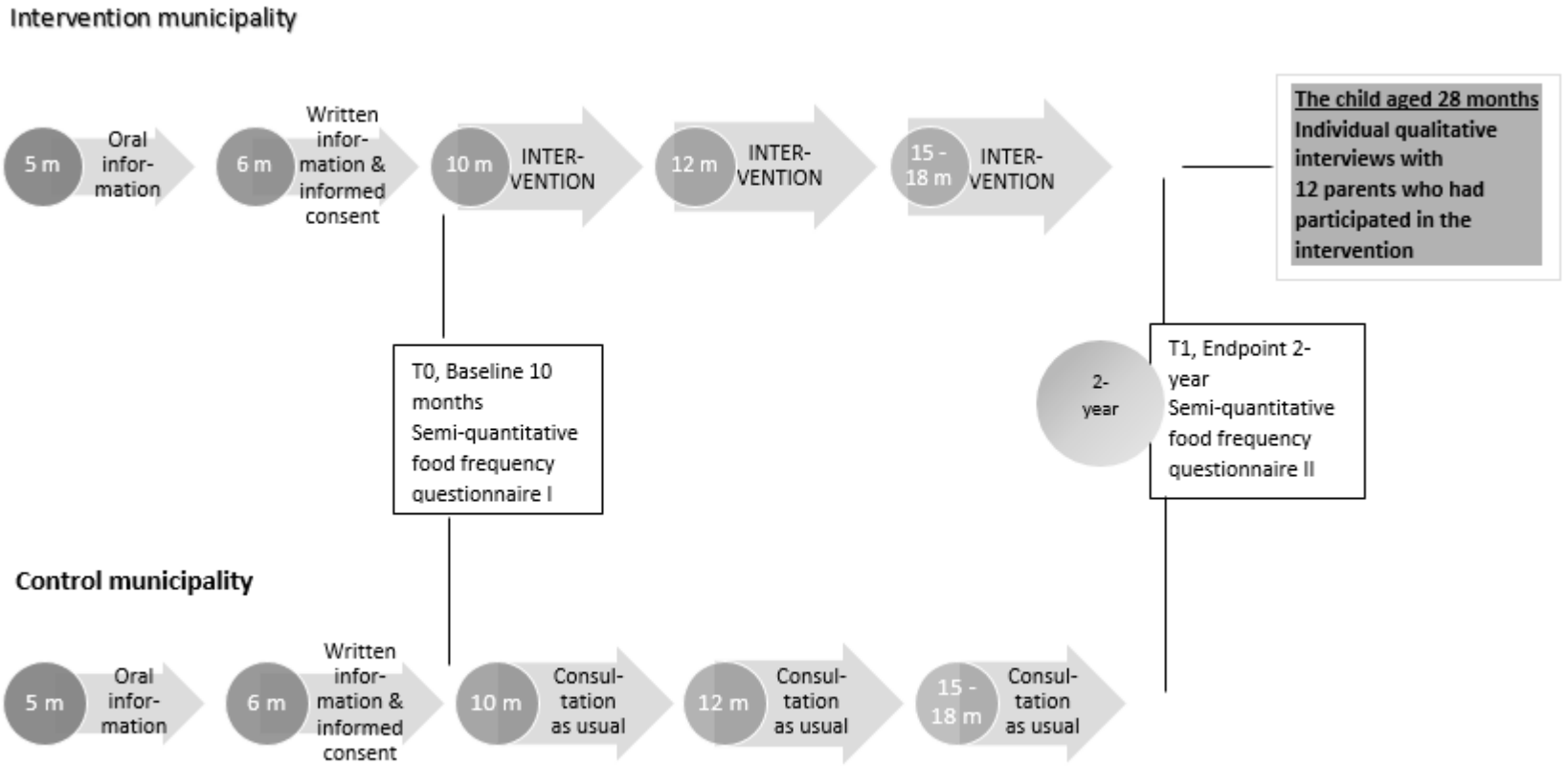


Table 2. An overview of the design, study sample, data collection, data analysis and the employed statistical analyses in the papers I–IV

	Paper I	**Paper II**	**Paper III**	**Paper IV**
Study design	Modified scoping review, based on the preferred reporting items for systematic reviews and meta-analyses (PRISMA), modified for the scoping review process	Cross-sectional study	Qualitative interview study, fulfilling the consolidated criteria for reporting qualitative studies (COREQ) checklist criteria	Cluster randomized controlled trial, fulfilling the consolidated standards of reporting trials (CONSORT) extension for cluster trials
Study sample	Selected empirical studies	440 parents in 10 randomly selected municipalities	12 parents who had participated in an intervention	140 parents in intervention municipalities and 110 parents in control municipalities
Data collection	Systematic searches in five databases using search terms based on aims	Parents completed a semi-quantitative food frequency questionnaire (at baseline). Average aged of child was 9.9 months old	Individual qualitative interviews, semi-structured and with a written topic guide. Average age of child was 28 months old	Parents completed a semi-quantitative food frequency questionnaire (at endpoint). Average age of child was 2.2 years old
Data analysis / Employed Statistical Analyses	Inductive qualitative content analysis	Descriptive statistics *Differences between groups:* Independent samples t-test Mann-Whitney-Wilcoxon test Pearson's Chi-Square test	Interpretive description approach	Descriptive statistics *Differences between groups:* Independent samples t-test Mann-Whitney-Wilcoxon test Pearson's Chi-Square test

4.2.3 Outcome selection

The selection of outcome variables was based on indicators of healthy diet for children and adults.

Primary outcome

The predefined primary outcome was daily intake of vegetables measured as grams of consumed vegetables per child, based on the completed SFFQs (cf. paper IV).

Secondary outcomes

The study evaluated several secondary outcomes: the percentage of energy intake (E%) of SFAs of the total daily energy intake of the child, based on the completed SFFQs, the child's BMI, based on the completed SFFQs as predefined outcomes. Lastly the number (proportion) of parents who reported a wish to obtain more information about their toddler's diet, based on the completed SFFQs (cf. paper IV), was evaluated.

4.2.4 Statistical analyses

Assessment at baseline and endpoint

At baseline T0, continuous data were described with median and range, categorical data with counts and percentages. Crude associations between pairs of categorical data were assessed using chi-square tests. Possible differences between groups regarding continuous variables were analysed using t-tests and the Mann-Whitney-Wilcoxon test if not normally distributed. To correct for multiple testing, $p<0.01$ was considered statistically significant (Paper II).

At endpoint T1, statistical analyses were performed due to the selected outcome variables based on data from the completed SFFQs (cf. paper IV). Continuous data were described with median and range (data with skewed distribution) or mean and standard deviation (normally distributed data). Categorical data were presented with counts and percentages. Unadjusted differences between intervention and control group were assessed with t-tests (for continuous normally distributed variables) and the Mann-Whitney-Wilcoxon test if the data were not normally distributed. Chi-square tests were performed when testing for association between pairs of categorical data. A correction for multiple testing was

performed and p-values <0.01 were considered statistically significant. All analyses were performed according to intention-to-treat (ITT) principles and no imputation of missing data was performed. All statistical analyses were performed using *IBM SPSS Statistics for Windows ®, Version 24.0., IBM Corporation®.*

4.2.5 Development and feasibility testing of the intervention tool

A previous SOMAH project at OsloMet – Oslo Metropolitan University (formerly Oslo and Akershus University College of Applied Sciences) in 2009–2013 aimed to develop an image-based approach to health and nutrition counselling at CHCs. This project was the background for the development of the intervention of the current study.

The SOMAH project targeted populations with an immigrant background and an increased risk of developing Type 2 diabetes. It was funded partly by the Norwegian Research Council, reference number NFR: SHP 194547/F30 (The Research Council of Norway, 2013). SOMAH is the Norwegian-language acronym for "**S**amtaler **o**m **ma**t på **h**elsestasjonen" ["Conversation about food at the child health centre"] (Garnweidner, 2013). The images in the SOMAH project were accompanied by a user's manual. These images were designed to be useful regardless of any health literacy level (Nielsen-Bohlman, Panzer, & Kindig, 2004) and to be appropriately related to different food cultures (The eQUITY project, 2013). A basic idea was that they should affirm encouragement in a positive way (The eQUITY project, 2013). The following official dietary recommendations were emphasized: considerable reduction of sugar intake from beverages, increased vegetable and fruit intake, reduced consumption of sugary foods, increased intake of whole grain products, sufficient intake of vitamin D, and increased use of fish (National Nutrition Council in Norway, 2011). Through the use of these images, parents were invited into a mutual dialogue about themes regarding food and feeding practices adapted to the family and the age of the child according to principles of motivational interviewing (Miller & Rollnick, 2013).

A feasibility and acceptability test (Richards (2015) was the basis for the selection and modification of image material from this SOMAH project to be used in the intervention tool ahead of the intervention in the current study. During this testing in June–September 2014 a first prototype of the intervention tool, a communication tool about diet and its user's manual

was used and evaluated among five PHNs at three CHCs corresponding to the aged-related consultations in the study. The PHNs were supposed to answer the following questions during the testing:

- How do you perceive the images?
- How do you perceive the images in relation to the text in the user's manual?
- How do you perceive the images and the related text as corresponding the development of the child?
- How do you assess the use of time in consultations when using the communication tool about diet?
- Do you have any suggestions for improvements?

This testing resulted in the selection of 20 images out of the 33 proposed images and led to the development of a communication tool about diet which was used as the intervention tool in the current study. An overview of these 20 images is given in Table 3 and the communication tool and the user's manual are presented in Appendix 11.

Table 3. An overview of the 20 images in the communication tool about diet

Themes at 10 months:	**The image presenting:**
1. "Infants learning to feed themselves"	A 1-year-old infant sitting in a high chair and using a bib, customized dishes and cutlery, finger food and appropriate food on a plate
2. "The Plate Model" **(Camelon et al., 1998)**	Proportions of the three food groups: carbohydrates (e.g. potatoes, pasta, bulgur), vegetables and proteins (e.g. meat, fish, beans, peas and eggs) and a spoon of plant-based oil
3. "Five a Day"	Depicting vegetables and fruit to encourage consumption of at least five portions of them each day
4. Whole grain bread	Depicting healthy alternatives and one example of an unhealthy choice
5. Healthy bread spreads	Depicting healthy alternatives and one example of an unhealthy choice
6. Healthy flavourings of natural yoghurt	Inspiring alternatives of berries and fruit to use as flavouring in yoghurt
7. Natural yoghurt as an alternative to sugary yoghurt	Comparing natural yoghurt without added sugar in relation to the amounts of added sugar in sweet yoghurt types
Themes at 12 months:	
1. "Infants learning to feed themselves"	The same image as at 10 months
2. Milk types	Contents of saturated fat in different types of milk
3. A portion of vegetables or fruit	A child's fist depicting portion size
4. Whole grain porridge and cereals	Depicting healthy alternatives and one example of an unhealthy choice
5. Healthy flavourings of porridge	Inspiring alternatives of berries and fruit to use as flavouring in porridge
6. Water as an alternative to sugary drinks	Comparing water to the amounts of added sugar in sweetened milk and types of industrially produced juice

Themes at 15–18 months:	
1. “Toddlers learning to feed themselves”	A toddler sitting in a high chair picking food from a plate with a fork
2. “Parent acting as role model”	A mother eating fruit in front of her toddler
3. Inspiration to choose vegetables	Presentation of 18 types of vegetable
4. Inspiration to choose fruit	Presentation of 18 types of fruit
5. Whole grain pasta	Depicting healthy alternatives and one unhealthy choice
6. Whole grain rice	Depicting healthy alternatives and one unhealthy choice
7. Flavoured versus unflavoured milk	Presenting unflavoured milk types in relation to flavoured ones

4.2.6 Sample size determination

The trial was powered to reveal a predefined change in vegetable intake between the intervention and control groups. According to the literature (cf. paper IV), children consume on average 50 g vegetables daily at the age of two years (Kristiansen et al., 2009). Thus, the daily intake of vegetables was expected to increase by 15 g in the intervention group as compared to the control group. Keeping the level of statistical significance at 5% and a statistical power of 80% (beta=20%), 176 children were needed in each group to reveal that the change described above was statistically significant. Attrition was expected, and 300 children were enrolled in each group to make sure that the study was sufficiently powered.

4.3 The intervention

4.3.1 Random sampling of clusters and recruitment procedures

Based on a systematic match, Statistics Norway had drawn samples of five pairs of municipalities (clusters) in Norway, selected at random (Appendix 3). Urban districts in larger towns were categorized as municipalities. After all CHCs in the ten municipalities accepted to participate in the trial one municipality in each pair was randomly distributed to the intervention or control group by lot (Figure 3).

Municipalities with fewer than 100 births in 2012 were excluded from the draw, as were the municipalities of Asker, Drammen and the Stovner district of Oslo because they had been involved in the development of the intervention. Additionally, the three northernmost counties of Norway were excluded because of their geographical location far from Oslo Metropolitan University. The total population as the base for the drawings consisted of 139 municipalities. Predefined variables for the matched municipalities were the number of births in 2012, the population size in 2013, the number of immigrants in 2013, and the proportion of highly educated inhabitants in 2012. Each matched municipality cluster was placed in the same region of Norway based on the classification of Statistics Norway. There were two matched clusters in Region 1 and three in Region 2. Region 1 consisted of the counties Agder, Rogaland, Hordaland, Sogn og Fjordane, and Møre og Romsdal and Region 2 of the counties

Østfold, Akershus, Oslo, Hedmark, Oppland, Buskerud, Vestfold, Telemark and Trøndelag. All the municipalities in the trial were located in different counties.

The drawing process took place from September 2013 to December 2014. If one cluster in a pair declined to participate, this led to a new draw to obtain a systematic match to the remaining cluster. Obtaining a sample of five systematically matched municipalities, required contact with 72 municipalities or urban districts. Twenty-five of the drawn municipalities first contacted were unwilling to participate in the research project. Morover, several of the drawn municipalities (n=20) could not participate in the project because they had not implemented the healthcare programme in a way consistent with the authorities' regulations regarding timing and number of consultations, or they were practising group consultations instead of individual 10-month consultations (n=17) (Norwegian Directorate of Health, 2004) (Figure 3).

After Statistics Norway had drawn the matches of municipalities, the head of the CHC in each municipality was contacted and given information about the project orally. If the CHC accepted, written information about the project was sent (Appendix 4a, 4b).

All parents in the included municipalities who visited the CHC with their child received oral and written information (Appendix 6) about the ongoing study from their PHN. The only exclusion criterion was parents whose Norwegian skills were insufficient to understand the written information about the study. Participants were recruited continuously from 5 January 2015 to 31 January 2017. If parents accepted to participate, they were usually enrolled in the study at the child's six-month consultation. Shortly after this consultation, the PHNs sent to the researcher the signed consent form per postal mail (Appendix 6) on behalf of the parent enrolled in the trial (n=686).

The researcher hereafter sent a SFFQ to the parents at baseline (Appendix 12a, 12b). For every participating child, the researcher sent the child's PHN a *help sheet* [Hjelpeark] at baseline for children in intervention municipalities (Appendix 9) and a corresponding *help sheet* to the control municipalities (Appendix 10). This help sheet was integrated in the trial as part of process evaluation based on the method literature (Polit & Beck, 2017). Its task was to provide descriptive information about the CHC consultations. When the child had attended the 2-year consultation, the PHN returned the completed Help sheet to the researcher. This was a sign to the researcher to send the SFFQ at endpoint to the child's parents (Appendix

13a, 13b). Appendix 8 shows the distribution of interventions and consultations in the matched municipalities and the number of returned help sheets and completed SFFQs.

Process evaluation of the intervention implementation

Based on data from the help sheets a process evaluation (cf. paper IV) was conducted. In advance, implementation of the intervention was estimated to take approximately 10 minutes per consultation. Consultations usually took between 20 and 30 minutes in total. Process evaluation was conducted to determine whether the intervention had been delivered as intended, and the time it took to perform the intervention was recorded. PHNs in the intervention municipalities reported that they used median 35.0 minutes (min.=15.0 minutes, max.=60.0 minutes) per featured consultation. Reported median time for performing the intervention was 10.0 minutes (min.=2.0 minutes, max.=30.0 minutes). In the control municipalities, the PHNs reported median use of 30.0 minutes (min.=20.0 minutes, max.=60.0 minutes) per featured consultation.

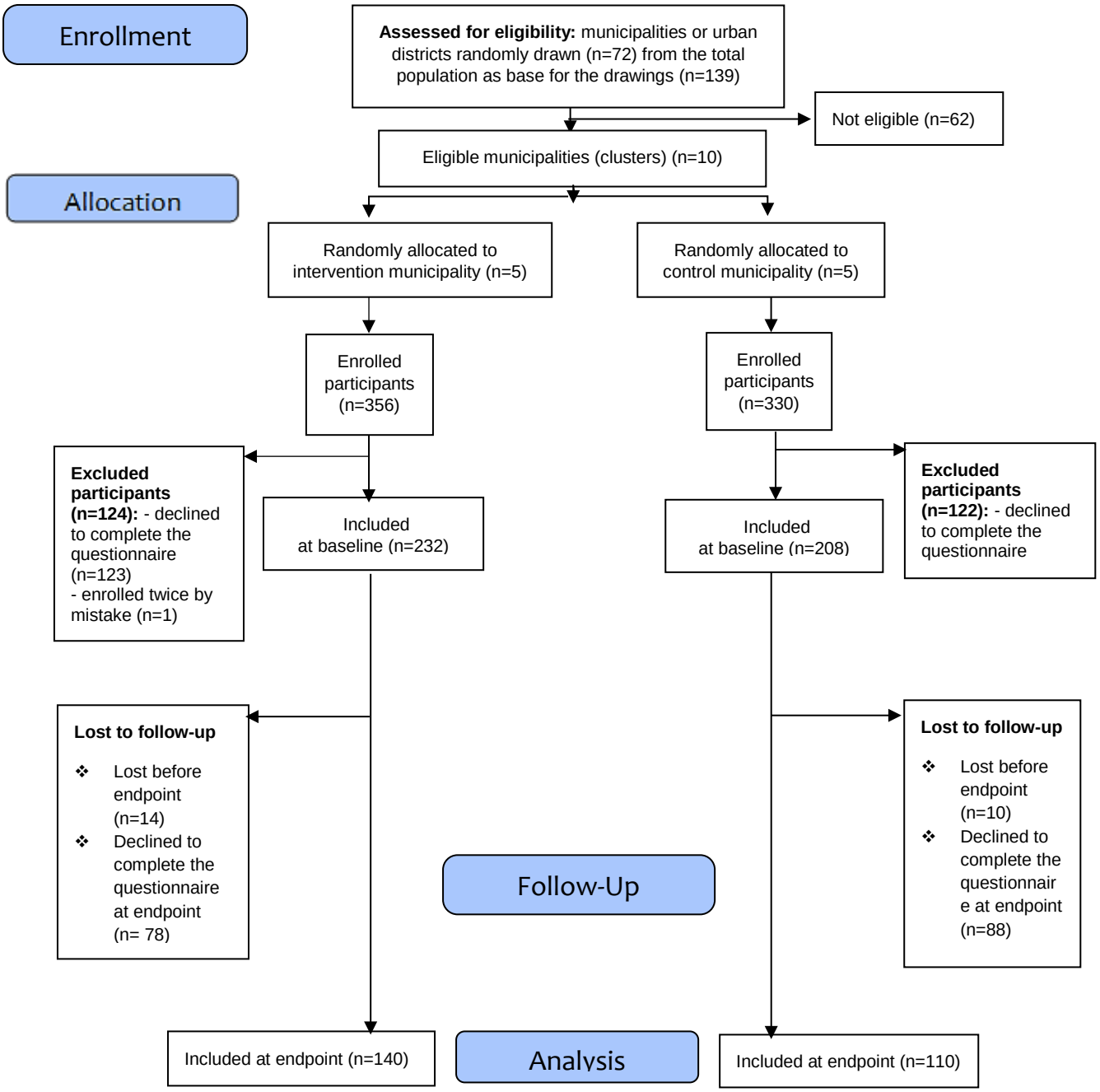


Figure 3. A flow diagram of the participant flow in the cluster randomized controlled trial according to the CONSORT extension for cluster trials (Campbell et al., 2012)

4.3.2 Consultations in control and intervention municipalities

Control municipalities

The participants and their children in the control municipalities followed the established individual CHC consultations when the child was 10, 12 and 15–18 months old (Norwegian Directorate of Health, 2004). These particular consultations were highlighted because PHNs often consider counselling about food and feeding practices challenging when the child reaches the age of weaning and gradually begins to eat the same food as the rest of the family (Holmberg Fagerlund et al., 2016).

Intervention municipalities

In addition to following the established individual CHC consultations as mentioned above, the participants in the intervention municipalities were exposed to the intervention, the PHN's use of the communication tool about diet. In this intervention, the PHN presented the parents with six or seven printed images per consultation about different nutritional themes related to the child's age and developmental stage. The images were A4-size and presented on a flip chart stand at the PHN's desk (Appendix 11).

Based on these images, parents were invited to discuss relevant themes regarding food and feeding practices adapted to their family and child. One aim of the communication tool about diet was to help each family choose an optimal diet for their child, raising the caregiver's awareness of food habits as central to the child's recent and long-term health. A further aim was to help the family adjust meals to give their child the opportunity to develop skills in eating and get used to different tastes. The authorities' labelling schemes designating healthy foods and dietary factors according to the authorities' recommendations were emphasized in the images, as well as in the communication tool about diet (cf. papers III, IV).

4.3.3 Preparations for the implementation

Before the implementation of the trial, the researcher visited all cooperating CHCs to prepare and guide their PHNs regarding the trial and their tasks. This preparation was based on a standardized oral power point presentation. One presentation was customized for groups of PHNs in intervention municipalities and another for the control group of PHNs. The preparations lasted on average for two to three hours. In intervention municipalities a standardized one-hour introduction on the use of the developed communication tool about diet and the corresponding user's manual was integrated in the presentation. To minimize likely performance bias and expectation bias related to awareness, as described by Polit and Beck (2017), among the cooperating PHNs and participants later on, information about the study outcomes was withheld during these presentations. The PHNs in the intervention municipalities had to sign an agreement not to use the communication tool about diet for any other purpose than in the current intervention to prevent possible contamination of control municipalities (Appendix 5).

The topics in the power point presentations were as follows:

- Background for the trial
- The aims of the trial (without mentioning any outcome measures)
- The selection of municipalities at random
- The participants in the trial
- PHN's tasks in the trial
- The follow-up folder*
- The time schedule of the trial
- The communication tool about diet on a flip chart stand** (exclusively in intervention municipalities)
- The agreement about the use of the communication tool about diet *** (exclusively in intervention municipalities)

**A follow-up folder* with information about the study was handed out to each PHN who was participating in the trial in the municipalities. This folder was suitable for organizing the help sheets (Appendix 9, 10) according to the child's month of birth, and thus for keeping records of the consultations integrated in the trial. Moreover, the folder contained a pocket with

information sheets, including a consent form (Appendix 6) to be handed to the parents, and envelopes for posting the signed consent forms to the researcher.

**Each of the PHNs in the intervention municipalities received a flip chart stand which included the communication tool about diet (Appendix 11).

***An agreement form (Appendix 5) which defined the use of the communication tool about diet in the intervention municipalities in certain consultations to prohibit misuse and thus contamination of the control municipalities.

To accelerate the recruitment effort, PHNs were kept motivated and reminded about the study through monthly email or telephone contact with their managers and by visits to the CHCs by a researcher during the recruitment process. Five to nine months after the first introductory presentation, all participating municipalities were visited a second time. One of the municipalities got a third visit because of a slow recruitment process. PHNs who were employed after the first oral group introduction had taken place received an oral introduction to the study from the researcher by telephone and the follow-up folder and the information materials were sent via postal mail.

4.3.4 Data collection based on previously validated questionnaires

Two age-appropriate SFFQs were used for data collection during the trial. Both of them were based on validated SFFQs that had been used in previous national surveys among children of corresponding ages (cf. papers II, IV).

The SFFQ at baseline (Appendix 12a) was designed to investigate feeding practices of 10-month-old infants, including retrospectively from birth. It was based on a revised version of a validated and standardized SFFQ (Kristiansen, Lande, Øverby, & Andersen, 2010) developed for a national dietary survey among 12-month old infants in Norway 2007 (Spedkost [Infant Diet] 2006-2007) (Øverby et al., 2009). The revisions made for the present study were updates regarding applicable food items on the market because of alterations that had occurred after the previous survey (cf. paper II).

The parents who consented to participate at baseline received a paper format SFFQ (Appendix 12a) by postal mail when their child was approximately 8.5 months old. Attached to the SFFQ was written information about the survey (Appendix 12b), a booklet for

displaying food quantities in the SFFQ (Appendix 14) and a reply envelope. The parents were asked to complete and return the baseline SFFQ just before the child attended the 10-month consultation at the CHC (cf. paper II).

At endpoint, an SFFQ (Appendix 13a) was designed to investigate feeding practices at 2 years of age and retrospectively (cf. paper IV). It was a revised version of a validated and standardized SFFQ (Kristiansen, Lande, Sexton, & Andersen, 2013) developed for a national dietary survey among 2-year old children in Norway during three months in 2007. This national surevey was administrated to mothers who were born in Norway, Sweden or Denmark (Kristiansen et al., 2009). In the current study the parents received the endpoint SFFQ (Appendix 13a) after the 2-year consultation. Included in the paper format SFFQ at endpoint was written information about the study (Appendix 13b), the booklet depicting food quantities (Appendix 14) and a reply envelope. Parents usually got a reminder about the questionnaire by a phone call at baseline and endpoint. The completion of each of the SFFQs was estimated to take about 40 minutes. Data were collected from 4 March 2015 until 28 June 2018 (cf. paper IV).

A software programme, *CardiffTeleForm®, Hewlett Packard®*, was used to create the SFFQs and later on to scan the completed handwritten SFFQs and convert them to an electronic format.

4.4. Assessing experiences of the intervention

According to the methodological orientation of interpretive description (Thorne, 2016), the aim of a qualitative interview study was to investigate counselling about food and feeding practices from the perspective of parents who had participated in the current PHN intervention (cf. paper III). Individual qualitative interviews were conducted based on analytic inspiration drawn from the phenomenological hermeneutical method (Lindseth & Norberg, 2004). The data were collected during January 2017–May 2017. The participants decided on the interview location: either in their home or at a café or similar place.

The interviews were semi-structured and a written topic guide was used (cf. paper III). The interviews lasted between 10 and 40 minutes. They were audio recorded and transcribed verbatim, but the sentence construction and grammar were modified afterwards to improve readability.

The data collection lasted until an adequate sample size had been achieved, guided by the concept of sufficient information power: the larger information power a sample holds, the lower the number of participants needed (Malterud, Siersma, and Guassora (2016). The parents participating in the interviews turned out to have a diversity of experiences. The core focus of the study was to investigate a well-defined and delineated phenomenon related to counselling about food and feeding practices and an accompanying tool. The communication in the interviews was clear and based on the written topics. All these aspects were directional when considering the degree of information power related to sample adequacy, data quality, and variability according to Malterud et al. (2016). Accordingly, the final sample size ended up being 12.

Fifteen parents refrained from participating after having received the written information about the study. Of these, four indicated that they did not have time to participate, five did not answer the telephone when contacted, another five did not give any reason and one declined because of illness.

The chosen methodology of interpretive description as elaborated by Thorne (2016) allows for reflection and questioning through a lens of a health discipline, which was central for this complex intervention. According to the interpretive/descriptive perspective, researchers within health disciplines should avoid methodologies with roots in other scientific disciplines. Focusing on research from the perspective of non-health disciplines might steer the health researcher in a direction that is inconsistent with the disciplinary purpose for which their study was conducted. Analysis techniques borrowed from other disciplines are merely seen as tools to help in thinking differently and to expand the angle of vision (Thorne, 2016). For this complex intervention study's purpose analysis techniques based on a phenomenological hermeneutical method described by Lindseth and Norberg (2004) were used (cf. paper III). Specifically, a structural analysis, as discussed by Lindseth and Norberg (2004), was performed interview by interview to identify and formulate themes bringing forth threads of meaning in each text, based on an initial reading of the text as a whole. Based on this reading, an understanding of the text was formulated and noted. The text was then divided into meaning units of sentences, structuring just one meaning. These meaning units were read through and considered in the light of the researcher's understanding. Based on this reflection, the units were shortened to everyday expressions that are as concise as possible. These expressions were sorted into groups, then further abstracted into sub-themes and assembled into fewer themes (cf. paper III). During this interpretive process, the researcher also viewed

and integrated short handwritten memos from the interviews about the setting and atmosphere.

4.5 Ethical considerations

This study was performed in accordance with the Declaration of Helsinki (World Medical Association, 2013) and subject to ethical standards that promote and ensure respect for all humans and protect their health and rights. The study participants gave their written, informed consent. Participation was voluntary and the participants could withdraw without giving a reason. All data were treated as confidential. Participant anonymity was guaranteed.

Approval of the study was obtained from Regional Committees for Medical and Health Research Ethics before start of the research project 1 August 2014 and until 31 December 2019, Reference number: 2014/726 (Appendix 1a, 1b, 1c). Prior to commencing, the clinical trial was submitted to the ClinicalTrials.gov database, indentifier: NCT02266953 on 8 October 2014 (Appendix 2).

The 12 parents participating in the interview study had previously given their written consent to participate in the cluster randomized controlled trial, and had thus disclosed their address and mobile telephone number in a consent form regarding their participation in the trial (Appendix 6). Additionally, these parents had been asked to tick “yes” on the consent form if they agreed to possibly be contacted regarding a related interview study later. Hence, some of the parents who had ticked that they could be contacted were contacted by telephone and informed about the interview study orally. If they accepted, written information about the interviews and a consent form was sent by postal mail (Appendix 7). These participants gave their written, informed consent to participate in the interview study and handed the completed consent form to the interviewer prior to the interview.

5.0 SUMMARY OF RESULTS

Summaries of the results in the four papers comprising the study are presented in this section. The main findings are presented in Figure 4.

Paper I: Counselling parents on young children's healthy diet: A modified scoping review.
DOI: **http://dx.doi.org/10.1111/jocn.13892**

The aim was to map and describe key information in existing research on the counselling of parents of children aged 0–2 years on healthy dietary practices for children in preventive health care settings similar to CHCs. On the basis of a systematic literature review of existing research, eight studies were included. This resulted in seven main findings: 1) Some parents perceive inconsistency in recommendations regarding child-feeding from the authorities. 2) Some parents are sceptical about the authorities' recommendations regarding their child's diet. 3) Parental misconceptions or uncertainty might impact a child's diet. 4) Parents perceive influence from relatives and friends having impact on their child's diet. 5) Maternal knowledge regarding child-feeding advice is a mediator of, or related to, improved diet quality in children. 6) The mother's lower use of food as reward was seen as a mediator for improved diet quality in children. 7) Anticipatory guidance reflecting a particular mother or particular child might impact healthier child-feeding habits.

Based on the review, it was concluded that counselling regarding a healthy diet for young children should be anticipatory, consistent and adapted to each unique family and to the child's developmental stage. The encounter between a particular caregiver and health professional is crucial, and parents should be given a fair chance to adjust their actions regarding their child's healthy diet in a manner adapted to their situation and opportunities.

Paper II: Parental concerns of allergy or hypersensitivity and the infant's diet
DOI: **http://dx.doi.org/10.1002/nop2.195**

The aim was to investigate whether there was an association between the actual diet of a 10-month-old child and his or her parent's reported avoidance of appropriate foods in the child's diet due to fears that it might trigger allergic or hypersensitivity reactions in the child. This survey was based on baseline data from SFFQs completed by parents and had a cross-sectional design. Four hundred and forty parents completed the SFFQ. The study found that 34% of parents reported having avoided introducing some food items due to fears of allergy or hypersensitivity in their child. A statistically significant relationship emerged between this

reporting and parents wanting more information about food for infants and toddlers. The fears reported by parents were not, however, associated with dietary restrictions regarding actual feeding of the child.

Paper III: Parental experience of counselling about food and feeding practices at the child health centre: An interpretive description. DOI: **http://dx.doi.org/10.1111/jocn.14771**

The study aimed to investigate how parents (n=12) experienced counselling about food and feeding practices and the use of a communication tool about diet at the CHC based on individual interviews. On average, children in the study were 28 months old at the time of the interviews. The findings indicated that that the PHNs often proposed healthy food choices by presenting images in the communication tool about diet in the intervention. Parents usually experienced the counselling regarding food and feeding practices at the CHC as sound and trustworthy. Three metaphors describing different parental experiences of counselling about food and feeding practices at the CHC emerged: 1) A service in accordance with expectations; 2) You feel you do not fit in the framework; and 3) Description of what seems unpleasant. The parents who had positive expectations going into this counselling often felt that their experience at the CHC met their expectations. In particular, parents who had questions related to food allergies or breastfeeding experienced limited support and thus felt that they did not fit the framework. If parents had diets that were different from what was emphasized as healthy at the CHC they often felt overwhelmed with the information at the CHC and they sometimes experienced receiving advice that they felt unpleasant.

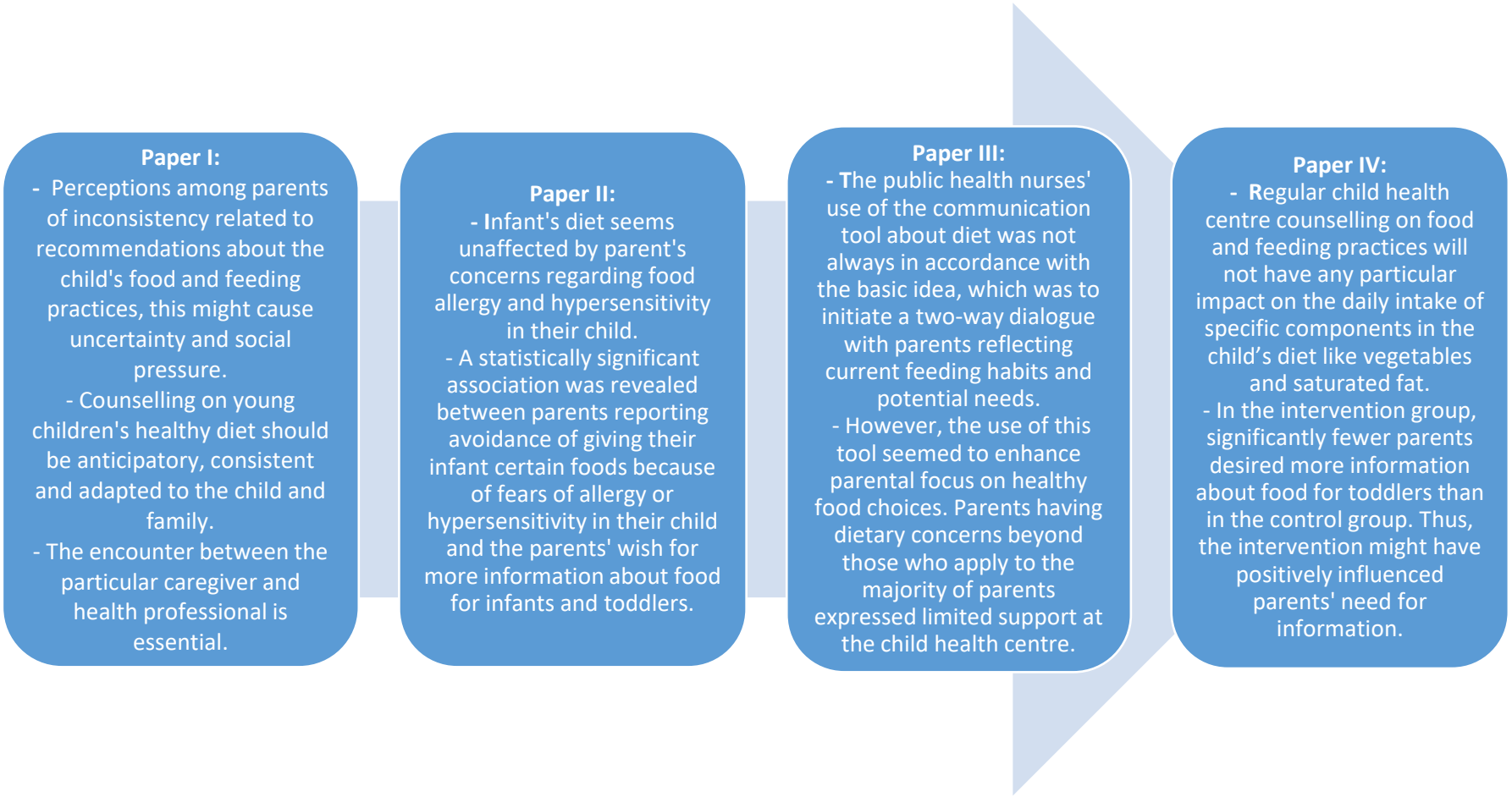
After infancy, consultations usually became more time-pressured, inhibiting the parents from asking questions about their child's diet. Some parents also experienced misunderstandings or scepticism, or felt overruled because of the counselling. Scepticism was sometimes in relation to the PHN's not seeming to be convinced in relation to the counselling she was assigned to give. In other settings, scepticism was sometimes related to the mother's experience of receiving maladjusted breastfeeding advice. The conclusion was that parental expectations and needs had an impact on parents' satisfaction in relation to how they perceived the counselling about food and feeding practices at the CHC. Some parents experienced that the use of a communication tool about diet enhanced their focus on healthy foods in general.

Paper IV: The use of a communication tool about diet at the child health centre: A cluster randomized controlled trial. DOI: **http://dx.doi.org/10.1002/nop2.498**

The study's aim was to investigate the effect of a communication tool about diet used in PHN consultations with parents compared with usual consultations concerning the child's diet at two years of age. The study was a two-armed parallel cluster randomized controlled trial ongoing in five pairs of municipality clusters. These municipality pairs were systematically matched. This study hypothesized that the children (n=140) in the intervention municipalities would have higher intake of vegetables, lower intake of saturated fat and lower BMI than those (n=110) in the control municipalities. No effect of the intervention on the outcome variables based on the parental completion of a SFFQ at endpoint when the children were on average 2.2 years old. Significantly, fewer parents among those who were exposed to the communication tool about diet desired more information about food for toddlers than in the control group.

Based on the results, it was concluded that the intervention did not significantly impact children's vegetable intake, intake of saturated fat or weight. However, it might have positively influenced parents' need for information.

Figure 4. The main findings in the four papers comprising the study: the arrow indicates the timeline



6.0 DISCUSSION

In this chapter, I discuss methodological considerations, the chosen study design and the research procedure. Further, I address the chosen outcome measures, the study sample, statistical power and the reliability and validity concerns. The study findings are discussed and related to the PHN counselling.

6.1 Methodological considerations

A review study by Richards, Coulthard, and Borglin (2014) indicated that few (34.1%) of the studies in European nursing research published in 2010 concerned nursing interventions. Of these, a small proportion, <5% were articles reporting randomized controlled trials appraising effects of nursing interventions. If nonrandomized studies were included, less than 12% of nursing research conducted in Europe was experimental (Richards et al., 2014). In terms of nursing studies employing a qualitative design, generic qualitative designs dominated and sometimes without methodological references. It was thus concluded that European nursing research published in the leading nursing journals was overwhelmingly descriptive and poorly described (Richards et al., 2014). Because the health research community is asking the wrong questions and using poor-quality research methods, it often fails to publish research promptly and research findings might be biased or unusable. Hence, an effort should be made to improve research methods, and doctoral education programmes for nurses should encourage students to undertake experimental work related to efficacy and effectiveness of nursing interventions (Richards, 2015). According to Richards et al. (2014) the UK MRC's framework for complex research interventions has been suggested to be applicable to help researchers to recognize and adopt appropriate methods, given the state of existing knowledge and the nature of their target intervention (Medical Research Council, 2008). These considerations were central when planning the current doctoral study.

Further, when planning and conducting this study, I attempted to follow the four crucial stages to reduce research waste as described by Chalmers and Glasziou (2009): 1) a choice of research question relevant to clinicians and patients, 2) appropriate design and methods, 3) accessible full publication, and 4) unbiased and usable report.

To decide the aims of the study, findings from a previous study based on focus groups (Holmberg Fagerlund et al., 2016) were central. In these focus groups, PHNs expressed how they often found counselling about food and feeding practices challenging, particularly during the child's transition to family foods (Holmberg Fagerlund et al., 2016). There were few existing studies of interventions based on universal support or counselling of parents of children aged 2 years and younger about a healthy diet for children (Hodder et al., 2018; Waters et al., 2011). Based on this finding and on results in a previous national dietary survey and the dietary recommendations from the health authorities, the healthy diet of young children with a particular focus on their daily intake of vegetables and saturated fat and weight development (Kristiansen et al., 2013; National Nutrition Council in Norway, 2011) was targeted as a subject of this study.

The stages in the MRC framework (Medical Research Council, 2008) were central when determining the research design and methods and when conducting the intervention in the research settings. Before conducting the study, the current clinical trial was registered in a clinical trial registry platform to support transparency. This was also done to facilitate prompt publication of the results regardless of whether or not the intervention should prove to be effective. It is a fact that studies are less likely to be published if their achieved results are disappointing (Chalmers & Glasziou, 2009). To enhance the quality of the publications, the study adhered to the PRISMA, CONSORT and COREQ statements when applicable (EQUATOR Network, 2019). Further, to reduce research waste as described by Chalmers and Glasziou (2009), the results of the current study have been made publicly accessible through publication in international academic journals.

To assess the applicability of the current study to clinicians and patients in accordance with Chalmers and Glasziou (2009), a systematic literature search (cf. paper I) was performed, as well as a supplement search in 2019. The literature revealed no previous studies with a similar intervention focus by the use of images during counselling about the child's healthy diet in settings corresponding to the CHC. Generally, plenty of images about healthy food and food choices are publicly available on the internet and in smartphone applications. However, counselling of caregivers on themes regarding a healthy diet for their young children using these kind of images is not common.

The study's outcome measures, the child's daily intake of vegetables and saturated fat and BMI were chosen due to their relatedness to the occurrence of serious public health concerns such as non-communicable disease in adulthood (Kaikkonen et al., 2013; World

Health Organization, 2017). In addition, at least one study has indicated that overweight is often challenging to address as a public health concern among PHNs (Helseth, Riiser, Holmberg Fagerlund, Misvaer, & Glavin, 2017). The exclusive focus on vegetables in this study at the expense of fruit was supported by the fact that during the young child's transition to the family's food, bitter-tasting vegetables are often harder to accept than fruit (Birch & Ventura, 2009; Hauta-Alus et al., 2017; Kristiansen et al., 2009). This is because infants have an innate preference for sweet flavours (Birch & Ventura, 2009).

A multistage sampling approach based on cluster sampling at the municipality level was chosen instead of sampling of individual parents and children. This way of organizing clearly separate clusters was done in accordance with Polit and Beck (2017) to minimize the risk of contamination of the control group due to a possible treatment diffusion when members of control group might receive unintended insight in the intervention. By cluster sampling it was possible to combine random sampling with stratified sampling to obtain the matched pairs of clusters for the intervention, following recommendations from Statistics Norway. Further, cluster sampling is seen as a fast way to achieve sampling of large groupings according to the methods literature (Polit & Beck, 2017). As is typical with cluster sampling, it was followed by successive subsampling of smaller units consisting of the participating parents.

Because of the study's two-armed parallel study design, it was not possible to achieve blinding or masking as described by Polit and Beck (2017) to prevent biases stemming from the study participants' awareness of being part of intervention or control group. All participants recognized whether or not the communication tool about diet was used in the consultations.

Results from previous national surveys among children in Norway aged 12 months (Kristiansen et al. (2009), and 2 years (Øverby et al. (2009), predicted the choice of daily vegetable intake as primary outcome as well as the estimated level of intake. The daily vegetable intake among children in the intervention municipalities was expected to be 15 g higher among 2-year-old children when compared to the control municipalities. Based on a newly published Cochrane Database Systematic Review, it was later seen that child-feeding interventions appear to increase vegetable intake in children daily by only 3.50 g on average (Hodder et al., 2018). Hence, the indicated number of study participants, n=176 in both groups, was obviously too low in light of this updated evidence.

6.1.1 Validity and reliability

The qualitative studies

According to Polit and Beck (2017), when it comes to qualitative studies *trustworthiness* is often used as a standard instead of the concepts validity and reliability. From this perspective, trusworthiness is concerned with demonstrating consistency in performing the study, as described by Carcary (2009). To ensure trustworthiness when conducting the current literature review and the interview study (cf. papers I, III), we made an effort to sufficiently document every procedure to provide transparency throughout the decision process and the subsequent steps of the research process. Transparency is considered the basis for trustworthiness because it makes it possible to have auditable and confirmable findings in qualitative studies (Olsen, 2003; Polit & Beck, 2017).

Trustworthiness includes the following dimensions: credibility, transferability, confirmability, dependability, and authenticity. Credibility cannot be attained without dependability. Thus, credibility depends on the believability of the findings and is related to stability of the data as seen over time and conditions (Polit & Beck, 2017). For instance, by providing examples from the interviews (cf. paper III) and by presenting the included articles in the review (cf. paper I), we made an effort to achieve dependability, believability and credibility in the doctoral study. Confirmability refers to objectivity regarding the relevance and meaning of data (Polit & Beck, 2017). To achieve this, all researchers have contributed to the analysis of the data (cf. papers I, III). Transferability means that findings might be transferred to settings or groups other than those participating in the study (Polit & Beck, 2017). In the interview study (cf. paper III) transferability was sought by giving the PHNs a mandatory standardized introduction to the use of the communication tool about diet. Authenticity is the extent to which the researcher faithfully presents to the readers of a publication all realities that occurred during the collection, analysis and interpretation of data (Polit & Beck, 2017). If authenticity is present, the readers of a publication should perceive that they are being guided throughout all the stages in the research process, for instance by gaining insight into the experience of the participants and the choices the researcher has made while conducting the study based on a methodology (papers I, III). This will reflect how convincing the data analysis appears, including the interpretations of the researcher conducting qualitative research. To strengthen the validity of qualitative studies, and to

prevent careless data analysis, an effort should be made to provide as transpararent presentations as possible of all stages in the research process, according to Carcary (2009); Olsen (2003). The abovementioned criteria for validity and reliability have been decisive throughout this doctoral project.

The quantitative studies

Reliability refers to the accuracy and consistency of information obtained in the quantitative studies (cf. papers II, IV) and is concerned with the absence of variation (Polit & Beck, 2017). During the study, statistical reliability, referring to the probability that the results would be to find in a wider group of people (Polit and Beck (2017) was central. A key to ensuring reliability in the current research project was considering the accuracy of the SFFQs. These SFFQs were chosen because they were updated versions based on previously validated and standardized SFFQs (cf. paper IV) used in earlier national surveys in Norway among samples of participants similar to ours (Kristiansen et al., 2009; Øverby et al., 2009).

The validity of a study is central when evaluating methods and measuring variables and whether the findings are unbiased and well-grounded (Polit & Beck, 2017). A central question is whether the methods are really measuring the target concepts as intended. Regarding intervention studies, it is of particular importance to be aware of threats to *internal validity*. If internal validity is lacking, inferences about causal connections between two variables might be wrong (cf. paper IV) according to methods literature by Polit and Beck (2017).

According to Polit and Beck (2017), the current trial (cf. paper IV) was vulnerable to the following four potential threats to internal validity: *1) history*, meaning that events occurring concurrently might cause the same effect as was expected based on the intervention; *2) attrition*, referring to loss of participants post-randomization, possibly causing bias in the intervention conditions; *3) testing*, meaning that the exposure to the SFFQ at baseline might have affected the subsequent completion of the SFFQ at endpoint; and *4) instrumentation*, as related to testing because the parents might have been exhausted from answering two SFFQs taking 40 minutes each. Efforts to preserve internal validity were primarily focused on counteracting the threats of history and attrition. Thus, to accelerate recruitment efforts, the PHNs were kept motivated and reminded about the research project through monthly contact with their managers by email or telephone. For the same reason, the researcher visited all

CHCs during the recruitment process. The participating parents were usually reminded about the completion of the SFFQs at baseline and endpoint through a telephone call (cf. papers II, IV).

To shorten the time spent on the relatively time-consuming stage of finding the appropriate number of matched clusters (cf. paper IV), we could have proceeded in another way. The 139 municipalities used as a basis for the drawings could have been contacted in advance to find out if they were willing to participate in the research project and if they were eligible because they followed the regular consultations as outlined in the national regulations for the CHC services according to the Norwegian Directorate of Health (2017).

Aspects of *construct validity*, as descibed by Polit and Beck (2017), were a central concern to prevent contamination of the control municipalities. Consequently, an effort was made to assure that only the PHNs in the intervention municipalities were introduced to the communication tool about diet and used it in accordance with the study protocol to avoid contamination of the control municipalities (cf. papers III, IV). Hence, all PHNs in the intervention municipalities were asked to sign an agreement not to spread the communication tool about diet beyond the intervention group and to use it as intended and according to the user's manual.

Concerns about *external validity* are related to whether the study findings are generalizable to a larger population or variations in people, conditions and settings (Polit & Beck, 2017). As described by Polit and Beck (2017), the random selection of municipalities and the systematic matching of pairs of the clusters in the trial contributed to the representativeness of this study's participants and thus to the study's external validity (cf. paper IV).

The participants as presented at baseline and endpoint (cf. papers II, IV) were almost exclusively of non-immigrant background and had a higher level of education than the general Norwegian population. This might limit the generalizability of the study findings beyond similar groups and thus represent a threat to external validity (Polit & Beck, 2017). Another threat to external validity is the unknown response rate of participants who were initially invited to participate in the municipalities (cf. papers II, IV).

6.2 General discussion of the findings

6.2.1 The use of the intervention tool

The basic idea of using the communication tool about diet was that it should be applicable for age-appropriate universal use, irrespective of the users' food culture or level of health literacy and without requiring any additional resources like time commitment for the PHNs. The content of this tool was based on the health authorities' updated, evidence-based dietary recommendations as published by the National Nutrition Council in Norway (2011). It was designed to create opportunities for cooperation between parents and PHNs regarding a healthy diet for children by promoting a two-way dialogue (cf. paper III). However, the study findings indicated that the communication tool about diet was not always used as intended: its use was sometimes limited to PHNs displaying images and giving one-way information to the parents (cf. paper III). This apparent lack of dialogue about food and feeding practices during counselling in this study might be related to the fact that no effect on dietary outcomes from the use of the communication tool about diet were observed (cf. paper IV).

The withholding of any information about the primary outcome measure comprising the child's daily intake of vegetables in gram and the other outcomes of the study from the participating PHNs and the study participants might have limited the social desirability response bias, as described by Polit and Beck (2017), and thus strengthened the validity of the study. However, if this information had not been withheld so strictly, it might have affected the participating parents positively by openly focusing on their child's daily vegetable intake and parental contribution to a healthy diet for their children. Correspondingly, the PHNs might have been more conscious in their efforts to facilitate a two-way-dialogue had they been aware of the study's particular focus on vegetables. Further, it might have been easier for PHNs to implement counselling based on a population-of-interest perspective by inviting parents into a two-way-dialogue consciously focusing on vegetables.

Practising PHNs usually are operating from either a "population-of-interest" or "population-at-risk" perspective in their daily work according to Keller et al. (2004). Based on the interviews (cf. paper III), the PHNs' counselling and their use of the communication tool about diet was done almost solely from a "population-of-interest" perspective, focusing on an essentially healthy population whose health status could be enhanced or protected (Keller et al., 2004; Schoon, Schaffer, et al., 2011). A "population-at-risk" focus, identifying common

risk factors or exposure that might pose a threat to health, seemed to be lacking in the CHC consultations about food and feeding practices in the study. An issue such as children's overweight is an example of a common risk factor that might threaten health, but was not usually a focus of the consultations (cf. paper III). Due to common awareness of the prevalence of overweight and obesity among the child population (Glavin et al., 2014), and because of known indications that risk factors for non-communicable disease might develop from an early age according to Kjellberg et al. (2019), it was unexpected that neither overweight nor obesity emerged as a common theme in the consultations (cf. paper III).

6.2.2 Counselling in relation to determinants of health

Income, social status, housing, nutrition and social support networks are strongly linked with population-based practice because all these factors are determinants of health according to Keller et al. (2004); Wilkinson and Marmot (2003). However, in a study by Holmberg Fagerlund et al. (2016), PHNs at the CHC disclosed that they usually did not complete customary mapping of the family background, parental education or dietary preferences and aspects that might influence health. The PHNs typically provided basic nutrition advice to parents based on the health authorities' recommendations using a one-size-fits-all strategy without any particular mapping of the applicable determinants of health.

The findings (cf. paper III) show how parents who expressed that their feeding practices progressed well or as expected in particular usually experienced the counselling as relevant. These parents, who represent a "population-of-interest", usually assessed the services at the CHC as trustworthy and the nutrition information as sound and safe. They experienced the nutrition counselling as a supplement to or a confirmation of what they already knew. By attending the CHC consultations, these parents experienced positive feedback (cf. paper III). Other parents, on the contrary, expressed that they had experienced unpleasant situations during the nutrition counselling at the CHC, for instance if the family's diet preferences differed from what was recommended as healthy at the CHC. These parents often refused to talk about their diet at the CHC and they also often felt overruled by information about healthy food choices. Based on the interviews (cf. paper III), some parents expressed felt scepticism related to the recommendations about a healthy diet for children communicated at the CHC. This corresponds to similar findings (Horodynski et al., 2007;

Lakshman et al., 2012) presented in a systematic review (cf. paper I). Parents who had needs related to concerns such as a child's food allergy, their toddler's rejection of foods, or challenges related to breastfeeding their child often experienced that their needs were not met during the CHC consultations (cf. paper III). These parents felt disappointed because before attending the CHC consultation they had expected to get adapted advice (cf. paper III). Because of this, they sometimes decided to seek advice from close family instead or to feed the child based on what they felt was appropriate. This finding is analogous to findings in a systematic review (cf. paper I) indicating that parents who are uncertain about their child's diet often perceive, not necessarily based on evidence, influence from relatives and friends having impact on the child's diet (Horodynski et al., 2007).

If the communication tool about diet had been used as intended to a greater extent to promote a two-way-dialogue, parents might have been invited to explain their dietary preferences and any scepticism regarding the authorities' dietary recommendations (cf. paper III). Counselling that took into consideration the numerous broad determinants of health, might have been useful for the PHNs as a basis for anticipatory guidance reflecting the particular mother and particular child and, if relevant, affecting the child's feeding habits in a healthy direction, as described by Daniels, Mallan, Nicholson, Battistutta, and Magarey (2013) and French et al. (2012).

6.2.3 Parents' desire for nutrition information

Supplying the mother or the caregiver of young children with applicable knowledge is central when counselling on a healthy diet for children in preventive healthcare settings (cf. papers I, II). The skills of the PHN as a counsellor asking, listening, informing and promoting health are crucial. Health promotion concentrating on changes and support relevant to health is central and should preferably be non-directive, instead letting parents identify what changes are to be made and how this should be done, as proposed by Kemm (2015). According to Mitchell, Farrow, Haycraft, and Meyer (2013), parents are often poorly supported in their attempts to understand why feeding problems arise and what opportunities they have to encourage their child's healthy, varied and balanced diet. This might result in feeding problems among children, that could have been preventable (Mitchell et al., 2013). Correspondingly, among parents who had attended CHC consultations regularly with their

child since the child was a newborn (cf. paper II), 34% of parents reported that they avoided introducing some food items to their child aged 10 months because they were afraid that their child could develop an allergy or hypersensitivity. Among these parents with concerns related to their child's diet, 69% desired more information about food for infants and toddlers (cf. paper II). These findings suggest that the information about food and feeding practices provided at the CHC was probably not sufficient or adapted to the needs of these parents. The concern is thus about how to reach out to parents with information about well-known best practice interventions in infant feeding (Vereijken, Weenen, & Hetherington, 2011), to allay parental concerns arising as a result of non-evidence-based knowledge or feelings like fear.

Mothers have requested easy-to-use information for instance about portion sizes and frequency of meals (Horodynski et al., 2007; Scaglioni et al., 2008) and general nutritional information adapted to different family situations and different babies (Lakshman et al., 2012). As far as health professionals are concerned, PHNs have disclosed that they rarely ask families about issues such as their food preferences when counselling about food and feeding practices at the CHC (Holmberg Fagerlund et al. (2016). A literature review (cf. paper I) shows that parents reported perceived inconsistency in nutritional advice received from health care providers. This affected the parents negatively, creating uncertainty and misconceptions. To remedy these communication problems, the content and quality of encounters between caregivers or parents and the health professionals needs to be highlighted when it comes to counselling about food and feeding practices (paper I). We found that using the study's updated and evidence-based communication tool about diet positively influenced the parents' desire for information about food issues related to their toddler (cf. paper IV).

6.2.4 Performing the counselling

Based on the process evaluation, the median time for performing consultations was 30 and 35 minutes in the control and intervention municipalities respectively. Thus, the median consultation time was 5 minutes longer in the intervention municipalities. The median time for performing the intervention was 10 minutes in the intervention municipalities. We did not record the corresponding nutrition counselling time for the control municipalities as information about the nutrition focus of the study had been withheld due to validity concerns. However, the systematic use of the communication tool about diet seemed not to prolong the median consultation time by more than 5 minutes. At the same time, statistically significant

findings showed that fewer parents in intervention municipalities had a desire for more information about toddlers' diet than among parents in the control group. This is seen as an indication that the intervention was implemented by the PHNs in a great majority of consultations in the intervention municipalities (cf. paper IV). The image-based communication tool might thus be seen as appropriate for informing parents about nutrition for their children (cf. paper IV). The interviews (cf. paper III) indicated that the majority of parents who had a positive attitude about following a generally healthy diet for themselves and their child before attending the CHC counselling were often satisfied with the counselling about food and feeding practices they received and with the use of the communication tool about diet. Thus, we might conclude that the PHNs' counselling about food and feeding practices is particularly adapted to parents who already are determined to choose healthy food for their child and family. This could indicate a utilitarian ethical position (Kemm, 2015) among the current PHNs in the CHC consultations. The interviews revealed, moreover, that the communication tool about diet was often used purely for information-giving and not as intended, namely to initiate a two-way dialogue. In this case, the information about food and feeding practices communicated with the tool will be particularly adapted to the needs of the great majority of parents.

It is possible that the PHNs' preparations for implementing the intervention and using the communication tool were too superficial and short and not adapted to their level of knowledge. In retrospect, a greater focus on training the PHNs how to use of the communication tool about diet and on general nutritional knowledge and counselling skills was needed when preparing them to implement the intervention. Such preparation would likely have improved their abiblity to use the communication tool about diet in a more purposeful way, namely by inviting the parents to express their questions and concerns related to their child's diet, thus initiating a two-way-dialogue.

6.2.5 Limitations

According to the James Lind Alliance (2018), studies often fail to prioritize when seeking to provide answers that are useful in the practice field. Inviting parents to join discussions about their concerns and their thoughts about what issues related to nutrition deserve attention when planning might have enriched the study and helped the researchers to address the issues of greatest importance to parents and PHNs. This enhanced focus on parental priorities related to

children's nutrition might have increased the usefulness of the intervention and the applicability of the information therein.

The randomization process took much longer than expected for a variety of reasons. Several of the municipalities could not be included as they were not eligible according to the study protocol. Subsequently, there was attrition among participants. These factors might have negatively impacted our results as they might have contributed to bias and limited the generalizability of the results. Because the intervention study was underpowered, it is not possible to assume any causal relationships (Polit & Beck, 2017) (cf. paper IV). Further, the power calculations related to the sample size were based on anticipated differences in the main outcome between the groups that were much larger than the observed differences. We can therefore speculate that even if the calculated sample size had been achieved, it would not have been possible to draw a conclusion regarding any effects of the intervention because the observed differences in the main outcome between the groups were substantially smaller than anticipated (cf. paper IV). Thus, to demonstrate statistical significance we would have needed a very large study, and the difference would not likely be clinically relevant.

As presented in paper IV, the data did not reveal any statistically significant differences at baseline between the groups, so we did not adjust for any possible confounders and no multiple models were fitted. Thus, it was not necessary to adjust for any confounders. Moreover, even if we had wanted to adjust for such confounders, it was not possible as the consumption of vegetables was close to zero at baseline, making it impossible to model possible changes in vegetable consumption using repeated measures methodology.

Concerns about external validity are related to whether the relationships observed in the study are generalizable to a larger population or variations in people, conditions and settings. The municipalities in the studywere randomly selected, consequently the distributions of the selected background variables in the intervention and the control municipalities were similar. This is contributing to external validity as a central concern when it comes to the representativeness of the study sample of the population to which the results are supposed to apply. However, the unknown response rate of participants who initially were invited to participate in the study limits the extent to which the results are generalizable.

7.0 CONCLUSIONS

When evaluating this complex intervention study, it is central *whether the intervention works in everyday practice when compared with usual treatment*. This intervention seemed to fit in well in the existing frame of CHC consultations. It worked particularly well for those parents whose expectations before attending consultations at the CHC were in accordance with the health authorities' recommendations regarding what constitutes a healthy diet and feeding practices. A statistically significant finding was that the intervention positively affected parental information seeking regarding food for toddlers. However, even though the intervention appeared to positively affect parental desire for information about their child's diet, we did not find any association between parental desire for information and the daily intake of vegetables or saturated fat among two-year-old children. Our findings indicate that interest in nutrition and a desire for more information among parents is not associated with healthy changes in their toddlers eating habits. No association was seen between the diet of the 10-month-old infant at baseline and parents' reporting of avoidance of introducing certain food items to their child because of fear of allergy or hypersensitivity. Hence, it is important to recognize that no healthy changes to children's diet were observed, despite expectations to the contrary based on parental reporting. Our findings suggest that public health nursing policy and research should take into account that parents' positive perceptions of counselling about food and feeding practices as well as their emotions, including fear related to their child's diet might not lead them to make healthy changes to their child's diet. Study findings indicate that counselling about food and feeding practices offered in CHCs is largely adapted to a majority of parents. Parents who have dietary concerns beyond those shared by the majority of parents, for instance in relation to breastfeeding, food allergies, or picky eating, perceived the support provided by the CHC as limited. This was also the case when a family's food preferences differed from those usually recommended. In these situations we might assume that the PHN had not been successful in promoting healthy practices to parents.

Another question when evaluating this complex intervention is *how the intervention works.* The answer, based on the study, is that the intervention did not work as intended. For the intervention to work as intended at the CHC, it should be implemented as described in the protocol. The intervention tool might be effective and useful in dietary counselling if its use leads to the initiation of a dialogue.

The tool was intended to benefit parents with a variety of concerns about their child's diet by promoting a two-way dialogue. However, according to the findings, it was often merely used for one-way communication of information by depicting healthy diet alternatives. This way of using the communication tool was seen to enhance the focus on healthy foods in general among parents whose existing expectations were positive to the general dietary advice from the health authorities before attending consultations at the CHCs and who did not have particular concerns about their child's diet.

Based on the findings we might conclude that more extensive training in principles related to the intended use of the communication tool about diet – namely to strengthen counselling on food and feeding practices based on a two-way dialogue at CHCs – should be an integrated part of PHN education in Norway as well as in-service-education for fully trained practising PHNs. Supplementary interventions in this context may require PHNs to have additional knowledge about food and feeding practices in counselling for at-risk populations. This study's findings may be useful when planning these interventions.

Research based on investigating how to strengthen PHNs efforts to promote a two-way dialogue when counselling about food and feeding practices is applicable. Further, the existing prototype of the image-based communication tool about diet used in this study could serve as a basis for developing an updated tool for nutrition counselling.

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Appendices

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Gjøril Bergva	22845529	05.08.2014	2014/726/REK sør-øst D
			Deres dato:	**Deres referanse:**
			27.06.2014	

Vår referanse må oppgis ved alle henvendelser

Bettina Holmberg Fagerlund

HiOA, Fak. HF; Pb 4, St.Olavsplass
0130 Oslo

2014/726 Bruk av samtaleverktøy om kosthold

Forskningsansvarlig: Høgskolen i Oslo og Akershus
Prosjektleder: Bettina Holmberg Fagerlund

Vi viser til tilbakemelding fra prosjektleder, mottatt 27.06.2014, i forbindelse med ovennevnte søknad. Tilbakemeldingen er behandlet av komiteens leder på delegert fullmakt.

Prosjektomtale
Dette er et doktorgradsprosjekt i helsevitenskap ved Høyskolen i Oslo og Akershus. Formålet med studien er å fremme optimalt kosthold for barnet på grunnlag av helsesøsters familiefokuserte samtaler på helsestasjonen. Studiedeltakere er foreldre med barn, 10 måneder – 2 år, på helsestasjoner i seks intervensjons- og kontrollkommuner som er utvalgt av SSB. Det skal være 300 deltagere i hver gruppe og de kommer fra Agder, Rogaland, Hordaland, Sogn og Fjordane, Møre og Romsdal, Østfold, Akershus, Oslo, Hedmark, Oppland, Buskerud, Vestfold, Telemark og Trøndelag. Foreldrenes forhold til kosthold skal også kartlegges. Samtaleverktøyet det legges opp til, er bruk av bilder/fotografier til å informere om sunt kosthold for småbarn. Foreldrene skal fylle ut diverse spørreskjemaer om barnets kosthold ved henholdsvis 10 mnd. stadiet og ved toårsalder-kontrollen på helsestasjonen.

Saksgang
Søknaden ble første gang behandlet i møtet 07.05.2014, hvor komiteen utsatte å fatte vedtak. Prosjektleder ble bedt om å klargjøre hensikten med studien, herunder primære og sekundære endepunkter, samt å redegjøre for inklusjonskriterier. Komiteen ba også om en begrunnelse for at spørreskjemaet er egnet. I tillegg hadde komiteen noen kommentarer til informasjonsskrivene.

Tilbakemelding fra prosjektleder forelå 27.06.2014.

Vurdering
I tilbakemeldingen har prosjektleder klargjort studiens formål, og det er redegjort for inklusjon- og eksklusjonskriterier og spørreskjemaets egnethet. Informasjonsskrivene er revidert.

Komiteen finner tilbakemeldingen tilfredsstillende og har ingen innvendinger til at prosjektet gjennomføres som bekrevet i søknad, protokoll og tilbakemelding fra prosjektleder. Komiteen setter imidlertid som vilkår for godkjenning at informasjonsskrivet til deltagerne også forteller at hensikten er å se om bruken av

samtaleverktøyet kan bidra til optimalt kosthold hos barnet.

Vedtak
Med hjemmel i helseforskningsloven § 9 jf. 33 godkjenner komiteen at prosjektet gjennomføres under forutsetning av at ovennevnte vilkår oppfylles.

I tillegg til vilkår som fremgår av dette vedtaket, er godkjenningen gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknad, protokoll og tilbakemelding fra prosjektleder, og de bestemmelser som følger av helseforskningsloven med forskrifter.

Tillatelsen gjelder til 31.12.2017. Av dokumentasjonshensyn skal opplysningene likevel bevares inntil 31.12.2022. Forskningsfilen skal oppbevares avidentifisert, dvs. atskilt i en nøkkel- og en opplysningsfil. Opplysningene skal deretter slettes eller anonymiseres, senest innen et halvt år fra denne dato.

Forskningsprosjektets data skal oppbevares forsvarlig, se personopplysningsforskriften kapittel 2, og Helsedirektoratets veileder for «Personvern og informasjonssikkerhet i forskningsprosjekter innenfor helse og omsorgssektoren».

Dersom det skal gjøres vesentlige endringer i prosjektet i forhold til de opplysninger som er gitt i søknaden, må prosjektleder sende endringsmelding til REK.

Prosjektet skal sende sluttmelding på eget skjema, senest et halvt år etter prosjektslutt.

Klageadgang
Du kan klage på komiteens vedtak, jf. forvaltningslovens § 28 flg. Klagen sendes til REK sør-øst D. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK sør-øst D, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Vi ber om at alle henvendelser sendes inn på korrekt skjema via vår saksportal: http://helseforskning.etikkom.no. Dersom det ikke finnes passende skjema kan henvendelsen rettes på e-post til: post@helseforskning.etikkom.no.

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen

Finn Wisløff
Professor em. dr. med.
Leder

Gjøril Bergva
Rådgiver

Kopi til:

Høgskolen i Oslo og Akershus ved øverste administrative ledelse: postmottak@hioa.no, fou-hf@hioa.no

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Ingrid Dønåsen	22845523	17.03.2016	2014/726 REK sør-øst D
			Deres dato:	**Deres referanse:**
			29.02.2016	

Vår referanse må oppgis ved alle henvendelser

Bettina Holmberg Fagerlund
Høgskolen i Oslo og Akershus

2014/726 Bruk av samtaleverktøy om kosthold

Forskningsansvarlig: Høgskolen i Oslo og Akershus
Prosjektleder: Bettina Holmberg Fagerlund

Vi viser til søknad om prosjektendring datert 29.02.2016 for ovennevnte forskningsprosjekt, samt e-post med supplerende informasjon datert 16.03.2016. Søknaden er behandlet av leder for REK sør-øst D på fullmakt, med hjemmel i helseforskningsloven § 11.

Endringene innebærer:
- Utsettelse av prosjektslutt til 31.12.2018.
- Nytt informasjonsskriv, for fase 2 av studien (intervju med foreldre).

Intervjuguide ble ettersendt via e-post den 16.03.2016.

Vurdering
REK har vurdert endringssøknaden og har ingen forskningsetiske innvendinger til endringene slik de er beskrevet i skjema for prosjektendring.

Vedtak
REK godkjenner prosjektet slik det nå foreligger, jfr. helseforskningsloven § 11, annet ledd.

Godkjenningen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknad, endringssøknad, oppdatert protokoll og de bestemmelser som følger av helseforskningsloven med forskrifter.

Klageadgang
REKs vedtak kan påklages, jf. forvaltningslovens § 28 flg. Eventuell klage sendes til REK sør-øst D. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK sør-øst D, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Vi ber om at alle henvendelser sendes inn på korrekt skjema via vår saksportal: http://helseforskning.etikkom.no. Dersom det ikke finnes passende skjema kan henvendelsen rettes på e-post til: post@helseforskning.etikkom.no.

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen

Finn Wisløff
Professor em. dr. med.
Leder

Ingrid Dønåsen
førstekonsulent

Kopi til: Nina Waaler, Dekan, HiOA: fou-hf@hioa.no
Høgskolen i Oslo og Akershus ved øverste administrative ledelse: postmottak@hioa.no

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Hege Cathrine Finholt, PhD	22857547	17.12.2018	2014/726/REK sør-øst D
			Deres dato:	**Deres referanse:**
			14.12.2018	

Vår referanse må oppgis ved alle henvendelser

Bettina Holmberg Fagerlund
OsloMet - storbyuniversitetet

2014/726 Bruk av samtaleverktøy om kosthold

Forskningsansvarlig: OsloMet - storbyuniversitetet
Prosjektleder: Bettina Holmberg Fagerlund

Vi viser til søknad om prosjektendring datert 14.12.2018 for ovennevnte forskningsprosjekt. Søknaden er behandlet av sekretariatet for REK sør-øst D på fullmakt, med hjemmel i helseforskningsloven § 11.

Endringene innebærer:
Ny prosjektslutt: 31.12.2019
Ny kontaktperson for forskningsansvarlig institusjon: Gro Jamtvedt

Vurdering
REK har vurdert søknaden og har ingen forskningsetiske innvendinger til endringene av prosjektet.

Vedtak
REK har gjort en forskningsetisk vurdering av endringene i prosjektet, og godkjenner prosjektet slik det nå foreligger, jf. helseforskningsloven § 11.

Klageadgang
REKs vedtak kan påklages, jf. forvaltningslovens § 28 flg. Eventuell klage sendes til REK sør-øst D. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK sør-øst D, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Vi ber om at alle henvendelser sendes inn på korrekt skjema via vår saksportal: http://helseforskning.etikkom.no. Dersom det ikke finnes passende skjema kan henvendelsen rettes på e-post til: post@helseforskning.etikkom.no.

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen

Knut Ruyter
Avdelingsdirektør
REK sør-øst sekretariatet

Hege Cathrine Finholt, PhD
Rådgiver

Kopi til: *fou-hf@hioa.no; postmottak@oslomet.no*

U.S. National Library of Medicine
ClinicalTrials.gov

Trial record **1 of 11** for: Communication tool about diet

Previous Study | Return to List | Next Study

The Use of a Communication Tool About Diet

The safety and scientific validity of this study is the responsibility of the study sponsor and investigators.
⚠ Listing a study does not mean it has been evaluated by the U.S. Federal Government. Read our disclaimer for details.

ClinicalTrials.gov Identifier: NCT02266953

Recruitment Status : Active, not recruiting
First Posted : October 17, 2014
Last Update Posted : April 3, 2019

Sponsor:
Oslo and Akershus University College of Applied Sciences

Collaborator:
University of Oslo

Information provided by (Responsible Party):
Oslo and Akershus University College of Applied Sciences

Study Details | Tabular View | No Results Posted | Disclaimer | How to Read a Study Record

Tracking Information

First Submitted Date ICMJE	October 8, 2014
First Posted Date ICMJE	October 17, 2014
Last Update Posted Date	April 3, 2019
Study Start Date ICMJE	January 5, 2015
Actual Primary Completion Date	June 28, 2018 (Final data collection date for primary outcome measure)
Current Primary Outcome	Increase in the daily intake of vegetables [Time Frame: An expected

Measures ICMJE (submitted: October 16, 2014)	average of 14 months from baseline] Metrics are based on parents answering Food Frequency Questionnaires (FFQs) on behalf of their child, at baseline and at endpoint. In addition to questions about the child's diet, there are questions about the child's weight and length at birth, six months, 10 months and 2 years. Both FFQs are updated versions, based on validated and standardized FFQs used in earlier national dietary surveys among infants and toddlers in Norway, conducted under the auspices of the University of Oslo, the Norwegian Food Safety Authority and the Norwegian Ministry of Health and Care Services (Spedkost [Infant Diet] 2006-2007 (IS-1635); Småbarnskost [Toddler Diet] 2007 (IS-1731)). Analyses of the data will be conducted by use of a diet calculation system. The expectation is an increased intake of 15 g vegetables daily, based on average intake of vegetables of 50 g daily at the age of 1 year according to Spedkost [Infant Diet] 2006-2007 (IS-1635) and Småbarnskost [Toddler Diet]2007 (IS-1731).
Original Primary Outcome Measures ICMJE	*Same as current*
Change History	Complete list of historical versions of study NCT02266953 on ClinicalTrials.gov Archive Site
Current Secondary Outcome Measures ICMJE (submitted: October 17, 2014)	Decreased proportion of saturated fat consumed daily [Time Frame: An expected average of 14 months from baseline] The metrics and analyses are in accordance with those described in the section of primary outcome measure. According to the literature, with the intervention the investigators expect a change of 10 % which means the consumption would go down to 10,8 %. Given the small proportions the investigators would need very large numbers of children to reveal such changes as statistically significant. With significance level of 5 % and power of 80 %, they would need 12 426 in each group which is not feasible for us at this stage. Therefore, the secondary aim will be treated as an exploratory analysis and the investigators only aim to describe the proportion of saturated fats consumed daily.
Original Secondary Outcome Measures ICMJE (submitted: October 16, 2014)	Decreased proportion of saturated fat consumed daily [Time Frame: An expected average of 14 months from baseline] The metrics and analyses are in accordance with those described in the section of primary outcome measure. According to the literature, with our intervention we expect a change of 10 % which means the consumption would go down to 10,8 %. Given the small proportions we would need very large numbers of

	children to reveal such changes as statistically significant. With significance level of 5 % and power of 80 %, we would need 12 426 in each group which is not feasible for us at this stage. Therefore, the secondary aim will be treated as an exploratory analysis and we only aim to describe the proportion of saturated fats consumed daily.
Current Other Pre-specified Outcome Measures (submitted: October 16, 2014)	Change in body weight [Time Frame: An expected average of 14 months from baseline] The metrics and analysis are in accordance with what is described under the section of primary outcome measure. This outcome measure will be treated as an exploratory analysis.
Original Other Pre-specified Outcome Measures	*Same as current*

Descriptive Information

Brief Title ICMJE	The Use of a **Communication Tool About Diet**
Official Title ICMJE	The Use of a **Communication Tool About Diet** in Public Health Nurse Consultations at the Child Health Centre When the Child is Aged 10 Months to 2 Years
Brief Summary	The purpose of this study is to promote optimal nutrition for the child based on the public health nurse's family-focused conversations at the child health centre. An image based **communication tool** is used in an intervention in order to promote dialogue and active participation by the parents about themes concerning food and feeding practices.
Detailed Description	Norway, as other Nordic countries, has a long-standing tradition of extensive and freely available health care for children under school age at the child health centre. Virtually all parents with small children use these child health centres, having regular encounters with public health nurses. This service aims at promoting health and preventing disease in the population. However, when comes to content and performance of conversation about food and feeding practices there are no guidelines regarding how to adapt the information to the individual child and to his or her family after infancy and up to two years of age. The overall purpose of this study is to promote optimal nutrition for the child based on the public health nurse's family-focused conversations at the child health centre. The design of the study is a cluster randomized controlled trial. Statistics Norway has on the basis of a systematic match drawn

samples of five pairs of municipalities in Norway. It is random which municipality in each match is extracted respectively to intervention or control municipality.

Public health nurses on child health centres within intervention municipalities will use a communication tool about food and feeding practices in their encounters with participating children and parents when the child is 10-, 12- and 15-18 months old. In the control municipalities corresponding encounters will be as usual, without use of the actual communication tool. The parents will answer a food frequency questionnaire on behalf of their child when the child is 10 months old (baseline) and at the age of two years (final measurement).

Sample size consideration: The aim of the study is to reveal change in vegetable intake. The investigators keep level of statistical significance at the customary 5 % and statistical power of 80 % (beta equal to 20 %), the investigators would need 176 children in each group to reveal the change described above as statistically significant.

The investigators expect some drop out and given that their estimate might be slightly higher, the investigators want to enroll 300 children in each group to make sure our study is sufficiently powered.

Plan for missing data: Concerning missing data the investigators will use mixed models for repeated measure, imputation of missing data will therefore not be necessary. All data will be analysed according to Intention to treat (ITT) analysis.

Analytical principles: Unadjusted (or crude) differences between intervention and control group will be assessed with t-tests (for continuous variables) and Chi-square tests (when we test for association between pairs of categorical data).

In case of continuous outcome variables, the investigators will model the differences between groups (scores from the questionnaires) using uni- and multiple linear regression methods.

All regression models will be conditioned on district variable and not individual level because the randomization was performed on district variable level.

The investigators treat this study as an exploratory analysis, however, they will fit several statistical models and perform several tests therefore a correction for multiple testing will be performed. P-values < 0,01 will be considered statistically significant.

Study Type ICMJE	Interventional
Study Phase ICMJE	Not Applicable
Study Design ICMJE	Allocation: Randomized Intervention Model: Parallel Assignment Masking: None (Open Label) Primary Purpose: Prevention
Condition ICMJE	**Dietary** Intervention
Intervention ICMJE	• Behavioral: Use of **communication tool about diet** The experimental intervention comprise the public health nurse's use of an image based **communication tool** in her dialogue with the family. This is in order to act in a patient centered way to facilitate participation by the parents and focus on relevant food and feeding practices from the parents' point of view. • Behavioral: Treatment as usual The public health nurses at child health centres in control municipalities are performing consultations at the child health centres as usual and without using the particular **communication tool about diet**.
Study Arms ICMJE	• Experimental: Use of **communication tool about diet** The children and parents in the intervention group are visiting consultations at the child health centre where the public health nurses use a **communication tool about diet** in order to promote dialogue about themes concerning food and feeding practices. This intervention is carried out at consultations when the child is 10-, 12- and 15-18 months old. Intervention: Behavioral: Use of **communication tool about diet** • Active Comparator: Treatment as usual The children and parents in the control group are visiting consultations at the child health centre where the public health nurses will conduct the consultations as usual and without use of the actual **communication tool about diet**. The consultations are carried out when the child is 10-, 12- and 15-18 months old. Intervention: Behavioral: Treatment as usual
Publications *	Holmberg Fagerlund B, Helseth S, Glavin K. Parental experience of

	counselling about food and feeding practices at the child health centre: A qualitative study. J Clin Nurs. 2019 May;28(9-10):1653-1663. doi: 10.1111/jocn.14771. Epub 2019 Jan 22.

*** Includes publications given by the data provider as well as publications identified by ClinicalTrials.gov Identifier (NCT Number) in Medline.**

Recruitment Information

Recruitment Status ICMJE	Active, not recruiting
Actual Enrollment ICMJE **(submitted: February 16, 2017)**	686
Original Estimated Enrollment ICMJE **(submitted: October 16, 2014)**	600
Estimated Study Completion Date ICMJE	December 31, 2019
Actual Primary Completion Date	June 28, 2018 (Final data collection date for primary outcome measure)
Eligibility Criteria ICMJE	Inclusion Criteria: 1. All parents and their children, regardless of the parents' country of origin or native language, who visit the child health centre when the particular child is six months old. 2. Parents that perceive themselves to have sufficient knowledge of Norwegian language to understand the information sheet in Norwegian about the study. Exclusion Criteria: 1. Parents and their children who do not visit the child health centre when the particular child is six months old. 2. Parents who do not experience to have sufficient knowledge of Norwegian to read and understand the written Norwegian information about the study. 3. The youngest twin and the midst and youngest triplet if the child is a twin or triplet.
Sex/Gender ICMJE	Sexes Eligible for Study: All
Ages ICMJE	6 Months to 3 Years (Child)
Accepts Healthy Volunteers ICMJE	No

Contacts ICMJE	*Contact information is only displayed when the study is recruiting subjects*
Listed Location Countries ICMJE	Norway
Removed Location Countries	

Administrative Information

NCT Number ICMJE	NCT02266953
Other Study ID Numbers ICMJE	2014/726
Has Data Monitoring Committee	No
U.S. FDA-regulated Product	*Not Provided*
IPD Sharing Statement ICMJE	Plan to Share IPD: No
Responsible Party	Oslo and Akershus University College of Applied Sciences
Study Sponsor ICMJE	Oslo and Akershus University College of Applied Sciences
Collaborators ICMJE	University of Oslo
Investigators ICMJE	Study Chair: Kari Glavin, PhD — Oslo and Akershus University College of Applied Sciences Study Chair: Sølvi Helseth, Professor — Oslo and Akershus University College of Applied Sciences
PRS Account	Oslo and Akershus University College of Applied Sciences
Verification Date	April 2019

ICMJE **Data element required by the International Committee of Medical Journal Editors and the World Health Organization ICTRP**

Appendix 3

The draw of municipalities/urban districts performed by Statistics Norway

Trekking av kommuner/bydeler

Trekkegrunnlag

Trekkegrunnlaget består av kommuner og bydeler. De kommunene som har bydeler er fjernet, og erstattet med sine bydeler. Kommuner i de tre nordligste fylkene, kommunene Asker og Drammen og bydelen Stovner er fjernet. Kommuner og bydeler med færre enn 100 fødte i 2012 er også fjernet. Trekkegrunnlaget består da av 139 kommuner/bydeler. Totalt i Norge er det 428 kommuner (inkludert de med bydeler) og til sammen 36 bydeler.

Kjennemerker:
Fodte2012: Antall fødte i 2012
Folkemengde: Folkemengde 2013
Andelinnv: Antall innvandrere er regnet ut som antall faktisk innvandrede pluss antall norskfødte med innvandrerbakgrunn. Tallene er fra 2013. Bare de med landbakgrunn fra Øst-Europa, Afrika, Asia og Sør- og Mellom-Amerika er talt med. For å få andel er det delt på folketallet. Tallet er også ganget med 100, så det er egentlig en prosent.
Andelhoyutd: Med høyere utdanning menes kort eller lang utdanning på universitets- og høyskolenivå. Kort utdanning på universitets- og høgskolenivå omfatter høyere utdanning t.o.m. 4 år. Lang utdanning på universitets- og høgskolenivå omfatter utdanninger på mer enn 4 år, samt forskerutdanning. Tallene er fra 2012. Også her er andelene ganget med hundre.
Landsdel: Landet er delt i to. Landsdel 1 er Agder, Rogaland, Hordaland, Sogn og Fjordane, og Møre og Romsdal. Landsdel 2 er resten.

Tallene som er brukt for å definere variablene er hentet fra Statistikkbanken (https://www.ssb.no/statistikkbanken/). Det er brukt en intern versjon, men mye av dette er tilgjengelig også eksternt.

Trekking av utvalget

Trekkegrunnlaget ble sortert etter landsdel og andel med høyere utdanning. Deretter ble det trukket et systematisk utvalg på 6 kommuner/bydeler. Dette innebærer at man trekker et tilfeldig startpunkt, og deretter trekker hver n-te enhet, der n velges slik at man ender opp med 6 enheter. Dette gjør at utvalget blir fordelt litt geografisk, og vi får også kommuner/bydeler med spredning i andel med høy utdanning.

Etter at utvalget var trukket, ble det funnet en match til hver av de uttrukne kommunene/bydelene. Dette er en kommune/bydel i samme landsdel som har omtrent samme andel innvandrere og andel med høyere utdanning, og ikke altfor stor forskjell i antall fødte.

Hvordan finne en lignende kommune/bydel?
Avstanden mellom innvandringsandeler er definert som differansen mellom andelene (absoluttverdi) delt på den minste andelen. Avstanden mellom utdanningsandeler er tilsvarende definert. Så dannes summen av disse avstandene. For kommuner/bydeler i forskjellige landsdeler eller der det er mer enn

100 prosent forskjell på antall fødte, legges det til på 100 på avstanden, for å være sikker på at de kommer bakerst i køen ved matching. Til slutt brukes den kommunen/bydelen med minst avstand til en gitt kommune/bydel som match.

Eksempel: en kommune= a og et fylke= y
Vi bruker variablene andelinnv og andelhoyutd fra trekkegrunnlaget. Dette er andeler ganget med hundre, altså prosenter. Avstanden blir den samme enten man regner med andeler eller prosenter, siden faktoren på 100 er den samme i teller og nevner.

Avstand mellom innvandringsprosenter: $|8{,}7918 - 8{,}7755| / 8{,}7755 = 0{,}0163 / 8{,}7755 = 0{,}0018574$
Avstand mellom utdanningsprosenter: $|23{,}5749 - 22{,}7528| / 22{,}7528 = 0{,}8221 / 22{,}7528 = 0{,}036132$

Summen av avstandene: 0,0018574+0,036132=0,03799

Avstand mellom antall fødte: $|296 - 257| / 257 = 0{,}152 = 15{,}2\%$

Siden de er i samme landsdel, og det er mindre enn 100 prosent forskjell i antall fødte, legges det ikke til noe mer, og avstanden blir 0,03799. Hvis de hadde vært i forskjellig landsdel, eller forskjellen i antall fødte hadde vært mer enn 100 prosent, ville avstanden blitt 100,03799, og de ville ikke blitt matchet.

Excelark

På excelarket Kommuneutvalg.xls er det tre faner:

Trekkegrunnlag: Inneholder alle de 139 enhetene i trekkegrunnlaget

Utvalg_par: Denne fanen inneholder de 6 enhetene som ble trukket først, sammen med beste match for hver av dem. De med avstand 0 er de opprinnelige, og rett under hver står beste match.

Flere_matcher: Denne fanen inneholder de fire beste matchene til hver av de 12 enhetene på utvalg_par. Disse kan brukes som reserver. De er ordnet i grupper på fem, der den kommunen som skal matches står først i gruppen, og under følger de fire beste matchene. Hvis for eksempel a ikke vil være med, kan man finne en ny match til y ved å lete opp linja i Flere_matcher der kommbydel er y og avstand er 0 (linje 22). De fire enhetene under denne linja er de fire beste matchene til y. Den første er altså a, som allerede har sagt nei, så da må man gå videre til neste kommune= b.

~~Vedlegg 4~~

Oslo xx.xx.2014

Leder
……..kommune

……

Søknad om gjennomføring av forskningsprosjekt

i …….-kommune

Undertegnede PhD-kandidat, cand.san., helsesøster Bettina H Fagerlund og førsteamanuensis, PhD, helsesøster Kari Glavin, begge ansatt ved Høgskolen i Oslo og Akershus (HiOA), søker med dette om tillatelse til å gjennomføre et forskningsprosjekt ved helsestasjoner i deres kommune.

Forskningsprosjektet har arbeidstittelen: **«Bruk av samtaleverktøy om kosthold»**. Planlagt start er i august 2014. Antatt maksimal tid for forskningsprosjektet fra studiestart til studieslutt på den enkelte helsestasjon er to år.

Statistisk sentralbyrå har stått for trekkingen av 12 aktuelle kommuner til forskningsprosjektet, og …….-kommune har blitt trukket ut tilfeldig.

Studien er anbefalt gjennomført av REK ……. NSD……

Bakgrunn for studien er at helsestasjonen er en sentral arena i folkehelsesammenheng grunnet nær 100 prosents oppslutning om tjenesten blant barnefamilier. Myndighetenes retningslinjer tilsier at helsesøster på helsestasjonen har et ansvar for å samtale med foreldre om barnets ernæring, kosthold og spisevaner. Samtidig er det gitt lite konkret forslag til innhold i samtalene og hvordan samtalene skal gjennomføres. Med utgangspunkt i dette har forskningsprosjektet til hensikt å undersøke hvordan helsesøsters bruk av et bildebasert samtaleverktøy om kosthold i sitt møte med den enkelte familie under tre helsestasjonskonsultasjoner kan ha innvirkning på barnets kosthold samt foreldrenes opplevelse.

Forskningsprosjektet utføres ved de tre anbefalte helsestasjonskonsultasjonene når barnet er 10 måneder, 12 måneder og 15-18 måneder.

Helsestasjonene innenfor en og samme kommune vil være enten «intervensjonshelsestasjoner» eller «kontrollhelsestasjoner». På intervensjonshelsestasjon vil helsesøstre før prosjektstart få to dagers orientering av PhD-kandidaten. Dette inkluderer opplæring i bruken av det bildebaserte samtaleverktøyet om kosthold. Etter dette benytter helsesøstre ved intervensjonshelsestasjoner seg av samtaleverktøyet ved de aktuelle konsultasjonene. På kontrollhelsestasjoner vil helsesøster få en kortere orientering om prosjektet i løpet av en dag og utføre vanlige helsestasjonskonsultasjoner ved tre tidspunkt, når barnet er 10 måneder, 12 måneder og 15-18 måneder. Foreldre som har samtykket til å delta i studien skal besvare spørreskjemaer relatert til barnets kosthold og til egen mestring to ganger; 1) en gang før 10-måneders konsultasjonen og 2) en gang etter 2 års konsultasjonen.

Forskningsprosjektet skal så langt som mulig tilpasses de eksisterende tidsrammene og myndighetsanbefalt helsestasjonsprogram. En må likevel forvente noe økt tidsbruk for helsesøstre og foreldre med barn som er studiedeltakere ved helsestasjoner som er del i forskningsprosjektet.

Helsesøstre på kontrollhelsestasjoner vil få tilbud om opplæring i bruk av samtaleverktøy om kosthold etter gjennomført forskningsprosjekt.

Helsesøstre og studiedeltakere (foreldre og barn) garanteres full konfidensialitet ved gjennomføring av studien og det vil ikke være mulig å identifisere studiedeltakere eller helsesøstre i resultatene av forskningsprosjektet når de publiseres. Alle svar på spørreskjemaer vil bli behandlet i samsvar med forskningsprosjektets hensikt. En kode knytter svar på spørreskjema til en navne- og adresseliste for barn og foreldre. Kun autorisert personell knyttet til prosjektet har tilgang til navne- og adresselisten. Tidspunkt for sletting av navne- og adresseliste er snarest og senest før utgangen av år 2018.

Det understrekes at det er frivillig for foreldre og barn å delta, og at studiedeltaker når som helst kan trekke seg fra studien uten å oppgi begrunnelse.

Kari Glavin er hovedveileder i forskningsprosjektet. I tillegg inngår som medveiledere, professor Sølvi Helseth (Institutt for sykepleie, HiOA) og professor Lene Frost Andersen (Avdeling for ernæringsvitenskap, Universitetet i Oslo).

Vi håper på positivt svar. Ved positivt svar vil vi straks ta kontakt for å legge nærmere avtaler om praktisk tilretteleggelse og gjennomføring.

Ta gjerne kontakt med oss ved eventuelle spørsmål.

Vi ber dere vennligst snarest og senest innen …. om å besvare vår henvendelse gjennom å fylle ut og returnere svarslippen i vedlagte ferdigadresserte og frankerte konvolutt.

Med vennlig hilsen

Kari Glavin
Førsteamanuensis, PhD
E-post: Kari.Glavin@hioa.no
Tlf.(a): 67236093
Mobil: 97094206

Bettina H Fagerlund
PhD-kandidat, Cand san
E-post: Bettina.Fagerlund@hioa.no
Tlf. (a): 64849252
Mobil: 90085441

Vennligst klipp
…….....
og send i vedlagte konvolutt.

Kryss for enten Ja eller Nei.

Forskningsprosjektet med arbeidstittel: «Bruk av samtaleverktøy om kosthold»

- **start høsten 2014 tillates gjennomført: JA ☐ / NEI ☐**

Sted/Kommune Dato Navn / Stilling Signatur

HØGSKOLEN I OSLO
OG AKERSHUS

Oslo/Kjeller ….2014

Ledende helsesøster

kommune/bydel

……

Avtale om gjennomføring av studie

Viser til tidligere henvendelse vedrørende dette forskningsprosjektet. Undertegnede doktorgradskandidat, helsesøster Bettina Holmberg Fagerlund; førsteamanuensis, helsesøster Kari Glavin og professor, helsesøster Sølvi Helseth, alle tre ansatt ved Høgskolen i Oslo og Akershus (HiOA), søker med dette om bekreftelse for å gjennomføre en studie ved helsestasjon(er) i deres kommune. Professor Lene Frost Andersen ved Avdeling for ernæringsvitenskap, Universitetet i Oslo, er i tillegg til Kari Glavin og Sølvi Helseth veileder for studien.

Studien inngår i et forskningsprosjekt, som er Bettina Holmberg Fagerlunds doktorgradsprosjekt, med arbeidstittelen: **«Bruk av samtaleverktøy om kosthold»**.

Studien er godkjent av Regionale komiteer for medisinsk og helsefaglig forskningsetikk (REK).

Deres kommune er trukket ut av Statistisk sentralbyrå som en av til sammen 6 kommune-/bydelspar (totalt 12) hvor studien er planlagt gjennomført. Tidspunkt for oppstart er i januar/februar 2015 og den er forventet å gå ut desember 2016.

Studien har sin bakgrunn i myndighetenes veileder for helsestasjonstjenesten og retningslinjer som blant annet tar opp helsesøsters ansvar innenfor helsestasjonstjenesten når det gjelder samtaler om barnets ernæring, kosthold og spisevaner. Tematikken kan ha avgjørende betydning i et folkehelseperspektiv og med hensyn til det enkelte barns helse og familiens kosthold.

Studiens hensikt er å undersøke hvilken forskjell helsesøsters bruk av et bildebasert samtaleverktøy om kosthold kan ha på barnets kosthold.

Av hvert kommune-/bydelspar som er trukket vil den ene kommunen/bydelen være en «intervensjonskommune/bydel» den andre en «kontrollkommune/bydel». Dette vil bli avgjort ved trekning. Helsestasjoner innenfor «intervensjonskommuner/-bydeler» vil være arena for intervensjonen. Intervensjonen innbefatter at samtaleverktøy brukes i helsesøsters møte med den enkelte familie ved tre helsestasjonskonsultasjoner (når barnet er 10 måneder, 12 måneder og 15-18 måneder). Ved helsestasjoner innenfor «kontrollkommuner/-bydeler» vil vanlige helsestasjonskonsultasjoner bli gjennomført som en del av studien. Studiedeltakere er foreldre med barn som har fått informasjon om studien og takket ja til deltakelse i den.

Studien er tilpasset eksisterende tidsrammer og myndighetsanbefalt helsestasjonsprogram. Bettina Holmberg Fagerlund personlig vil stå for administrering av studien. Dette innbefatter blant annet

tett kontakt med helsesøstre samt oppfølging av de aktuelle helsestasjonene ved gjennomføring av studien.

Helsesøstre ved helsestasjoner innenfor intervensjonskommuner/-bydeler vil, av Bettina Holmberg Fagerlund, få to dagers informasjon og opplæring i bruken av samtaleverktøyet.

Helsesøstre ved helsestasjoner i kontrollkommuner/-bydeler vil få informasjon om studien i løpet av en dag. De vil få tilbud om tilgang til samtaleverktøyet og opplæring i bruken av samtaleverktøyet straks etter at forskningsprosjektet er sluttført.

Studien er planlagt på en måte som skal være overkommelig i en travel helsesøsterhverdag.

Forskningsprosjektet er finansiert med midler fra Høgskolen i Oslo og Akershus samt Norsk Sykepleierforbund.

Helsesøstre og studiedeltakere (foreldre og barn) garanteres full konfidensialitet ved gjennomføring av studien og det vil ikke være mulig å identifisere studiedeltakere eller helsesøstre i resultatene av forskningsprosjektet når de publiseres.

Det understrekes at det er frivillig for foreldre og barn å delta, og at studiedeltaker når som helst kan trekke seg fra studien uten å oppgi begrunnelse.

Vi håper på positivt svar. Når svarene fra kommunene/bydelene er mottatt vil Bettina Holmberg Fagerlund ta kontakt med hver enkelt kommune/bydel for å informere om kommunen er intervensjons- eller kontrollkommune/-bydel og legge nærmere avtaler om praktisk tilrettelegging og gjennomføring.

Vi ber dere vennligst om å snarest og senest innen 6.11.2014 besvare vår henvendelse gjennom å fylle ut og returnere vedlagte svarslipp i vedlagte svarkonvolutt.

Ta gjerne kontakt ved eventuelle spørsmål.

Med vennlig hilsen

Bettina Holmberg Fagerlund
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E-post: Bettina.Fagerlund@hioa.no

Kari Glavin
Førsteamanuensis, PhD
E-post: Kari.Glavin@hioa.no

Sølvi Helseth
Professor, PhD
E-post: Solvi.Helseth@hioa.no

Institutt for helse, ernæring og ledelse
Fakultet for helsefag
Høgskolen i Oslo og Akershus
Postboks 4, St. Olavsplass
0130 Oslo
Tlf. (a): 64849252
Mobilnr.: 90085441

Vedlegg = Svarslipp & svarkonvolutt

SVARSLIPP

Vennligst kryss av ved a) og b), samt fyll ut riktig antall ved c),
signer og send svarslipp i vedlagte ferdig frankerte svarkonvolutt, innen 6.11.2014.

Angående forskningsprosjektet: «Bruk av samtaleverktøy om kosthold»:

a) **oppstart av forskningsprosjektet i januar/februar 2015 bekreftes: JA ☐ / NEI ☐**
<u>Positivt svar er bindende.</u>

b) **min kommune tilbyr individuelle konsultasjoner med helsesøster til alle barn når de er i alderen 10 måneder, 12 måneder og 15-18 måneder: JA ☐ / NEI ☐**

c) **Antall helsesøstre som er delaktige i studien i min kommune: _____**

Sted/Kommune Dato Navn / Stilling Signatur

Avtale om rettigheter til bruk av bildemateriale utviklet i SOMAH prosjektet

mellom:

Institutt for helse, ernæring og ledelse

Fakultet for helsefag

Høgskolen i Oslo og Akershus

(heretter kalt HiOA/HEL)

og

[navn på helsestasjon/kommune]

Som kompensasjon for at [navn på helsestasjonen/ kommunen] deltar i forskningsprosjektet *Bruk av samtaleverktøy om kosthold*, skal helsestasjonen få en vederlagsfri bruksrett til å utnytte dette materialet bestående av bilder med tilhørende tekst ved 10, 12 og 15-18 måneders konsultasjonene.

Helsestasjonen/kommunen kan ikke benytte materialet til andre formål uten skriftlig avtale.

Det forutsettes at de tilsatte ved helsestasjonen behandler fortrolig all materiale og informasjon de mottar skriftlig, muntlig eller på annen måte i forbindelse med forskningsprosjektet *Bruk av samtaleverktøy om kosthold*. Materialet skal tas i bruk i to planlagte forskningsprosjekter. En deling av materialet vil kunne kontaminere resultatene fra disse prosjektene. Ledelsen ved helsestasjonen har ansvar for at alle tilsatte ved helsestasjonen, som skal få tilgang til det visuelle billedmaterialet, gjøres kjent med dette og signerer på denne avtalen.

Når forskningsprosjektene beskrevet overfor er avsluttet, blir helsestasjonen underrettet og denne avtalen vil ikke lenger være gjeldende.

Partene er erstatningspliktig for eventuelle tap et brudd på denne avtale medfører for den andre parten.

Partene skal ved forhandlinger søke å løse konflikter som måtte oppstå i forbindelse med eller som er et resultat av denne avtalen. Dersom dette ikke lar seg gjøre, velger partene Oslo tingrett som verneting.

Sted/dato

....

Bettina Holmberg Fagerlund
Prosjektleder /Ph.d.-kandidat
HiOA/HEL

[leder ved helsestasjonen/kommunen]

Avtale om rettigheter til bruk av bildemateriale utviklet i SOMAH prosjektet

Signeres av alle tilsatte som får tilgang til materialet:

Jeg bekrefter å ha lest, og er innerforstått med, at det visuelle materialet og eventuell informasjon knyttet til prosjektet som jeg mottar skriftlig, muntlig eller på annen måte, skal behandles fortrolig.

1) Navn:…… Signatur: ……
   Sted og dato:……..
2) Navn:…… Signatur: ……
   Sted og dato:……..
3) Navn:…… Signatur: ……
   Sted og dato:……..
4) Navn:…… Signatur: ……
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5) Navn:…… Signatur: ……
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   Sted og dato:……..
8) Navn:…… Signatur: ……
   Sted og dato:……..
9) Navn:…… Signatur: ……
   Sted og dato:……..
10) Navn:…… Signatur: ……
    Sted og dato:……..
11) Navn:…… Signatur: ……
    Sted og dato:……..
12) Navn:…… Signatur: ……
    Sted og dato:……..

Forespørsel om deltakelse i forskningsprosjektet

«Bruk av samtaleverktøy om kosthold»

Bakgrunn og hensikt

Dette er spørsmål til deg om å delta i en studie som inngår i et forskningsprosjekt. Bakgrunn for studien er at foreldreveiledning om ernæring, kosthold og spisevaner er anbefalt som innhold i hver konsultasjon på helsestasjonen fra at barnet er nyfødt og fram til skolealder. Det finnes imidlertid lite konkret forslag til hva helsesøsters motivasjonssamtaler, relatert til levevaner, skal inneholde og hvordan de kan tilpasses den enkelte families levevaner.

Studiens hensikt å undersøke om helsesøsters bruk av et bildebasert samtaleverktøy kan bidra til optimalt kosthold for barnet. Samtaleverktøyet er utviklet for å invitere til en samtale om kosthold som er tilpasset barnet i den enkelte familie. Ved hjelp av samtaleverktøyet kan foreldre og helsesøster finne bestemte tema som oppleves meningsfylt å fokusere på ut fra barnets og familiens behov. Studien er godkjent av Regionale komiteer for medisinsk og helsefaglig forskningsetikk (REK).

Bildene som inngår i samtaleverktøy er fotografier av mat, spisesituasjon og emballasje, som kan skape gjenkjennelse i butikk. Bildematerialet er utviklet i et tidligere forskningsprosjekt ved Høgskolen i Oslo og Akershus, SOMAH-prosjektet 2010-2013.

Statistisk sentralbyrå har trukket ut kommuner/bydeler hvor forskningsprosjektet skal foregå. Alle foreldre innenfor en trukket kommune/bydel som besøker helsestasjonen med sitt barn til 6-måneders undersøkelsen vil få informasjon om studien og tilbud om å delta.

Ansvarlige for gjennomføringen av studien er PhD-kandidat, helsesøster Bettina Holmberg Fagerlund samt veilederne for forskningsprosjektet førsteamanuensis, helsesøster Kari Glavin og professor, helsesøster Sølvi Helseth. Alle tre er ansatt ved Høgskolen i Oslo og Akershus. Professor Lene Frost Andersen, Avdeling for ernæringsvitenskap, Universitetet i Oslo, er også veileder for forskningsprosjektet.

Hva innebærer studien?

Du kan samtykke til å delta i studien. Ved å samtykke til deltakelse vil du og ditt barn følge de oppsatte helsestasjonskonsultasjonene når barnet er 10 måneder, 12 måneder og 15-18 måneder. For en del av studiedeltakere vil helsesøster samtale om barnets kosthold i konsultasjonene ved å samtidig benytte bildebasert samtaleverktøy om kosthold. Andre studiedeltakere får tilbud om vanlige konsultasjoner på helsestasjonen uten at bildebasert samtaleverktøy blir brukt.

Felles for alle foreldre som er deltakere i studien er at de får hjemsendt et spørreskjema om barnets kosthold to ganger: før 10 måneders undersøkelsen og etter 2 års undersøkelsen. Foreldre bes om å fylle ut spørreskjemaene om barnets kosthold på vegne av sitt barn. Bettina Holmberg Fagerlund vil ta kontakt pr. telefon for å gi en påminnelse om utfylling av spørreskjemaet før 10-måneders undersøkelsen og etter 2-års undersøkelsen. I spørreskjemaet etterspørres også barnets vekt og lengde ved fødsel, 6 måneder, 10 måneder og 2 år.

Mulige fordeler og ulemper
Forskningsprosjektet er tilpasset de eksisterende tidsrammene og myndighetsanbefalt helsestasjonsprogram. Som studiedeltaker kan man likevel bruke noe mer tid i forbindelse med helsestasjonsbesøk. I tillegg vil man som studiedeltaker bruke ca. 40 min. på å fylle ut spørreskjemaene som inngår i studien.

Hva skjer med informasjonen om deg?
Informasjonen som registreres om deg og ditt barn skal kun brukes slik som beskrevet under studiens hensikt. Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter deg til dine opplysninger gjennom en navne-, telefonnummer- og adresseliste. Vi trenger barnets navn og fødselsdato samt foreldres navne-, telefonnummer- og adresseopplysninger og for å kunne sende spørreskjemaer direkte til deg og ved behov minne deg på å besvare spørreskjema. Vi ber derfor om at du påfører ditt navn og barnets navn samt fødselsdato samt ditt telefonnummer og adresse, og signerer på det siste arket i dette informasjonsskjema. Legg utfylt og signert samtykkeskjema i vedlagte svarkonvolutt som du lukker og gir helsesøster som i sin tur sender det til Bettina Holmberg Fagerlund.

Det er kun autorisert personell knyttet til prosjektet som har adgang til navne-, telefonnummer- og adresselisten og som kan finne tilbake til deg. Tidspunkt for sletting av navne-, telefonnummer og adresseliste er før utgangen av år 2022.

Det vil ikke være mulig å identifisere deg i resultatene av studien når de blir publisert.

Økonomi
Forskningsprosjektet er støttet med midler fra Høgskolen i Oslo og Akershus samt Norsk Sykepleierforbund.

Frivillig deltakelse
Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dette vil ikke få konsekvenser for deg videre og i kontakt med helsestasjonen. Dersom du ønsker å delta, undertegner du samtykkeerklæringen på siste side. Om du nå sier ja til å delta, kan du altså senere trekke tilbake ditt samtykke uten at det påvirker din øvrige behandling. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du kontakte:

Bettina Holmberg Fagerlund	Kari Glavin	Sølvi Helseth
PhD-kandidat	Førsteamanuensis	Professor
E-post:Bettina.Fagerlund@hioa.no	Kari.Glavin@hioa.no	Solvi.Helseth@hioa.no
Tlf. (a): 64 84 92 52	Tlf. (a): 67 23 60 93	Tlf (a): 67 23 62 30
Mobil: 90085441		

Fyll ut og signer (en eller begge foreldre) på siste side, side 3 – riv av - samt legg side 3 i vedlagte svarkonvolutt. Gi heretter konvolutten til helsesøster som signerer og sender konvolutten til Bettina Holmberg Fagerlund.

Fylles ut av en forelder / begge foreldre:

NAVN - BARN:_____ f.:_____

NAVN – FORELDER:_____

Telefon/mobiltelefonnummer:_____

NAVN – FORELDER: _____

Telefon/mobiltelefonnummer:_____

ADRESSE:_____

_____

Samtykke til deltakelse i studien (en eller begge foreldre), på vegne av meg selv og mitt barn:

Jeg er villig til å delta i studien

(Signert av forelder/prosjektdeltaker, dato)

Jeg er villig til å delta i studien

(Signert av forelder/prosjektdeltaker, dato)

Kryss av her: ☐
om du samtykker til at Bettina Holmberg Fagerlund kan kontakte deg senere pr. telefon for å gi informasjon om en intervjuundersøkelse.

Jeg (helsesøster) bekrefter å ha gitt informasjon om studien på
helsestasjon (navn): _____

(Signert av helsesøster, dato)

Tidspunkt for 10-månedersundersøkelse på helsestasjon (fylles ut av helsesøster dersom avtalt):

_____

HØGSKOLEN I OSLO
OG AKERSHUS

FORESPØRSEL OM DELTAKELSE I FORSKNINGSPROSJEKTET

«BRUK AV SAMTALEVERKTØY OM KOSTHOLD -INTERVJUUNDERSØKELSE «

Det vises til tidligere telefonsamtale hvor Bettina Holmberg Fagerlund gav informasjon om eventuell deltakelse i en intervjuundersøkelse. Dette er et spørsmål til deg om å delta i fase 2 (siste fase) av forskningsprosjektet «Bruk av samtaleverktøy om kosthold». Gjennom intervjuundersøkelsen ønsker vi å få innblikk i hvordan foreldre: a) har erfart å delta i konsultasjoner på helsestasjonen hvor et bildebasert samtaleverktøy om kosthold har blitt benyttet samt b) på hvilken måte familiens og barnets kosthold har blitt påvirket etter deltakelsen i konsultasjonene på helsestasjonen.

Ansvarlige for gjennomføring av intervjuundersøkelsen er PhD-kandidat, helsesøster Bettina Holmberg Fagerlund samt veilederne for forskningsprosjektet professor, helsesøster Kari Glavin og professor, helsesøster Sølvi Helseth; Institutt for sykepleie og helsefremmende arbeid, Fakultet for helsefag, Høgskolen i Oslo og Akershus.

HVA INNEBÆRER PROSJEKTET?

Dersom du samtykker til å delta i intervjuundersøkelsen vil Bettina Holmberg Fagerlund snarest ta kontakt med deg pr. telefon for å avtale om tidspunkt og sted for å gjennomføre intervjuet. Sted for gjennomføring av intervjuet kan være i ditt hjem, eller et annet egnet sted. Intervjuet er planlagt å ta mellom 30 – 60 minutter. Det vil bli spurt om dine erfaringer fra å delta på helsestasjonskonsultasjoner hvor helsesøster har benyttet samtaleverktøy om kosthold samt om dine tanker og erfaringer angående barnets og familiens kosthold i etterkant av konsultasjonene. Bettina Holmberg Fagerlund vil utføre intervjuet og intervjuet vil tas opp på bånd.

MULIGE FORDELER OG ULEMPER

Intervjuundersøkelsen vil ikke gi deg noen fordeler. En ulempe er tid som du må sette av til intervjuet.

FRIVILLIG DELTAKELSE OG MULIGHET FOR Å TREKKE SITT SAMTYKKE

Det er frivillig å delta i prosjektet. Dersom du ønsker å delta, undertegner du samtykkeerklæringen på siste side. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke. Dette vil ikke få konsekvenser for din videre kontakt med helsestasjonen. Dersom du trekker deg fra prosjektet, kan du kreve å få slettet intervjuet, med mindre opplysningene allerede inngår i analyse eller er brukt i vitenskapelige publikasjoner. Dersom du senere ønsker å trekke deg eller har spørsmål til prosjektet, kan du kontakte:

Bettina Holmberg Fagerlund, mobilnr. 900 85 441,
epost: Bettina.Holmberg-Fagerlund@hioa.no; Kari Glavin, tlf. 67 23 60 93,
epost: Kari.Glavin@hioa.no; Sølvi Helseth, tlf. 67 23 62 30, epost: Solvi.Helseth@hioa.no

HVA SKJER MED INFORMASJONEN OM DEG?

Informasjonen som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Du har rett til innsyn i hvilke opplysninger som er registrert om deg og rett til å få korrigert eventuelle feil i de opplysningene som er registrert.

Alle opplysningene vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter deg til dine opplysninger gjennom en navneliste.

Prosjektleder Bettina Holmberg Fagerlund har ansvar for den daglige driften av forskningsprosjektet og at opplysninger om deg blir behandlet på en sikker måte. Informasjon om deg vil bli anonymisert eller slettet senest fem år etter prosjektslutt.

GODKJENNING

Prosjektet er godkjent av Regional komite for medisinsk og helsefaglig forskningsetikk (REK), saksnummer: 2014/726.

SAMTYKKE TIL DELTAKELSE I PROSJEKTET

JEG ER VILLIG TIL Å DELTA I PROSJEKTET (EN ELLER BEGGE FORELDRE)

Sted og dato	Deltakers signatur
	Deltakers navn med trykte bokstaver
Sted og dato	Deltakers signatur
	Deltakers navn med trykte bokstaver

Implemented interventions and standard consultations, the distribution of completed semi-quantitative food frequency questionnaires (SFFQs) and help sheets at endpoint in five matched pairs of municipalities.

The matched municipalities	**Match 1**		**Match 2**		**Match 3**		**Match 4**		**Match 5**	
	Intervention	**Control**	**Intervention**	**Control**	**Intervention**	**Control**	**Intervention**	**Control**	**Intervention**	**Control**
Distribution of the completed SFFQs (n=250)	30	27	18	19	44	23	25	21	23	20
Distribution of the returned help sheets (n=231)	28	24	17	15	44	21	23	21	23	15
Implemented interventions or standard consultations n (%), based on the information in the help sheets	24 (86%)	24 (100%)	16 (94%)	15 (100%)	40 (91%)	21 (100%)	19 (83%)	21 (100%)	16 (70%)	15 (100%)

HJELPEARK FOR HELSESØSTER PR. FAMILIE SOM FØLGER INTERVENSJONEN

Barnets navn:_____ **f.:** _____ **Foreldres navn:**_____

Tids-punkt	**6 måneders undersøkelse; Dato:**	**10 måneders undersøkelse; Dato:**	**12 måneders undersøkelse; Dato:**	**15 – 18 måneders undersøkelse; Dato:**	**2 års Undersøkelse; Dato:**
Opp-gaver	Muntlig informasjon om studien er gitt foreldre. ☐ Skriftlig informasjonsskriv samt ferdig konvolutt er delt ut & helsesøster har underskrevet. ☐ Samlet inn lukket konvolutt (med utfylt samtykkeskjema) fra foreldrene – ☐ KONVOLUTT MED FORELDERS SVAR SENDES FORSKER I FERDIG SVAR-KONVOLUTT ☐	Målt barnets Vekt og høyde. ☐ • Total tidsbruk i konsultasjon ca.: _____ min. • Tid brukt til intervensjon ca.: _____min.	• Total tidsbruk i konsultasjon (hos helse-søster) ca.: _____ min. • Tid brukt til intervensjon ca.: _____min.	• Total tidsbruk i konsultasjon ca.: _____ min. • Tid brukt til intervensjon ca.: _____min.	Målt barnets vekt og høyde. ☐ SENDE DETTE SKJEMAET TIL FORSKER I FERDIG SVAR-KONVOLUTT
Inter-ven-sjon		Kartlagt: Hvem lager mat i familien, hvem bestemmer hva som spises, tilbys samme mat til barn og voksne? Hvordan spiser barnet?/selv? ☐ Vist bilde: - **Spise selv** ☐ - **Tallerkenmodellen** ☐ - **«5 om dagen»** ☐ - **Brødvalg** ☐ - **Påleggsvalg** ☐ - **Inspirasjon smak yoghurt** ☐ - **Yoghurt, sukkerinnhold** ☐ - **Valgt 1-2 temaer som er noe utdypet** ☐	Kartlagt: Hvordan barnet er i gang med sine måltider i ft den øvrige families måltider? ☐ Vist bilde: - **Spise selv** ☐ - **Melketyper** ☐ - **En porsjon grønnsak/frukt** ☐ - **Grøt & frokostblandning** ☐ - **Grøt, smaksette** ☐ - **Drikke, sukkerinnhold** ☐ - **Valgt 1-2 temaer som er noe utdypet** ☐	Kartlagt: Hvordan barnet er i gang med sine måltider i ft den øvrige families måltider? ☐ Vist bilde: - **Måltid** ☐ - **Rollemodell** ☐ - **Grønnsaker, inspirasjon** ☐ - **Frukt, inspirasjon** ☐ - **Pasta, fullkorn** ☐ - **Ris, fullkorn** ☐ - **Melk & smaksatt melk** ☐ - **Valgt 1-2 temaer som er noe utdypet** ☐	

VEND! side 1

HJELPEARK FOR HELSESØSTER PR. FAMILIE SOM FØLGER VANLIGE KONSULTASJONER

Barnets navn:_____ **f.:** _____ **Foreldres navn:**_____

Tids-punkt	**6 måneders undersøkelse** **Dato:**	**10 måneders undersøkelse** **Dato:**	**12 måneders undersøkelse** **Dato:**	**15 – 18 måneders undersøkelse** **Dato:**	**2 års Undersøkelse** **Dato:**
Opp-gaver	Muntlig informasjon om studien er gitt ☐ Skriftlig informasjonsskriv samt ferdig konvolutt er delt ut & helsesøster signert selv ☐ Samlet inn lukket konvolutt (med utfylt samtykkeskjema) fra foreldrene – ☐ FERDIG KONVOLUTT MED FORELDERS SVAR SENDES FORSKER ☐	Målt barnets vekt og høyde. ☐ • Total tidsbruk i konsultasjon ca.: _____ min.	• Total tidsbruk i konsultasjon ca.: _____ min.	• Total tidsbruk i konsultasjon ca.: _____ min.	Målt barnets Vekt og høyde. ☐ SENDE DETTE SKJEMAET TIL FORSKER I FERDIG KONVOLUTT

Utfyllende kommentarer (ved behov):

_____

_____

HØGSKOLEN I OSLO
OG AKERSHUS

Samtaleverktøy om kosthold

Bildemateriale til bruk på helsestasjonen i helsesøsters samtale med foreldre/foresatte ved individuell konsultasjon når barnet er 10 måneder, 12 måneder og 15-18 måneder.

Formål med bildemateriale

Intensjonen med bildematerialet er å invitere til samtale om kosthold som er tilpasset barnet i den enkelte familie. Bildematerialet inneholder elementer som er med og kartlegger barnets kosthold og gir rom for ulike matkulturelle praksiser. Bildematerialets brukertilpasning er i forhold til personer uten nødvendigvis høy helsefremmende allmenndannelse også kalt *health literacy* (Nutbeam, 1998). Dette vil si at personer uansett nivå av leseferdigheter, tall-ferdigheter og helsebegrepsforståelse kan få utbytte av bildematerialet. I bildematerialet inngår blant annet bilder av en del emballasje, som kan skape gjenkjennelse i butikk, slik at den enkelte kan få hjelp i overgangen fra kostråd til konkrete valg. Myndighetenes merkeordninger fremmes aktivt. Ønsket atferd presiseres og man vil derfor i mindre grad fokusere på atferd som vurderes som ugunstig.

Formål med bildemateriale sammenfattes slik:

1. Å hjelpe familien til å velge et for barnet optimalt kosthold
2. Å bevisstgjøre foreldre om at barnets matvaner kan legge grunnlag for og påvirker barnets helse gjennom resten av livet
3. Å hjelpe familien til å tilpasse måltider slik at barnet får mulighet til å utvikle ferdigheter knyttet til å spise selv samt til å venne seg til nye smaker

Følgende kostfaktorer er spesielt vektlagt:

a) Betydelig reduksjon av inntak av sukker gjennom drikke
b) Økt inntak av grønnsaker (spesielt) og frukt
c) Begrensning av inntak av sukkerholdig mat
d) Økt andel fullkornsprodukter i kostholdet
e) Sikre tilstrekkelig inntak av vitamin D
f) Fremme bruk av fisk

Bruken av bildemateriale

I samtalen relateres bildemateriale til de nevnte kostfaktorene, a-f, og til familiens matvaner. Dersom samtalen kommer inn på endring i forhold til matvaner, presiseres at endringer kan være bra for hele familiens kosthold. Helsesøster oppfordres til å spørre om lov til å informere. I introduksjon til samtalen skal helsesøster informere om hva hun kan bidra med. Det er viktig at helsesøster viser interesse og nysgjerrighet.

Helsesøsters samtale har utgangspunkt i pasientsentrert samtale basert på Motivational Interviewing (MI), «motiverende samtale» på norsk (Rollnick, Miller & Butler, 2009). Samtalen legger til rette for samarbeid om et felles prosjekt som er kostholdet tilpasset barnet i den enkelte familie. Helsesøster inviterer ved hjelp av samtaleverktøy forelder til å fokusere på et bestemt tema, hvoretter hun tar et steg tilbake. Forelder hjelpes herved til å se på temaet som meningsfylt og verdt å tenke nærmere på, selv om det først kanskje ble tatt for gitt (Barth, Børtveit & Prescott, 2013).

Helsesøster disponerer flippoverperm for å presentere bildemateriale for foreldre hver gang. Bildematerialet er organisert i standardiserte temaområder for hver av de tre konsultasjonene. Heretter følges samtalen opp med fokus på 1-2 temaer dersom foreldrene ønsker det.

I hvert bilde et er lagt inn forslag til samtale om barnets kosthold i den enkelte familie.

Siste bilde er valgfritt å bruke til å kartlegge barnets måltidsrytme.

10 måneder: 1) Spise selv

Se på bilde: Stol /sitter selv / smekke / skje (liten) / kopp (to håndtak) /stødig tallerken

Fokuser spesielt på: Brødbiter

Samtale:

- ***Fortell om måltidene til barnet?***
- ***Ser barnet andre spise?***

Eventuelt: Kan jeg fortelle om utvikling av barnets spiseferdigheter / tilvenning til mat?

Spiseferdigheter:

- **Begynner å *holde kopp***
- **Holder mat med *pinsettgrep* (vise brødbiter på tallerkenen)**
- **Begynner å *spise med skje selv***
- **Sensorisk *utforsking av mat* (syn, lukt, smak og berøring), søler og griser**
- ***Biter, tygger* av maten, *slikke* seg rundt munnen**

Tilvenning til mat, og konsistensoverganger:

- **Fint oppskåret/hakket mat**
- **Mat med smuldrekonsistens (kavring og brød som ikke deiger seg i munnen)**
- **Begynner med avvenning fra bryst / flaske**

10 måneder: 2) Tallerkenmodellen

<u>Se på bilde</u>: Tallerkenmodellen viser *tre matvaregrupper* som bør være deler i familiens mat/barnemat
<u>Fokuser spesielt på</u>: Tre deler som bør inngå:

- **1) *karbohydrater* (potet, pasta, bulgur), 2) *grønnsaker* (& rotfrukter) og 3) *proteiner* (kjøtt, fisk, bønner, belgfrukter, egg)**
- **Dette er lettvint å tilpasse til barnet ut fra familiens måltider**

<u>Samtale</u>:

- **På hvilken måte passer *tallerkenmodellen* til ditt barns måltider?**
- **Hvilken type *fisk* kan inngå i barnets og familiens matretter?**
- ***Hvilken type D-vitamin* får barnet (D-vitamin dråper eller tran)**

<u>Eventuelt</u>: Kan jeg komme med noen praktiske tips? - Tilsett litt olje maten (raps-/olivenolje, 1 teskje pr. porsjon)
- Ikke salt
- Barnets mat er basert på de ingredienser og råvarer som familien spiser
- Velg gjerne nøkkelhull-merkede proteinkilder
- Dessert: frukt / bærpuré

10 måneder: 3) «5 om dagen»

<u>Se på bilde</u>: Illustrasjon på at både barn og voksne bør spise *minst <u>tre grønnsaker</u> og <u>to frukter</u>* pr. dag

<u>Fokuser spesielt på</u>:

- **Bra med økt fokus fra starten av på grønnsaker som er en grunnleggende del av kostholdet**
- **Grønnsaker har generelt *mindre søt smak enn frukt*.**
- ***Skjære opp i biter*, da spises mer**
- **Juice teller som frukt, (man bør ikke drikke mer enn *et glass* per dag grunnet høyt sukkerinnhold)**

<u>Samtale</u>:

- **Hvilke grønnsaker spises *i familien*?**
- **Hvilke grønnsaker får barnet?**
- **Hvilken grønnsak *liker barnet best*?**

10 måneder: 4) Brødvalg

<u>Se på bilde</u>: Gå fra venstre mot høyre / fra «sunnere» mot usunt

- **Starte å gi barnet brød som har smuldrekonsistens (kavring og brød som ikke deiger seg i munnen)**

<u>Samtale:</u>

- **Hva slags *brød* spiser familien?**
- ***Til hvilke måltider spises brød?***
- **Hva vet foreldrene om brød med ulikt fiberinnhold samt om brødskalaen og nøkkelhull?**
- **Om valget er brød med høyt fiberinnhold, bekreft at dette er det beste valget.**
- **Vis eventuelt nøkkelhull og *brødskala (bør være 3 – 4 felter)***

<u>Eventuelt</u>: Dersom familien velger fint brød / fint brød til barnet; spør om du kan fortelle om helsegevinster ved å bytte til grovere brød.

<u>Brød med høyt fiberinnhold:</u>
- Ved valg av fullkorn får man økt inntak av fiber, jern og B-vitaminer
- Mørk farge på brødet *kan* indikere økt fiberinnhold
- På pakken kan stå: fullkorn, sammalt, whole wheat, whole grain, fiber

10 måneder: 5) Påleggsvalg

<u>Se på bilde</u>: Gå fra venstre mot høyre / fra «sunnere» mot usunt i nedre høyre hjørne (presiser stor mengde kaviar/bedre å stryke ut!)

- **Påleggene i den stiplede boksen, nederst til høyre, er svært sukkerholdige (sjokoladepålegg og syltetøy) og bør unngås til hverdags.**
- **Myk margarin på brødskiva**
- **Bra med variasjon: Observere saltinnhold: f.eks. kaviar / hvitost**

<u>Samtale</u>:

- **Hvordan passer bildets eksempler til sunne alternativer som *påleggsvalg* i forhold til deres familie?**
- ***Hvilke andre alternativer* til pålegg kommer du (forelderen) eventuelt på?**
- **Er *nøkkelhullet* i fokus når du velger ulike pålegg?**
- **Er det aktuelt for deg å velge *fiskepålegg* (på boks)?**

<u>Eventuelt</u>: Spørre om lov å gjennomgå påleggene som eksempel på sunne pålegg

<u>Bildet illustrerer:</u> Fra venstre: kalkunpølse, leverpostei, kalkunfilet, egg, kaviar, makrell i tomat, magerost på tube, gul-/hvitost, banan, avokado. Ha gjerne litt frukt eller grønt på (= pynt) eller ved siden av brødskiven. Nederst til høyre svært sukkerholdige pålegg

10 måneder: 6) Inspirasjon til sunne smakstilsetninger i naturell yoghurt

<u>Se på bilde</u>:

- **Bildet viser *ideer til smakstilsetning* en selv kan ha i naturell yoghurt**
- ***Naturell yoghurt* kan også spises som den er**

<u>Samtale</u>:

- **Hvordan passer dette inn i kostholdet til ditt barn?**

10 måneder: 7) Yoghurt, sukkerinnhold

<u>Se på bilde</u>:

- **Illustrerende bilde av *menge sukker tilsatt i yoghurt***
- **Naturell yoghurt er ikke tilsatt sukker**

<u>Eventuelt</u>:

- **Er sukkerinnhold i smaksatt yoghurt en tanke som opptar deg?**

12 måneder: 1) Spise selv

<u>Se på bilde</u>: Dette bilde ble også vist ved 10 måneders konsultasjonen selv om barnet her er ca. 1 år.

<u>Samtale</u>:

- **Hvordan foregår barnets måltider?**
- **Hvilke måltider spiser barnet?**
- **I hvilken grad spiser barnet selv?**
- **Spiser barnet *sammen* med familien? *Ser barnet andre spise*?**

<u>Eventuelt</u>: Kan jeg fortelle om «barnets spiseferdigheter ved 1 år/tilvenning til mat/ konsistensoverganger»?:

- **Drikker fra kopp til alle måltider (Kopp overtar for bryst og flaske)**
- **Mestrer alt bedre å spise selv med skje (Gradvis tilvenning til mat med mer avansert konsistens fortsetter)**
- **Vurderer mat ut fra karakteristiske egenskaper og viser skepsis overfor ukjent mat (Begynnende skepsis til nye matvarer må motvirkes med bevisst introduksjon av ny mat og nye smaker)**

12 måneder: 2) Melketyper

<u>Se på bilde</u>:

- **Bildet brukes for å kartlegge hvilken *type melk* barnet og familien drikker. Spør ved behov om alternativer foreldrene kunne tenke seg.**
- **Fokuser på fargene og *nøkkelhullmerket.***
- **Husk å kartlegge hva foreldrene allerede vet.**
- **Hvis barnet drikker *smaksatt melk,* fokuser på nøkkelhullmerket.**

<u>Samtale</u>:

- **Drikker barnet ditt melk?**
- ***Hvilken melketype* drikker *barnet* ditt?**
- **Hvilken melketype drikker resten av *familien*?**
- ***Hvor mange glass/kopper/flasker* melk drikker barnet per dag?**
- **Kjenner du til *nøkkelhullmerket*?**
- ***Er nøkkelhullet styrende* for melketype du velger for deg og barnet di**

12 måneder: 3) En porsjon grønnsak / frukt

<u>Se på bilde</u>:

- **Bilde viser mengde frukt/grønnsak i barnets hånd = «en porsjon»**
- **Samtidig viktig å presisere konsistens og størrelse på en drue. Den må deles før man gir til en ett-åring.**

<u>Samtale</u>:

- **En porsjon grønnsaker / frukt er det et *barn får plass til i hånden sin*. (Dette gjelder ikke tørket frukt, som krymper under tørkingen).**
- **Hvordan vurderer du denne mengden i forhold til hva barnet ditt spiser?**

12 måneder: 4) Grøt & frokostblanding

<u>Se på bilde</u>:

- **Til venstre er tre sunne varianter**
- **Til høyre er en mindre sunn variant av frokostblanding**

<u>Samtale</u>:

- ***Lager du grøt* til barnet?**
- ***Spiser familien/barnet frokostblanding?***
- ***Hvilken type frokostblanding/grøt?***
- **Se du etter *nøkkelhull (dog er ikke alle sunne merket)* eller *sunne varianter?***
- **Ordene fullkorn, whole wheat, whole grain, fiber - i innholdsdeklarasjon kan indikere høyt fiberinnhold**

12 måneder: 5) Grøt, smaksette

<u>Se på bilde</u>:

- **Grøt er stort sett et sunt måltid med høyt fiberinnhold (her kan brukes havre, bygg, hirse, bønner, grov ris o.s.v.)**
- **Vær oppmerksom på at det også kan være kilde til mye sukker**
- **Spesielt om barnet selv sukrer grøten**
- **Hjemmelaget syltetøy – «av og til» (ca. 2 dl sukker pr. kilo bær er passe)**

<u>Samtale</u>:

- **På hovedbildet sees fra venstre: yoghurt, eple (revet). Jordbær, rosiner, bringebær, blåbær/solbær, banan (most); *Hva tenker du om slike eksempel på alternativer til sukker*?**
- **Øverst til *høyre er sukkerskål og grøtporsjon* med sukker på; Hva tenker du om dette i forhold til barnets og familiens kosthold?**

12 måneder: 6) Drikke, sukkerinnhold

<u>Se på bilde</u>: fra vann til usunnere varianter

<u>Samtale</u>:

- **I hvilke situasjoner har barnet ditt eventuelt fått sukkerholdig drikke?**
- **Hvordan håndterer du det når ditt barn får sukkerholdig drikke?**

<u>Eventuelt</u>: Be om lov å gjennomgå de ulike variantene på bilde:

- **Fra venstre: vann (obs. uten sukker tilsatt), rød saft, gul saft, sjokolademelk, jordbærmelk, eplejuice, CapriSun juice, sjokolademelk, fruktjuice, leskedrikk (brus), sjokolademelk.**
- **Be om tillatelse til å fortelle om sukker og tannhygiene, og hvorfor det er viktig også for tennene som kommer etter melketenner, overvekt.**
- **Vær forsiktig med slik «negativ kommunikasjon» (med fokus på farer)**
- **Fokuser i stedet på «oppmuntrende kommunikasjon»**
- **Oppmuntre til egenrefleksjon.**

15 – 18 måneder: 1) Måltid

<u>Se på bilde</u>: Barnet har videreutviklet ferdigheter som behøves for å spise selv

- **Slutter gradvis å søle ved bordet**

<u>Samtale</u>:

- **Hvordan foregår barnets måltider?**
- **I hvilken grad spiser barnet selv?**
- **Spiser barnet *sammen* med familien? *Ser barnet andre spise*?**

<u>Eventuelt</u>: Spør om dere kan samtale om tilvenning til mat og konsitensoverganger

<u>Tilvenning til mat, og konsistensoverganger:</u>

- **Spiser etter hvert samme mat som resten av familien (unntak trevlet kjøtt og lignende som krever avansert tygging)**
- **Skepsis til ny mat motvirkes av gode rollemodeller**

15 – 18 måneder: 2) Rollemodell

<u>Se på bilde</u>: Dette bildet brukes til å samtale om hvordan man som forelder er rollemodell for barnet.

<u>Samtale</u>:

- **Hvordan oppfatter du deg som *rollemodell* ved måltider?**
- **Hvordan tror du familiens matvaner påvirker barnet?**

15 – 18 måneder: 3) Grønnsaker - inspirasjon

Se på bilde: **la foreldre vise og fortelle hvilke grønnsaker som de bruker til vanlig eller**

- **Gjennomgå grønnsakene, fra venstre: brokkoli, avokado, maiskorn, gulrot, okra (ladyfinger), urter, kålrabi, gresskar, sukkererter, agurk, yams (søtpotet), blomkål, paprika, erter, løk, pastinakk, yams (søtpotet), tomat**

Samtale:

- ***Vær nysgjerrig / skap interesse***
- **Utforsk hva familien vet om *helse og grønnsaker*, gi eventuelt informasjon**
- ***Hvilke grønnsaker* bruker / liker dere i familien?**
- ***Hvordan tilberedes grønnsakene*?**
- **Hvilke grønnsaker *liker barnet*?**
- **Er det *grønnsaker barnet ikke har smakt* enda?**
- **Presiser at alle grønnsaker er bra**
- **Utforsk eventuelle *hindringe***

15 – 18 måneder: 4) Frukt – inspirasjon

<u>Se på bilde</u>: la foreldre vise og fortelle hvilken frukt som de bruker til vanlig eller

- **Eller gjennomgå frukten fra venstre: pære, banan, kirsebær, druer, druer, eple, plomme, blåbær, eple, melon, melon, sharon, bringebær, kiwi, papaya, juice (ett glass), aprikos, jordbær**

<u>Samtale</u>:

- ***Vær nysgjerrig* / skap interesse**
- **Utforsk hva familien vet om frukt / bær og helse. Fortell eventuelt mer**
- **Spør *hvor mye frukt* barnet spiser per dag og gi informasjon om sukkerinnhold i frukt**
- **Minne på at *juice-inntak må begrenses* (grunnet høyt sukkerinnhold)**
- **Hvilken frukt *liker barnet*?**
- ***Hvilken frukt* bruker familien?**
- **Er det frukt *barnet ikke har smakt* enda?**
- **Utforsk eventuelle *hindringer***

15 – 18 måneder: 5) Pasta, fullkorn

<u>Se på bilde</u>:

- **Gå fra venstre til høyre: Til venstre tre sunnere fullkorns-alternativer.**
- **I høyre hjørne er vanlig hvit pasta**

<u>Samtale</u>:

- **Noen *fullkornvarianter vil være nøkkelhullmerket***
- **Ofte kan man gå etter fargen for å finne fullkornvarianter**
- **Om familien velger fullkornvarianter, bekreft da at dette er beste alternativet**

<u>Eventuelt</u>: Spør om du kan fortelle hvorfor det er gunstig å velge fullkorn

- **Ved valg av fullkorn får man økt inntak av fiber, jern og B-vitaminer**

15 - 18 måneder: 6) Ris, fullkorn

<u>Se på bilde</u>:

- **Til venstre er tre sunnere varianter; blandet rød og hvit ris, rød ris, brun basmati ris**
- **I høyre hjørne hvit, vanlig ris**

<u>Samtale</u>:

- **Om familien spiser *fullkorn-ris* eller *rød ris* kan man bekrefte at dette er det sunneste valget.**
- **Se etter nøkkelord for å finne sunne varianter: Fullkorn, whole grain, brun/brown ris, sort ris, rød/red ris, villris, natur-ris**
- **Mørke varianter er altså oftest de sunneste**

<u>Eventuelt</u>: Spør om du kan fortelle hvorfor det er gunstig å velge fullkorn

- **Ved valg av fullkorn får man økt inntak av fiber, jern og B-vitaminer**

15 – 18 måneder: 7) Melk & smaksatt melk

<u>Se på bilde</u>:

- **Nøkkelhull-merkede varianter (skummet-, ekstra lett melk), lettmelk versus smaksatt, søt melk**

<u>Samtale</u>:

- **Hva tenker du om de melketyper som er aktuelle hos dere?**

BRUKES EVENTUELT: Kartlegging over døgnet

- **Bilde kan brukes til å gjennomgå barnets måltidsrytme og eventuelt skrive inn hvilken mat som inntas på hvilket tidspunkt.**

Spørreskjema om kosthold blant barn i 10 måneders alder

2015 - 2017

Doktorgradsstudie ved Bettina Holmberg Fagerlund

HØGSKOLEN I OSLO
OG AKERSHUS

Les dette før du fyller ut spørreskjemaet

Denne undersøkelsen tar sikte på å kartlegge kostholdet til barnet ditt som nå er ca. 10 måneder gammelt.

Vi spør om kostholdet slik det vanligvis er. Vi er klar over at kostholdet varierer fra dag til dag. Prøv derfor så godt du kan å angi et «gjennomsnitt» av barnets kosthold. Du kan ha de siste 14 dagene i tankene når du fyller ut skjemaet. Om frekvensene eller mengdene i spørreskjemaet ikke passer akkurat med det ditt barn spiser, angi det alternativet som ligner mest.

Det er vanlig at barn i denne alderen søler og ikke spiser / drikker hele porsjonen de får servert. Ved spørsmål om hvor mye barnet ditt spiser, prøv derfor så godt du kan å angi hva det faktisk har spist. Hvis du ikke kan gi et helt nøyaktig svar på spørsmålene, så fyll inn etter beste skjønn.

Til spørreskjemaet følger det et bildehefte som kan være til hjelp ved bestemmelsen av den mengden mat barnet vanligvis spiser pr. gang.

Eksempler på utfylling av enkelte spørsmål finner du bakerst i spørreskjemaet.

Vi har brukt følgende forkortelser i spørreskjemaet:

ts betyr teskje

bs betyr barneskje

ss betyr spiseskje

Dersom du har tvillinger eller trillinger, skal du svare for det barnet som ble født først.

Mor, far eller andre foresatte til barnet kan fylle ut skjemaet.

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Kosthold blant barn i 10 måneders alder

Kryss av for "Ja" i ruten under dersom du samtykker i å delta i undersøkelsen. Dersom du ikke ønsker å delta og vil reservere deg mot å bli oppringt samt å bli purret på, krysser du av for "Nei" og returnerer skjemaet.

☐ Ja

☐ Nei

Ved utfylling er det viktig at du går frem slik:

* Sett kryss i boksene. Slik: ☒ Ikke slik: ☒
* Ved rettelser kan du markere tydelig at det er feil, slik: ■
* I de åpne feltene skriver du inn tydelig tekst
* Der det spørres etter tall, skriver du disse slik: 1 2 3 4 5 6 7 8 9
* Skjemaet må ikke brettes
* Det utfylte skjemaet vil bli lest av en maskin. **Bruk blå eller sort kulepenn**.

Fylles ut på helsestasjonen eller fra helsekortet

Dato for måling av vekt/lengde (6 mnd): ☐☐ dag ☐☐ mnd ☐☐☐☐ år

Barnets vekt (6 mnd): ☐☐☐☐☐ gram **Barnets lengde (6 mnd):** ☐☐☐ cm

Fødselsdato: ☐☐ dag ☐☐ mnd ☐☐☐☐ år

Fødselsvekt: ☐☐☐☐ gram **Lengde ved fødsel:** ☐☐ cm

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BAKGRUNNSSPØRSMÅL

1. Dato for utfylling av skjemaet

Fyll inn dag, måned og år i rutene

☐☐ ☐☐ ☐☐☐☐

dag mnd år

2. Hva er barnets kjønn?

Sett ett kryss

☐ Jente

☐ Gutt

3. Hvem fyller ut skjemaet?

Sett ett kryss

☐ Barnets mor

☐ Barnets far

☐ Både mor og far

☐ Annen person

SPØRSMÅL OM MORSMELK

4. Får barnet morsmelk nå?

Sett ett kryss

☐ Ja ⇨ *Gå til spørsmål 5 og deretter til spørsmål 8*

☐ Nei, men barnet har fått morsmelk tidligere ⇨ *Gå til spørsmål 6*

☐ Nei, barnet har aldri fått morsmelk ⇨ *Gå til spørsmål 7*

5. Hvor mange ganger i døgnet får barnet vanligvis morsmelk nå?

Regn også med de gangene barnet bare får morsmelk til trøst eller kos, dag- og nattetid.
Sett ett kryss

☐ 1 gang

☐ 2-3 ganger

☐ 4-5 ganger

☐ 6-7 ganger

☐ 8-9 ganger

☐ 10 ganger eller flere

6. Hvor gammelt var barnet da det sluttet å få morsmelk?

Sett ett kryss

Uker							Måneder										
1	2	3	4	5	6	7	2	3	4	5	6	7	8	9	10	11	12
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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7. Hva var viktigste og nest viktigste grunn til at mor ikke ammet barnet eller har sluttet å amme det?

Sett ett kryss for viktigste grunn og ett kryss for nest viktigste grunn

	Viktigste grunn	Nest viktigste grunn
Barnet ville ikke	☐	☐
Barnet biter/har fått tenner	☐	☐
Sugeproblemer	☐	☐
Barnet sykt/for tidlig født	☐	☐
Kolikk/urolig barn	☐	☐
For lite melk	☐	☐
Mor begynte å arbeide/å studere	☐	☐
Mor syk/medisinbruk	☐	☐
Bekymring/stress/sliten	☐	☐
Brystbetennelse	☐	☐
Tilstoppede melkeganger	☐	☐
Såre brystknopper	☐	☐
Brystoperert	☐	☐
Ble rådet til å slutte	☐	☐
Ingen spesielle problemer, men ønsket ikke å amme lenger	☐	☐
Andre grunner	☐	☐

Dersom mor ble rådet til å slutte å amme, hvem var det som rådet henne til det?
(F.eks. helsepersonell, familie, venner)

SPØRSMÅL OM MORSMELKERSTATNING/MELK

8. Hvor gammelt var barnet da det begynte med morsmelkerstatning/kumelk i tillegg til eller istedenfor morsmelk?

Sett ett kryss for hver matvare

		Barnets alder (måneder)									
	Ikke fått	0-3	4	5	6	7	8	9	10	11	12
Morsmelkerstatning som drikke	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Morsmelkerstatning til grøt o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kumelk som drikke	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kumelk til grøt o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kumelk i annen matlaging	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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9. Hvor ofte og hvor mye melk/morsmelkerstatning pleier barnet å drikke nå?

*For hver melketype settes ett kryss for **hvor ofte**, enten ganger pr. uke eller ganger pr. døgn. I tillegg settes ett kryss for **hvor mye** pr. gang. For mengdeangivelse se på bilde 1 og 2 i bildeboken. 100 ml = 1 dl. Morsmelk regnes ikke med her.*

	Hvor ofte?								**Hvor mye?**			
	Ganger pr. uke		***eller***	**Ganger pr. døgn**					**Mengde (ml) pr. gang**			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	60 A	120 B	180 C	240 D
NAN 1 morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN 2 tilskuddsblanding	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN H.A. 1 morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Collett morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hipp morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Småfolk 1 morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Småfolk 2 tilskuddsblanding	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Holle morsmelkerstatning 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Holle tilskuddsblanding 2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Helmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lettmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ekstra lettmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Skummetmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Biola, Cultura o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokolademelk, O'boy o.l. med helmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokolademelk, O'boy o.l. med lett-, ekstra lett- eller skummetmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Drikkeyoghurt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annen melk/melkeerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

oppgi type:

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SPØRSMÅL OM FAST FØDE

10. Hvor gammelt var barnet da det første gang fikk fast føde?

Med fast føde menes alle andre matvarer enn melk/vann/saft/juice/annen drikke og kosttilskudd. Fast føde inkluderer velling selv om denne er tyntflytende.
Sett ett kryss

Uker							Måneder										
1	2	3	4	5	6	7	2	3	4	5	6	7	8	9	10	11	12
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

11. Hvor gammelt var barnet da det fikk følgende matvarer for første gang?

Sett ett kryss for hver matvare

		Barnets alder (måneder)									
	Ikke fått	0-3	4	5	6	7	8	9	10	11	12
Mais-/ris-/hirsegrøt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Havre-/hvete-/bygg-/ kavringgrøt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Poteter	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grønnsaker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kjøtt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Fisk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brød	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Yoghurt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

SPØRSMÅL OM YOGHURT

12. Hvor ofte og hvor mye yoghurt pleier barnet å spise nå?

*For hver yoghurt-type settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** barnet vanligvis spiser pr. gang.*

	Hvor ofte?						Hvor mye?			
	Ganger pr. uke		*eller*	Ganger pr. dag			Mengde (beger) pr. gang			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3 el. flere	¼	½	¾	1
Fruktyoghurt (eks. Sprett)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Liten fruktyoghurt m/müsli	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Go'morgen yoghurt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett fruktyoghurt (eks. Yoplait)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Yoghurt naturell	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Biola yoghurt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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SPØRSMÅL OM GRØT, KORNBLANDING, GRYN O.L.

13. Hvor ofte og hvor mye grøt, kornblanding, gryn o.l. pleier barnet å spise nå?

*For hver grøttype, kornblanding, gryn o.l. settes ett kryss for **hvor ofte**, enten ganger pr. uke eller ganger pr. dag. I tillegg settes ett kryss for **hvor mye** barnet vanligvis spiser pr. gang. For mengdeangivelse se på bilde 3 og 4 i bildeboken.*

	Hvor ofte?							**Hvor mye?**						
		Ganger pr. uke		***eller***	**Ganger pr. dag**			**Mengde (dl) pr. gang**						
Hjemmelaget grøt av:	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere		½ A	1 B	1½ C	2 D	2½ E	3 F
Havregryn	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Grovt/sammalt mel	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Fint/hvitt mel/kavring/ semule/ris/mais	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Hirse	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Industrifremstilt grøt/velling:									A	B	C	D	E	F
Nestlé grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Nestlé velling	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Småfolk grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Hipp grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Holle grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Kornblanding, gryn o.l. med melk:									A	B	C	D		
Havregryn, usøtede kornblandinger	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		
Cornflakes, puffet ris, puffet havre, hvetenøtter	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		
Søte kornblandinger (Sol Frokost o.l.)	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		
Honni korn, Frosties, Choko-frokost o.l.	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		

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14. Hvor ofte og hvor mye av de ulike matvarene nevnt nedenfor tilsettes på grøt, gryn, kornblanding o.l.?

*For hver matvare settes ett kryss for **hvor ofte**, enten ganger pr. uke eller ganger pr. dag. I tillegg settes ett kryss for **hvor mye** barnet vanligvis spiser pr. gang.*

	Hvor ofte?							**Hvor mye?**			
		Ganger pr. uke		***eller***	**Ganger pr. dag**			**Mengde pr. gang**			
Tilsatt på grøt, gryn, kornblanding o.l.:	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere	1 ts	2 ts	3 ts	4 ts
Syltetøy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett syltetøy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sukker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Honning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nypeekstrakt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

15. Dersom barnet får grøt/velling nå, hva slags væske tilsettes vanligvis grøten/vellingen ved tilberedning/koking?

Hvis det vanligvis brukes mer enn én type væske, settes flere kryss

- ☐ Bruker ikke grøt/velling
- ☐ Vann
- ☐ Morsmelk
- ☐ Morsmelkerstatning
- ☐ Helmelk
- ☐ Lettmelk
- ☐ Ekstra lettmelk
- ☐ Skummetmelk
- ☐ Annet

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SPØRSMÅL OM BRØD OG PÅLEGG

16. Hvilken type brød og hvor mye brød pleier barnet å spise nå?
For hver brødtype settes ett kryss for antall skiver pr. dag (½ rundstykke = 1 skive)

	Antall skiver pr. dag									
	½	1	2	3	4	5	6	7	8	9 el. flere
Fint brød (loff, fine rundstykker o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mellomgrovt brød (Kneipp, helkorn o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grovt brød (minst 50% sammalt mel)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knekkebrød, kavring o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Sum skiver pr. dag = ☐☐ **x 7 =** ☐☐☐ **= Sum pr. uke.** Summen brukes i spørsmål 20.

17. Skjæres skorpene på brødskivene til barnet vanligvis bort?
Sett ett kryss

- ☐ Bruker ikke brødskiver
- ☐ Ja
- ☐ Nei

18. Hva smører du vanligvis på brødet til barnet?
Sett ett kryss

- ☐ Bruker ikke smør/margarin på brødet ⇨ *Gå til spørsmål 20*
- ☐ Smør (meierismør)
- ☐ Bremykt
- ☐ Brelett
- ☐ Melange
- ☐ Soft Original, Soft Ekstra
- ☐ Vita
- ☐ Lett margarin (Soft Lett, Vita Lett)
- ☐ Annen margarin

19. Hvor mye smører du vanligvis på brødet til barnet?
Se mengdeangivelse på bilde 5 i bildeboken.
Sett ett kryss

- ☐ Skrapet lag (Bilde A)
- ☐ Middels lag (Bilde B)
- ☐ Godt dekket lag (Bilde C)
- ☐ Tykt lag (Bilde D)

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20. Hvilke påleggstyper pleier barnet å spise nå?

For hver påleggstype settes ett kryss for antall brødskiver i løpet av en uke.
Ta utgangspunkt i sum brødskiver pr. uke fra spørsmål 16.

		På antall skiver pr. uke							
	Aldri/sjeldnere enn hver uke	½ -1	2-3	4-5	6-7	8-14	15-21	22-28	29 el. flere
Brunost/prim	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sprett prim	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett/mager brunost/prim	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hvitost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett/mager hvitost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Smøreost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett/mager smøreost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Leverpostei	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mager leverpostei	☐	☐	☐	☐	☐	☐	☐	☐	☐
Servelat	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kokt skinke, lettservelat, kalkunpålegg o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Salami, fårepølse o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Svolværpostei, Lofotpostei	☐	☐	☐	☐	☐	☐	☐	☐	☐
Makrell i tomat o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kaviar	☐	☐	☐	☐	☐	☐	☐	☐	☐
Egg (kokt, stekt, eggerøre)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Syltetøy, marmelade	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett syltetøy, frysetøy	☐	☐	☐	☐	☐	☐	☐	☐	☐
Honning	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hapå	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokolade-, nøttepålegg o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokoladepålegg med mindre sukker	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annet søtt pålegg (Banos, Sunda o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Peanøttsmør	☐	☐	☐	☐	☐	☐	☐	☐	☐
Salat med majones	☐	☐	☐	☐	☐	☐	☐	☐	☐
Frukt/bær som pålegg (banan o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grønnsaker som pålegg	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annet pålegg	☐	☐	☐	☐	☐	☐	☐	☐	☐

oppgi type: ☐

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SPØRSMÅL OM MIDDAGSMAT (UTENOM INDUSTRIFREMSTILT BARNEMAT)

21. Hvor ofte og hvor mye middagsmat pleier barnet å spise nå?

*For hver type middagsmat settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang. Industrifremstilt barnemat regnes ikke med her.*

	Hvor ofte?							Hvor mye?
		Ganger pr. mnd			*eller*	Ganger pr. uke		Mengde pr. gang
Kjøtt og kjøttretter: Grill-, wiener-, kjøttpølser o.l. av storfe- og svinekjøtt	Aldri/sjeldnere enn hver måned ☐	1 ☐	2 ☐	3 ☐	1 ☐	2 ☐	3 el. flere ☐	bilde 7 A ☐ B ☐ C ☐ D ☐
Grill-, wiener-, kjøttpølser o.l. av kylling/kalkun	☐	☐	☐	☐	☐	☐	☐	bilde 7 A ☐ B ☐ C ☐ D ☐
Magre grill-, wiener-, kjøttpølser o.l.	☐	☐	☐	☐	☐	☐	☐	bilde 7 A ☐ B ☐ C ☐ D ☐
Kjøttkaker, medisterkaker, kjøttpudding	☐	☐	☐	☐	☐	☐	☐	stk./skive ½ ☐ 1 ☐ 1½ ☐ 2 ☐
Hamburgere, karbonader o.l.	☐	☐	☐	☐	☐	☐	☐	stk. ½ ☐ 1 ☐ 1½ ☐ 2 ☐
Kjøttsaus og andre kjøttdeigretter	☐	☐	☐	☐	☐	☐	☐	bilde 6 A ☐ B ☐ C ☐ D ☐
Kjøtt av okse, lam, svin o.l.	☐	☐	☐	☐	☐	☐	☐	bilde 6 A ☐ B ☐ C ☐ D ☐
Kylling, høne, kalkun	☐	☐	☐	☐	☐	☐	☐	bilde 6 A ☐ B ☐ C ☐ D ☐
Lapskaus, gryte med kjøtt/grønnsaker/poteter	☐	☐	☐	☐	☐	☐	☐	bilde 6 A ☐ B ☐ C ☐ D ☐
Fisk og fiskemat: Fiskeboller, fiskepudding	☐	☐	☐	☐	☐	☐	☐	stk./skive ½ ☐ 1 ☐ 2 ☐ 3 ☐
Fiskegrateng	☐	☐	☐	☐	☐	☐	☐	bilde 10 A ☐ B ☐ C ☐ D ☐
Fiskekaker	☐	☐	☐	☐	☐	☐	☐	stk. ½ ☐ 1 ☐ 2 ☐ 3 ☐
Fiskepinner o.l.	☐	☐	☐	☐	☐	☐	☐	stk. 1 ☐ 2 ☐ 3 ☐ 4 ☐
Torsk, sei, annen hvit fisk	☐	☐	☐	☐	☐	☐	☐	bilde 8 A ☐ B ☐ C ☐ D ☐
Ørret, laks, makrell, sild	☐	☐	☐	☐	☐	☐	☐	bilde 8 A ☐ B ☐ C ☐ D ☐
Annen middagsmat: Tomatsuppe, annen suppe	☐	☐	☐	☐	☐	☐	☐	bilde 9 A ☐ B ☐ C ☐ D ☐
Pannekaker	☐	☐	☐	☐	☐	☐	☐	stk. ½ ☐ 1 ☐ 2 ☐ 3 ☐
Risgrøt	☐	☐	☐	☐	☐	☐	☐	bilde 11 A ☐ B ☐ C ☐ D ☐
Pizza (1 bit=1/8 Pizza Grandiosa)	☐	☐	☐	☐	☐	☐	☐	bit ½ ☐ 1 ☐ 1½ ☐ 2 ☐
Annen middagsmat	☐	☐	☐	☐	☐	☐	☐	

oppgi type:

13013

22. Hvor ofte og hvor mye poteter, ris, pasta, grønnsaker og saus pleier barnet å spise nå?

*For hver matvaretype settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang. Her regnes både det som spises til middag og eventuelt til andre måltider i løpet av dagen. Industrifremstilt barnemat på glass regnes ikke med.*

	Hvor ofte?						Hvor mye?				
		Ganger pr. uke		*eller*	Ganger pr. dag		Mengde pr. gang				
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3 el. flere					
Poteter, ris, pasta: Poteter, kokt/most	☐	☐	☐	☐	☐	☐	stk.	½ ☐	1 ☐	1½ ☐	2 ☐
Potetmos (av pulver)	☐	☐	☐	☐	☐	☐	bilde 10	A ☐	B ☐	C ☐	D ☐
Pommes frites, stekte poteter	☐	☐	☐	☐	☐	☐	bilde 11	A ☐	B ☐	C ☐	D ☐
Ris	☐	☐	☐	☐	☐	☐	bilde 11	A ☐	B ☐	C ☐	D ☐
Pasta (spagetti, makaroni o.l.)	☐	☐	☐	☐	☐	☐	bilde 11	A ☐	B ☐	C ☐	D ☐
Hamburger-, pølsebrød, lomper	☐	☐	☐	☐	☐	☐	stk.	½ ☐	1 ☐	1½ ☐	2 ☐
Saus og annet: Brun saus, hvit saus	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Smeltet margarin, smør	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Ketchup	☐	☐	☐	☐	☐	☐	ss	½ ☐	1 ☐	1½ ☐	2 ☐
Rømme	☐	☐	☐	☐	☐	☐	ss	½ ☐	1 ☐	1½ ☐	2 ☐
Grønnsaker (rå, kokte, moset): Gulrot	☐	☐	☐	☐	☐	☐	bilde 12	A ☐	B ☐	C ☐	D ☐
Kålrot	☐	☐	☐	☐	☐	☐	bilde 12	A ☐	B ☐	C ☐	D ☐
Blomkål, brokkoli	☐	☐	☐	☐	☐	☐	bilde 12	A ☐	B ☐	C ☐	D ☐
Frossen grønnsaksblanding	☐	☐	☐	☐	☐	☐	bilde 13	A ☐	B ☐	C ☐	D ☐
Råkost	☐	☐	☐	☐	☐	☐	bilde 14	A ☐	B ☐	C ☐	D ☐
Agurk	☐	☐	☐	☐	☐	☐	skiver	2 ☐	4 ☐	6 ☐	8 ☐
Tomat	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	¾ ☐	1 ☐
Erter	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Mais	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Paprika	☐	☐	☐	☐	☐	☐	ringer	½ ☐	1 ☐	2 ☐	3 ☐
Andre grønnsaker	☐	☐	☐	☐	☐	☐					

oppgi type:

23. Hvilken type fett bruker du vanligvis til matlaging (sauser, steking o.l.)?
Her kan du sette flere kryss

- ☐ Smør (meierismør)
- ☐ Bremykt
- ☐ Melange
- ☐ Soft Original, Soft Ekstra
- ☐ Vita
- ☐ Flytende margarin på flaske (Vita, Melange, Bremykt o.l.)
- ☐ Annen margarin
- ☐ Olje (oliven-, soya-, mais-, rapsolje o.l.)

SPØRSMÅL OM INDUSTRIFREMSTILT BARNEMAT

24. Dersom barnet får industrifremstilt barnemat, hvor ofte og hvor mye pleier det å spise?
*For hver type industrifremstilt barnemat settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang.*
For mengdeangivelser se på bilde 15 og 16 i bildeboken.

	Hvor ofte?						**Hvor mye?**			
		Ganger pr. uke		***eller***	**Ganger pr. dag**		**Mengde (glass) pr. gang**			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3 el. flere	¼ A	½ B	¾ C	1 D
Grønnsaker (uten kjøtt og fisk)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kjøtt/kylling/kalkun og grønnsaker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Pasta/ris med kjøtt og grønnsaker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Fisk og grønnsaker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Dersom barnet får andre typer barnemat, oppgi type:

13013

SPØRSMÅL OM IS, KAKER, KJEKS, GODTERIER O.L.

25. Hvor ofte og hvor mye is, kaker, kjeks, godterier o.l. pleier barnet å spise nå?

*For hver matvaretype settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang*

	Hvor ofte?							Hvor mye?				
	Ganger pr. mnd		*eller*			Ganger pr. uke		Mengde pr. gang				
	Aldri/sjeldnere enn hver mnd	1-3	1	2	3	4	5 el. flere					
Is - fløteis (1 pinne = bilde 17 C)	☐	☐	☐	☐	☐	☐	☐	bilde 17	A ☐	B ☐	C ☐	D ☐
Is - saftis	☐	☐	☐	☐	☐	☐	☐	pinne	½ ☐	1 ☐		
Puddinger, gelé, fromasj	☐	☐	☐	☐	☐	☐	☐	bilde 17	A ☐	B ☐	C ☐	D ☐
Boller, skolebrød o.l.	☐	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	1 ☐	2 ☐
Kaker (sjokoladekake, formkake o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	1 ☐	2 ☐
Vafler	☐	☐	☐	☐	☐	☐	☐	plate	¼ ☐	½ ☐	1 ☐	1½ ☐
Barnekjeks (Hipp, Holle)	☐	☐	☐	☐	☐	☐	☐	stk.	1 ☐	2 ☐	3 ☐	4 ☐
Andre barnekjeks (Tom & Jerry, Mumie o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	½ ☐	1 ☐	2 ☐	3 ☐
Søte kjeks (Mariekjeks, fylte kjeks o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	½ ☐	1 ☐	2 ☐	3 ☐
Smørbrødkjeks (Kornmo, havrekjeks o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	½ ☐	1 ☐	2 ☐	3 ☐
Sjokolade	☐	☐	☐	☐	☐	☐	☐	bit	2 ☐	4 ☐	6 ☐	8 ☐
Smågodt, seigmenn, drops o.l.	☐	☐	☐	☐	☐	☐	☐	stk.	2 ☐	4 ☐	6 ☐	8 ☐
Snacks (potetgull, popcorn, ostepop o.l.)	☐	☐	☐	☐	☐	☐	☐	kopp	½ ☐	1 ☐	1½ ☐	2 ☐

Dersom barnet får andre typer is, kaker, kjeks, godterier o.l., oppgi type:

13013

SPØRSMÅL OM FRUKT OG BÆR

26. Hvor ofte og hvor mye frukt og bær pleier barnet å spise nå?

*For hver type frukt/bær settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang. Frukt og bær som pålegg til brødskiver og fra industrifremstilt barnemat regnes ikke med her.*

	Hvor ofte?						Hvor mye?				
	Ganger pr. uke			*eller*	Ganger pr. dag		Mengde pr. gang				
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3 el. flere		A	B	C	D
Hjemmelaget mos av frukt og/eller bær	☐	☐	☐	☐	☐	☐	bilde 16	☐	☐	☐	☐
Bær (friske, frosne)	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Appelsin, klementin o.l.	☐	☐	☐	☐	☐	☐	båter	2 ☐	4 ☐	6 ☐	8 ☐
Banan	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	¾ ☐	1 ☐
Eple, pære	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	¾ ☐	1 ☐
Druer	☐	☐	☐	☐	☐	☐	stk.	3 ☐	6 ☐	9 ☐	12 ☐
Annen frukt (kiwi, melonskive o.l.)	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	¾ ☐	1 ☐
Hermetisk frukt	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Rosiner (1 eske = 45 g)	☐	☐	☐	☐	☐	☐	eske	¼ ☐	½ ☐	¾ ☐	1 ☐
Annen tørket frukt (aprikos, svisker o.l.)	☐	☐	☐	☐	☐	☐	stk.	½ ☐	1 ☐	1½ ☐	2 ☐

SPØRSMÅL OM VANN, SAFT, JUICE O.L.

27. Hvor ofte og hvor mye vann, saft, juice o.l. pleier barnet å drikke nå?

*For hver type drikke settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** barnet vanligvis drikker pr. gang. For mengdeangivelse se på bilde 1 og 2 i bildeboken.*

	Hvor ofte?								Hvor mye?			
	Ganger pr. uke			*eller*	Ganger pr. dag				Mengde pr. gang			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	A	B	C	D
Vann	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Barnedrikk (Hipp, Nestlé o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, sukret (Husholdningssaft o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, kunstig søtet (Fun light o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, sukret	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, kunstig søtet	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Juice	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nektar (eplenektar o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nypeekstrakt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

13013

SPØRSMÅL OM MÅLTIDER

28. Hvor ofte pleier barnet å spise følgende måltider i løpet av <u>én uke</u>?
For hver måltidstype settes ett kryss

	Aldri/sjeldnere enn hver uke	Ganger pr. uke: 1	2	3	4	5	6	Hver dag
Frokost	☐	☐	☐	☐	☐	☐	☐	☐
Formiddagsmat/lunsj	☐	☐	☐	☐	☐	☐	☐	☐
Ettermiddagsmat (måltid etter lunsj og før middag)	☐	☐	☐	☐	☐	☐	☐	☐
Middag	☐	☐	☐	☐	☐	☐	☐	☐
Kveldsmat	☐	☐	☐	☐	☐	☐	☐	☐
Andre måltider/mellommåltider	☐	☐	☐	☐	☐	☐	☐	☐

oppgi hva slags type måltid(-er):

29. Dersom barnet er i barnehage, hos dagmamma o.l., hvor ofte pleier barnet å spise følgende måltider på disse stedene i løpet av <u>én uke</u>?
For hver måltidstype settes ett kryss

	Aldri/sjeldnere enn hver uke	Ganger pr. uke: 1	2	3	4	5
Frokost	☐	☐	☐	☐	☐	☐
Formiddagsmat/lunsj	☐	☐	☐	☐	☐	☐
Ettermiddagsmat (måltid etter lunsj og før middag)	☐	☐	☐	☐	☐	☐
Middag	☐	☐	☐	☐	☐	☐
Andre måltider/mellommåltider	☐	☐	☐	☐	☐	☐

ANDRE SPØRSMÅL OM KOSTHOLDET

30. Er det noen matvarer det kunne være aktuelt å gi barnet, men som du unngår å gi fordi du er redd barnet kan reagere med allergi/intoleranse?
Sett ett kryss

☐ Ja

☐ Nei ⟹ *Gå til spørsmål 32*

31. Hvilke matvarer/ingredienser i matvarer unngår du å gi barnet?
Her kan du sette flere kryss

☐ Glutenholdige mel/korn (hvete, havre, rug og bygg)

☐ Vanlig kumelk

☐ Morsmelkerstatning

☐ Appelsin/appelsinjuice/annen sitrusfrukt

☐ Fisk/skalldyr

☐ Nøtter/nøtteprodukter (peanøttsmør o.l.)

☐ Belgfrukter (erter, bønner o.l.)

☐ Egg

☐ Soya

☐ Matvarer med tilsetningsstoffer

☐ Annet

32. Har barnet problemer i forhold til spising/mat?
Her kan du sette flere kryss

☐ Nei, har ikke noen problemer

☐ Ja, dårlig matlyst/småspist

☐ Ja, liker få matvarer

☐ Ja, vanskelig med tilvenning til familiens kosthold

☐ Ja, allergi/intoleranse mot enkelte matvarer

☐ Ja, andre problemer

oppgi hvilke:

13013

SPØRSMÅL OM KOSTTILSKUDD

33. Får barnet vitamin D-tilskudd (som vitamin D-dråper/tran) eller annet kosttilskudd nå?
Sett ett kryss

☐ Ja

☐ Nei, men barnet har fått vitamin D-tilskudd/kosttilskudd tidligere ⇨ *Gå til spørsmål 35*

☐ Nei, barnet har aldri fått vitamin D-tilskudd/kosttilskudd ⇨ *Gå til spørsmål 36*

34. Hvor ofte og hvor mye vitamin D-tilskudd eller annet kosttilskudd pleier barnet å få nå?
*For hver type kosttilskudd settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang.*

Det er satt opp to mengder for en teskje: 3 ml (liten teskje) og 5 ml (stor teskje).

	Hvor ofte?					**Hvor mye?**					
		Ganger pr. uke		***eller***	**Ganger pr. dag**	**Mengde pr. gang**					
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2 el. flere	1 tablett	2 tabletter				
Multivitamin-tabletter for barn med A og D vitamin	☐	☐	☐	☐	☐	☐	☐				
Multivitamin-tabletter for barn uten A og D vitamin	☐	☐	☐	☐	☐	☐	☐				
Kalktabletter	☐	☐	☐	☐	☐	☐	☐				
Vitamin C	☐	☐	☐	☐	☐	☐	☐				
						3 dråper	5 dråper				
Vitamin D-dråper	☐	☐	☐	☐	☐	☐	☐				
						1 ts 3 ml	1 ts 5 ml	1 bs 7 ml	1 ss 10 ml		
Tran	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Andre type fiskeoljer	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Flytende multivitaminer (Sana-sol, Biovit og Nycoplus multivitamin mikstur)	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						1 ts 3 ml	1 ts 5 ml	1 bs 7 ml	1 ss 10 ml	1 tablett	2 tabletter
Jern	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

oppgi type:

35. Hvilke av følgende kosttilskudd har barnet fått fra 6. levemåned og frem til nå?
*Sett kryss ved **alle** levemånedene barnet har fått kosttilskudd*

	Ikke fått	Levemåned 6	7	8	9	10	11	12
Multivitamin-tabletter for barn med A og D vitamin	☐	☐	☐	☐	☐	☐	☐	☐
Multivitamin-tabletter for barn uten A og D vitamin	☐	☐	☐	☐	☐	☐	☐	☐
Kalktabletter	☐	☐	☐	☐	☐	☐	☐	☐
Vitamin C	☐	☐	☐	☐	☐	☐	☐	☐
Vitamin D-dråper	☐	☐	☐	☐	☐	☐	☐	☐
Tran	☐	☐	☐	☐	☐	☐	☐	☐
Andre type fiskeoljer	☐	☐	☐	☐	☐	☐	☐	☐
Flytende multivitaminer (Sana-sol, Biovit og Nycoplus multivitamin mikstur)	☐	☐	☐	☐	☐	☐	☐	☐
Jern	☐	☐	☐	☐	☐	☐	☐	☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐	☐

INFORMASJON OM KOSTHOLD OG ERNÆRING

36. Hvor har du fått informasjon om kosthold og ernæring til barnet fra det var 6 måneder gammelt og frem til nå, og hvordan vurderer du denne informasjonen?
Sett ett kryss for hver linje

	Ikke fått informasjon	Svært nyttig	Nyttig	Lite nyttig	Unyttig
Helsestasjonen	☐	☐	☐	☐	☐
Helsepersonell utenfor helsestasjonen	☐	☐	☐	☐	☐
Homøopat	☐	☐	☐	☐	☐
Familie/kjente	☐	☐	☐	☐	☐
Ammehjelpen	☐	☐	☐	☐	☐
Bøker og/eller oppslagsverk	☐	☐	☐	☐	☐
Aviser/TV/Ukeblad	☐	☐	☐	☐	☐
Reklamemateriell	☐	☐	☐	☐	☐
Butikken	☐	☐	☐	☐	☐
Mattilsynets hjemmeside (www.mattilsynet.no)	☐	☐	☐	☐	☐
Helsedirektoratets hjemmeside (www.helsedirektoratet.no)	☐	☐	☐	☐	☐
Matportalens hjemmeside (www.matportalen.no)	☐	☐	☐	☐	☐
Andre internettsider	☐	☐	☐	☐	☐
Annet	☐	☐	☐	☐	☐

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37. Har du fått brosjyren "Mat for spedbarn", og hvordan vurderer du eventuelt denne brosjyren?
Sett ett kryss

- ☐ Ikke fått
- ☐ Svært nyttig
- ☐ Nyttig
- ☐ Lite nyttig
- ☐ Unyttig

38. Ønsker du mer informasjon om sped- og småbarnsernæring?
Sett ett kryss

- ☐ Ja
- ☐ Nei ⇨ *Gå til spørsmål 40*
- ☐ Vet ikke ⇨ *Gå til spørsmål 40*

39. Hvilke tema(-er) er det du særlig ønsker mer informasjon om i forhold til kosthold og ernæring nå når barnet er ca. 1 år gammelt?
Her kan du sette flere kryss

- ☐ Tilvenning til familiens kosthold
- ☐ Generelt om et sunt og variert kosthold til barnet
- ☐ Matvareallergi/-intoleranse
- ☐ Kosttilskudd
- ☐ Andre tema

oppgi hvilke :

BAKGRUNNSSPØRSMÅL OM BARNET

40. Når ble barnet født i forhold til ultralydstermin?
Sett ett kryss

- ☐ I 38. svangerskapsuke eller senere
- ☐ Mellom 30. og 37. svangerskapsuke
- ☐ Før 30. svangerskapsuke

41. Hvem har tilsyn med/passer barnet vanligvis på dagtid (hverdager)?
Her kan du sette flere kryss

- ☐ Mor
- ☐ Far
- ☐ Dagmamma
- ☐ Barnehage
- ☐ Besteforeldre eller annen omsorgsperson

BAKGRUNNSSPØRSMÅL OM BARNETS MOR OG FAR

42. Hva er mors alder?
Skriv inn mors alder

☐☐ år

43. Hvor mange barn har mor født?
Sett ett kryss

- ☐ 1 barn
- ☐ 2 barn
- ☐ 3 barn
- ☐ 4 barn eller flere

44. Hvilken utdannelse har barnets mor og far?
Sett kun ett kryss for høyeste fullførte utdannelse hos mor og kun ett kryss for høyeste fullførte utdannelse hos far

	Barnets mor	Barnets far
Utdanning på grunnskolenivå eller lavere	☐	☐
Utdanning på videregående skolenivå (gymnas/fagbrev)	☐	☐
Utdanning på universitets- og høgskolenivå (4 år eller mindre)	☐	☐
Utdanning på universitets- og høgskolenivå (mer enn 4 år)	☐	☐
Vet ikke	☐	☐

45. Er mor ute i arbeid eller studier nå (heltid eller deltid)?
Sett ett kryss

- ☐ Ja
- ☐ Nei ⇨ *Gå til spørsmål 47*

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46. Hvor gammelt var barnet da mor gikk ut i arbeid/studier?
Velg kun det alternativet som passer best.

Utearbeidende heltid fra barnet var: ☐☐ måneder

Utearbeidende deltid fra barnet var: ☐☐ måneder

Student/skoleelev fra barnet var: ☐☐ måneder

47. Hvordan er mors familiesituasjon?
Sett ett kryss

☐ Samboer

☐ Gift

☐ Bor alene med barnet/barna

☐ Annet

48. Hvilken landbakgrunn har mor?
Sett ett kryss. Velg kun det alternativet som passer best.

☐ Norge

☐ Øvrige Europa

☐ Utenfor Europa

49. Røyker barnets mor?
Sett ett kryss

☐ Ja, daglig

☐ Ja, av og til

☐ Nei

50. Snuser barnets mor?
Sett ett kryss

☐ Ja, daglig

☐ Ja, av og til

☐ Nei

51. Oppholder barnet seg i rom hvor noen røyker?
Sett ett kryss

- ☐ Nei
- ☐ Ja, av og til
- ☐ Ja, flere ganger i uken
- ☐ Ja, daglig

52. Har barnets foreldre eller søsken astma/allergi, eller har de hatt slike plager tidligere?
Her kan du sette flere kryss

- ☐ Nei
- ☐ Mor har/har hatt astma/allergi
- ☐ Far har/har hatt astma/allergi
- ☐ Barnets søsken har/har hatt astma/allergi

Tusen takk for at du tok deg tid til å besvare spørsmålene!

Spørreskjemaet postlegges i vedlagte svarkonvolutt - bildeboken skal du ikke returnere.

Eksempel på utfylling av enkelte spørsmål

Spørsmål 16 - om brød
Anders spiser vanligvis 4 skiver brød hver dag. På hverdagene spiser han Kneippbrød (5x4 = 20 skiver pr. uke), mens i helgene spiser han loff (2x4 = 8 skiver pr. uke). Spørsmål 16 fylles ut slik:

16. Hvilken type brød og hvor mye brød pleier barnet å spise nå?
For hver brødtype settes ett kryss for antall skiver pr. dag (½ rundstykke = 1 skive)

	Antall skiver pr. dag									
	½	1	2	3	4	5	6	7	8	9 el. flere
Fint brød (loff, fine rundstykker o.l.)	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐
Mellomgrovt brød (Kneipp, helkorn o.l.)	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
Grovt brød (minst 50% sammalt mel)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knekkebrød, kavring o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Sum skiver pr. dag = 4 **x 7 =** 28 **= Sum pr. uke.** Summen brukes i spørsmål 20.

Spørsmål 20 - om pålegg
Anders spiser tilsammen 28 skiver i løpet av en uke. Vanligvis bruker han prim, smøreost, leverpostei, makrell i tomat og syltetøy som pålegg. Han bruker prim på ca. 1 skive daglig (7 skiver pr. uke). Smøreost bruker han på ca. 4 skiver pr. uke. Han bruker leverpostei på ca. 1 skive daglig (7 skiver pr. uke). Makrell i tomat bruker han på ca. 5 skiver pr. uke, og syltetøy på ca. 5 skiver pr. uke. Tilsammen blir dette pålegg til ca. 28 brødskiver. Spørsmål 20 fylles ut slik:

20. Hvilke påleggstyper pleier barnet å spise nå?
For hver påleggstype settes ett kryss for antall brødskiver i løpet av en uke.
Ta utgangspunkt i sum brødskiver pr. uke fra spørsmål 16.

		På antall skiver pr. uke							
	Aldri/sjeldnere enn hver uke	½ -1	2-3	4-5	6-7	8-14	15-21	22-28	29 el. flere
Brunost/prim	☐	☐	☐	☐	☒	☐	☐	☐	☐
Smøreost	☐	☐	☐	☒	☐	☐	☐	☐	☐
Leverpostei	☐	☐	☐	☐	☒	☐	☐	☐	☐
Makrell i tomat o.l.	☐	☐	☐	☒	☐	☐	☐	☐	☐
Syltetøy, marmelade	☐	☐	☐	☒	☐	☐	☐	☐	☐

Spørsmål 21 - om middag
Anders spiser vanligvis kjøttkaker til middag 2 ganger i måneden, og han spiser ca. 1 kjøttkake pr. gang. Han spiser fiskepinner 1 gang i uken, og spiser ca 2 fiskepinner pr. gang. Anders spiser aldri suppe. Han spiser risgrøt en gang i uken, og den mengden han spiser er omtrent så stor som mengde B på bilde 11 i bildeheftet. (I dette eksempelet er det bare valgt ut noen av middagsrettene Anders spiser). Spørsmål 21 fylles ut slik:

21. Hvor ofte og hvor mye middagsmat pleier barnet å spise nå?
For hver type middagsmat settes ett kryss for hvor ofte og ett kryss for hvor mye pr. gang. Industrifremstilt barnemat på glass regnes ikke med her.

	Hvor ofte?						Hvor mye?			
	Ganger pr. mnd			eller	Ganger pr. uke		Mengde pr. gang			
	Aldri/sjeldnere enn hver måned	1	2	3	1	2	3 el. flere				
Kjøttkaker, medisterkaker, kjøttpudding	☐	☐	☒	☐	☐	☐	☐	stk./ skive	½ ☐	1 ☒	1½ ☐	2 ☐
Fiskepinner o.l.	☐	☐	☐	☐	☒	☐	☐	stk.	1 ☐	2 ☒	3 ☐	4 ☐
Tomatsuppe, annen suppe	☒	☐	☐	☐	☐	☐	☐	bilde 9	A ☐	B ☐	C ☐	D ☐
Risgrøt	☐	☐	☐	☐	☒	☐	☐	bilde 11	A ☐	B ☒	C ☐	D ☐

Dette spørreskjema er basert på et spørreskjema utviklet til undersøkelsen Spedkost 2006 – 2007 av:

Universitetet i Oslo, Mattilsynet og Sosial- og helsedirektoratet

Appendix 12b

HØGSKOLEN I OSLO
OG AKERSHUS

Forskningsprosjektet «Bruk av samtaleverktøy om kosthold»

Takk for at du tar deg tid til å besvare det vedlagte spørreskjemaet om «Kosthold blant barn i 10 måneders alder». **Det er viktig at du besvarer spørreskjemaet når barnet er ca. 10 måneder gammelt og før barnet besøker 10 – måneders konsultasjonen på helsestasjonen.**

Straks spørreskjemaet er besvart – legg det da i vedlagte ferdig frankerte svarkonvolutt og send det til Bettina Holmberg Fagerlund ved Høgskolen i Oslo og Akershus.

Les informasjonen på første side i spørreskjemaet før du starter utfyllingen. På siste side i spørreskjemaet finnes eksempel på utfylling av enkelte spørsmål.

Spørreskjemaet er påført et svarnummer for å ivareta din anonymitet. Kun Bettina Holmberg Fagerlund og unntaksvis hennes veiledere professor, helsesøster Kari Glavin; professor, helsesøster Sølvi Helseth; og professor Lene Frost Andersen har tilgang til koblingen mellom svarnummer og opplysninger om ditt og ditt barns navn. Dette trenger vi av praktiske grunner får å få sendt ut spørreskjemaer. Alle opplysninger behandles konfidensielt.

Vi antar at du vil bruke omtrent 40 min. på å fylle ut spørreskjemaet. Spørreskjemaet kan virke omfattende siden det prøver å belyse kostholdet fra ulike vinkler. Det er derfor viktig at du forsøker å svare på alle spørsmålene i spørreskjemaet.

Vi viser for øvrig til tidligere utdelt informasjonsskriv om forskningsprosjektet. Forskningsprosjektet er godkjent av Regionale komiteer for medisinsk og helsefaglig forskningsetikk (REK).

Med vennlig hilsen

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Spørreskjema om kosthold blant barn i 2 års alder

2015 - 2017

Doktorgradsstudie ved Bettina Holmberg Fagerlund

HØGSKOLEN I OSLO
OG AKERSHUS

Les dette før du fyller ut spørreskjemaet

Denne undersøkelsen tar sikte på å kartlegge kostholdet til barnet ditt som nå er ca. 2 år gammelt.

Vi spør om kostholdet slik det vanligvis er. Vi er klar over at kostholdet varierer fra dag til dag. Prøv derfor så godt du kan å angi et «gjennomsnitt» av barnets kosthold. Du kan ha de siste 14 dagene i tankene når du fyller ut skjemaet. Om frekvensene eller mengdene i spørreskjemaet ikke passer akkurat med det ditt barn spiser, angi det alternativet som ligner mest.

Det er vanlig at barn i denne alderen søler og ikke spiser / drikker hele porsjonen de får servert. Ved spørsmål om hvor mye barnet ditt spiser, prøv derfor så godt du kan å angi hva det faktisk har spist. Hvis du ikke kan gi et helt nøyaktig svar på spørsmålene, så fyll inn etter beste skjønn.

Til spørreskjemaet følger det et bildehefte som kan være til hjelp ved bestemmelsen av den mengden mat barnet vanligvis spiser pr. gang.

Eksempler på utfylling av enkelte spørsmål finner du bakerst i spørreskjemaet.

Vi har brukt følgende forkortelser i spørreskjemaet:

ts betyr teskje

bs betyr barneskje

ss betyr spiseskje

Dersom du har tvillinger eller trillinger, skal du svare for det barnet som ble født først.

Mor, far eller andre foresatte til barnet kan fylle ut skjemaet.

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Kosthold blant barn i 2-års alder

Kryss av for "Ja" i ruten under dersom du samtykker i å delta i undersøkelsen. Dersom du ikke ønsker å delta og vil reservere deg mot å bli oppringt samt å bli purret på, krysser du av for "Nei" og returnerer skjemaet.

☐ Ja

☐ Nei

Ved utfylling er det viktig at du går frem slik:

* Sett kryss i boksene. Slik: ☒ Ikke slik: ☒
* Ved rettelser kan du markere tydelig at det er feil, slik: ■
* I de åpne feltene skriver du inn tydelig tekst
* Der det spørres etter tall, skriver du disse slik: 1 2 3 4 5 6 7 8 9
* Skjemaet må ikke brettes
* Det utfylte skjemaet vil bli lest av en maskin. **Bruk blå eller sort kulepenn**.

Fylles ut på helsestasjonen eller fra helsekortet

Dato for måling av vekt/lengde (2 år): ☐☐ ☐☐ ☐☐☐☐
dag mnd år

Barnets vekt (2 år): ☐☐☐☐☐ gram **Barnets lengde (2 år):** ☐☐☐ cm

Dato for måling av vekt/lengde (10 mnd): ☐☐ ☐☐ ☐☐☐☐
dag mnd år

Barnets vekt (10 mnd): ☐☐☐☐☐ gram **Barnets lengde (10 mnd):** ☐☐☐ cm

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BAKGRUNNSSPØRSMÅL

1. Dato for utfylling av skjemaet
Skriv inn dag, måned og år i rutene.

dag mnd år

2. Hva er barnets kjønn?
Sett ett kryss

☐ Jente

☐ Gutt

3. Hvem fyller ut skjemaet?
Sett ett kryss

☐ Barnets mor

☐ Barnets far

☐ Både mor og far

☐ Annen person

SPØRSMÅL OM MELK OG MORSMELK

4. Hvor ofte og hvor mye melk pleier barnet å <u>drikke</u> nå?
*For hver melketype settes ett kryss for **hvor ofte**, enten ganger pr. uke eller ganger pr. dag og ett kryss for **hvor mye** pr. gang. For mengdeangivelse se på bilde 1 og 2 i bildeboken. 100 ml = 1 dl. Morsmelk regnes ikke med her.*

	Hvor ofte?								**Hvor mye?**			
	Ganger pr. uke		*eller*	**Ganger pr. dag**					**Mengde (ml) pr. gang**			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	60 A	120 B	180 C	240 D
Helmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lettmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ekstra lettmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Skummetmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Biola, Cultura o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokolademelk, O'boy o.l. med helmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokolademelk, O'boy o.l. med lett-, ekstra lett eller skummetmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Drikkeyoghurt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annen melk/melkeerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

oppgi type:

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5. Får barnet morsmelk nå?
Sett ett kryss

☐ Ja ⇨ *Gå til spørsmål 7*

☐ Nei, men barnet har fått morsmelk tidligere ⇨ *Gå til spørsmål 6*

☐ Nei, barnet har aldri fått morsmelk ⇨ *Gå til spørsmål 7*

6. Hvor gammelt var barnet da det sluttet å få morsmelk?
Sett ett kryss

Fødsel **Uker**

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

Måneder 2 år

2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15 ☐ 16 ☐ 17 ☐ 18 ☐ 19 ☐ 20 ☐ 21 ☐ 22 ☐ 23 ☐ 24 ☐

SPØRSMÅL OM YOGHURT

7. Hvor ofte og hvor mye yoghurt pleier barnet å spise nå?
*For hver yoghurt-type settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** barnet vanligvis spiser pr. gang.*

	Hvor ofte?						**Hvor mye?**			
	Ganger pr. uke		***eller***	**Ganger pr. dag**			**Mengde (beger) pr. gang**			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3 el. flere	¼	½	¾	1
Fruktyoghurt (eks. Sprett)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Liten fruktyoghurt m/mysli	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Go'morgen yoghurt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett fruktyoghurt (eks. Yoplait)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Yoghurt naturell	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Biola yoghurt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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SPØRSMÅL OM GRØT, KORNBLANDING OG GRYN O.L.

8. Hvor ofte og hvor mye grøt, kornblanding og gryn pleier barnet å spise nå?

*For hver type grøt, kornblanding og gryn o.l. settes ett kryss for **hvor ofte**, enten ganger pr. uke eller ganger pr. dag. I tillegg settes ett kryss for **hvor mye** barnet vanligvis spiser pr. gang. For mengdeangivelse se på bilde 3 og 4 i bildeboken.*

	Hvor ofte?							**Hvor mye?**						
		Ganger pr. uke		***eller***	**Ganger pr. dag**			**Mengde (dl) pr. gang**						
Hjemmelaget grøt av:	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere		½ A	1 B	1 ½ C	2 D	2 ½ E	3 F
Havregryn	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Grovt/sammalt mel	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Fint/hvitt mel/kavring/ semule/ris/mais	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Hirse	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Industrifremstilt grøt:									A	B	C	D	E	F
Nestlé grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Nestlé velling	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Småfolk grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Hipp grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Holle grøt	☐	☐	☐	☐	☐	☐	☐	bilde 3	☐	☐	☐	☐	☐	☐
Kornblanding og gryn med o.l. melk:									A	B	C	D		
Havregryn, usøtede kornblandinger	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		
Cornflakes, puffet ris, puffet havre, hvetenøtter	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		
Søte kornblandinger (Sol Frokost o.l.)	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		
Honni Korn, Frosties, Choko-frokost o.l.	☐	☐	☐	☐	☐	☐	☐	bilde 4	☐	☐	☐	☐		

9. Hvor ofte og hvor mye av de ulike matvarene nevnt nedenfor tilsettes på grøt, gryn kornblanding o.l.?

*For hver matvare settes ett kryss for **hvor ofte**, enten ganger pr. uke eller ganger pr. dag. I tillegg settes ett kryss for **hvor mye** barnet vanligvis spiser pr. gang.*

	Hvor ofte?							**Hvor mye?**			
		Ganger pr. uke		*eller*	**Ganger pr. dag**			**Mengde pr. gang**			
Tilsatt på grøt, gryn, kornblanding o.l.:	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere	1 ts	2 ts	3 ts	4 ts
Syltetøy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett syltetøy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sukker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Honning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nypeekstrakt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

10. Dersom barnet får hjemmelaget grøt, gryn eller kornblandning o.l. nå, hva slags væske tilsettes vanligvis grøten ved tilberedning/koking og hva slags væske tilsettes vanligvis grynene, kornblandningen o.l.?

Sett ett kryss for væske i hjemmelaget grøt og ett kryss for væske i gryn, kornblandning o.l.

	Hjemmelaget grøt	Gryn/kornblandning o.l.
Vann	☐	☐
Helmelk	☐	☐
Lettmelk	☐	☐
Ekstra lettmelk	☐	☐
Skummetmelk	☐	☐
Annet	☐	☐

SPØRSMÅL OM BRØD OG PÅLEGG

11. Hvilken type brød og hvor mye brød pleier barnet å spise nå?
For hver brødtype settes ett kryss for antall skiver pr. dag (½ rundstykke = 1 skive)

	Antall skiver pr. dag									
	½	1	2	3	4	5	6	7	8	9 el. flere
Fint brød (loff, fine rundstykker o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mellomgrovt brød (Kneipp, helkorn o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grovt brød (minst 50% sammalt mel)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knekkebrød, kavring o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Sum skiver pr. dag = ☐☐ **x 7 =** ☐☐☐ **= Sum pr. uke.** Summen brukes i spørsmål 15.

12. Skjæres skorpene på brødskivene til barnet vanligvis bort?
Sett ett kryss

- ☐ Bruker ikke brødskiver
- ☐ Ja
- ☐ Nei

13. Hva smører du vanligvis på brødet til barnet?
Sett ett kryss

- ☐ Bruker ikke smør/margarin på brødet ⇨ *Gå til spørsmål 15*
- ☐ Smør (meierismør)
- ☐ Bremykt
- ☐ Brelett
- ☐ Melange
- ☐ Soft Original, Soft Ekstra
- ☐ Vita
- ☐ Lett margarin (Soft Light, Vita Lett)
- ☐ Annen margarin

14. Hvor mye smører du vanligvis på brødet til barnet?
Se mengdeangivelse på bilde 5 i bildeboken.
Sett ett kryss

- ☐ Skrapet lag (Bilde A)
- ☐ Middels lag (Bilde B)
- ☐ Godt dekket lag (Bilde C)
- ☐ Tykt lag (Bilde D)

23371

15. Hvilke påleggstyper pleier barnet å spise nå?

For hver påleggstype settes ett kryss for antall brødskiver i løpet av en uke.
Ta utgangspunkt i sum brødskiver pr. uke fra spørsmål 11.

	Aldri/sjeldnere enn hver uke	På antall skiver pr. uke: ½ -1	2-3	4-5	6-7	8-14	15-21	22-28	29 el. flere
Brunost/prim	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sprett prim	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett/mager brunost/prim	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hvitost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett/mager hvitost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Smøreost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett/mager smøreost	☐	☐	☐	☐	☐	☐	☐	☐	☐
Leverpostei	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mager leverpostei	☐	☐	☐	☐	☐	☐	☐	☐	☐
Servelat	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kokt skinke, lettservelat, kalkunpålegg o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Salami, fårepølse o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Svolværpostei, Lofotpostei	☐	☐	☐	☐	☐	☐	☐	☐	☐
Makrell i tomat o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kaviar	☐	☐	☐	☐	☐	☐	☐	☐	☐
Egg (kokt, stekt, eggerøre)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Syltetøy, marmelade	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lett syltetøy, frysetøy	☐	☐	☐	☐	☐	☐	☐	☐	☐
Honning	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hapå	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokolade-, nøttepålegg o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sjokoladepålegg med mindre sukker	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annet søtt pålegg (Banos, Sunda o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Peanøttsmør	☐	☐	☐	☐	☐	☐	☐	☐	☐
Salat med majones	☐	☐	☐	☐	☐	☐	☐	☐	☐
Frukt/bær som pålegg (banan o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grønnsaker som pålegg	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annet pålegg	☐	☐	☐	☐	☐	☐	☐	☐	☐

oppgi type:

23371

SPØRSMÅL OM MIDDAGSMAT (UTENOM INDUSTRIFREMSTILT BARNEMAT)

16. Hvor ofte og hvor mye middagsmat pleier barnet å spise nå?

*For hver type middagsmat settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang. Industrifremstilt barnemat regnes ikke med her.*

	Hvor ofte? Ganger pr. mnd			eller	Ganger pr. uke			Hvor mye? Mengde pr. gang	
Kjøtt og kjøttretter: Grill-, wiener-, kjøttpølser o.l. av storfe- og svinekjøtt	Aldri/sjeldnere enn hver måned ☐	1 ☐	2 ☐	3 ☐	1 ☐	2 ☐	3 el. flere ☐	bilde 7	A ☐ B ☐ C ☐ D ☐
Grill-, wiener-, kjøttpølser o.l. av kylling/kalkun	☐	☐	☐	☐	☐	☐	☐	bilde 7	A ☐ B ☐ C ☐ D ☐
Magre grill-, wiener-, kjøttpølser o.l.	☐	☐	☐	☐	☐	☐	☐	bilde 7	A ☐ B ☐ C ☐ D ☐
Kjøttkaker, medisterkaker, kjøttpudding	☐	☐	☐	☐	☐	☐	☐	stk./ skive	½ ☐ 1 ☐ 1½ ☐ 2 ☐
Hamburgere, karbonader o.l.	☐	☐	☐	☐	☐	☐	☐	stk.	½ ☐ 1 ☐ 1½ ☐ 2 ☐
Kjøttsaus og andre kjøttdeigretter	☐	☐	☐	☐	☐	☐	☐	bilde 6	A ☐ B ☐ C ☐ D ☐
Kjøtt av okse, lam, svin o.l.	☐	☐	☐	☐	☐	☐	☐	bilde 6	A ☐ B ☐ C ☐ D ☐
Kylling, høne, kalkun	☐	☐	☐	☐	☐	☐	☐	bilde 6	A ☐ B ☐ C ☐ D ☐
Lapskaus, gryte med kjøtt/grønnsaker/poteter	☐	☐	☐	☐	☐	☐	☐	bilde 6	A ☐ B ☐ C ☐ D ☐
Fisk og fiskemat: Fiskeboller, fiskepudding	☐	☐	☐	☐	☐	☐	☐	stk./ skive	½ ☐ 1 ☐ 2 ☐ 3 ☐
Fiskegrateng	☐	☐	☐	☐	☐	☐	☐	bilde 10	A ☐ B ☐ C ☐ D ☐
Fiskekaker	☐	☐	☐	☐	☐	☐	☐	stk.	½ ☐ 1 ☐ 2 ☐ 3 ☐
Fiskepinner o.l.	☐	☐	☐	☐	☐	☐	☐	stk.	1 ☐ 2 ☐ 3 ☐ 4 ☐
Torsk, sei, annen hvit fisk	☐	☐	☐	☐	☐	☐	☐	bilde 8	A ☐ B ☐ C ☐ D ☐
Ørret, laks, makrell, sild	☐	☐	☐	☐	☐	☐	☐	bilde 8	A ☐ B ☐ C ☐ D ☐
Annen middagsmat: Tomatsuppe, annen suppe	☐	☐	☐	☐	☐	☐	☐	bilde 9	A ☐ B ☐ C ☐ D ☐
Pannekaker	☐	☐	☐	☐	☐	☐	☐	stk.	½ ☐ 1 ☐ 2 ☐ 3 ☐
Risgrøt	☐	☐	☐	☐	☐	☐	☐	bilde 11	A ☐ B ☐ C ☐ D ☐
Pizza (1 bit=1/8 Pizza Grandiosa)	☐	☐	☐	☐	☐	☐	☐	bit	½ ☐ 1 ☐ 2 ☐ 3 ☐
Annen middagsmat	☐	☐	☐	☐	☐	☐	☐		

oppgi type:

23371

17. Hvor ofte og hvor mye poteter, ris, pasta, grønnsaker og saus pleier barnet å spise nå?

*For hver matvaretype settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang. Her regnes både det som spises til middag og eventuelt til andre måltider i løpet av dagen. Industrifremstilt barnemat på glass regnes ikke med.*

	Hvor ofte?					**Hvor mye?**				
		Ganger pr. uke		*eller* **Ganger pr. dag**		**Mengde pr. gang**				
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2 el. flere					
Poteter, ris, pasta: Poteter, kokt/most	☐	☐	☐	☐	☐	stk.	☐ ½	☐ 1	☐ 1½	☐ 2
Potetmos (av pulver)	☐	☐	☐	☐	☐	bilde 10	☐ A	☐ B	☐ C	☐ D
Pommes frites, stekte poteter	☐	☐	☐	☐	☐	bilde 11	☐ A	☐ B	☐ C	☐ D
Ris	☐	☐	☐	☐	☐	bilde 11	☐ A	☐ B	☐ C	☐ D
Pasta (spagetti, makaroni o.l.)	☐	☐	☐	☐	☐	bilde 11	☐ A	☐ B	☐ C	☐ D
Hamburger-, pølsebrød, lomper	☐	☐	☐	☐	☐	stk.	☐ ½	☐ 1	☐ 1½	☐ 2
Saus og annet: Brun saus, hvit saus	☐	☐	☐	☐	☐	ss	☐ 1	☐ 2	☐ 3	☐ 4
Smeltet margarin, smør	☐	☐	☐	☐	☐	ss	☐ 1	☐ 2	☐ 3	☐ 4
Ketchup	☐	☐	☐	☐	☐	ss	☐ ½	☐ 1	☐ 1½	☐ 2
Rømme	☐	☐	☐	☐	☐	ss	☐ ½	☐ 1	☐ 1½	☐ 2
Grønnsaker (rå, kokte, moset): Gulrot	☐	☐	☐	☐	☐	bilde 12	☐ A	☐ B	☐ C	☐ D
Kålrot	☐	☐	☐	☐	☐	bilde 12	☐ A	☐ B	☐ C	☐ D
Blomkål, brokkoli	☐	☐	☐	☐	☐	bilde 12	☐ A	☐ B	☐ C	☐ D
Frossen grønnsaksblanding	☐	☐	☐	☐	☐	bilde 13	☐ A	☐ B	☐ C	☐ D
Råkost	☐	☐	☐	☐	☐	bilde 14	☐ A	☐ B	☐ C	☐ D
Agurk	☐	☐	☐	☐	☐	skiver	☐ 2	☐ 4	☐ 6	☐ 8
Tomat	☐	☐	☐	☐	☐	stk.	☐ ¼	☐ ½	☐ ¾	☐ 1
Erter	☐	☐	☐	☐	☐	ss	☐ 1	☐ 2	☐ 3	☐ 4
Mais	☐	☐	☐	☐	☐	ss	☐ 1	☐ 2	☐ 3	☐ 4
Paprika	☐	☐	☐	☐	☐	ringer	☐ ½	☐ 1	☐ 2	☐ 3
Andre grønnsaker	☐	☐	☐	☐	☐					

oppgi type:

18. Hvilken type fett bruker du vanligvis til matlaging (steking, sauser o.l.)?
Her kan du sette flere kryss

- ☐ Smør (meierismør)
- ☐ Bremykt
- ☐ Melange
- ☐ Soft Original, Soft Ekstra
- ☐ Vita
- ☐ Flytende margarin på flaske (Vita, Melange, Bremykt o.l.)
- ☐ Annen margarin
- ☐ Olje (oliven-, soya-, mais-, rapsolje o.l.)

SPØRSMÅL OM INDUSTRIFREMSTILT BARNEMAT

19. Dersom barnet får industrifremstilt barnemat, hvor ofte og hvor mye pleier det å spise?
*For hver type industrifremstilt barnemat settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang. For mengdeangivelser se på bilde 15 og 16 i bildeboken.*

	Hvor ofte?						**Hvor mye?**			
		Ganger pr. uke		***eller***	**Ganger pr. dag**		**Mengde (glass) pr. gang**			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3 el. flere	¼ A	½ B	¾ C	1 D
Grønnsaker (uten kjøtt og fisk)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kjøtt/kylling/kalkun og grønnsaker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Pasta/ris med kjøtt og grønnsaker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Fisk og grønnsaker	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Dersom barnet får andre typer barnemat, oppgi type:

23371

SPØRSMÅL OM IS, KAKER, KJEKS, GODTERIER O.L.

20. Hvor ofte og hvor mye is, kaker, kjeks, godterier o.l. pleier barnet å spise nå?

*For hver matvaretype settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang*

	Hvor ofte?							**Hvor mye?**				
	Ganger pr. mnd		***eller***	**Ganger pr. uke**				**Mengde pr. gang**				
	Aldri/sjeldnere enn hver mnd	1-3	1	2	3	4	5 el. flere					
Is - fløteis (1 pinne= bilde 17 C)	☐	☐	☐	☐	☐	☐	☐	bilde 17	A ☐	B ☐	C ☐	D ☐
Is - saftis	☐	☐	☐	☐	☐	☐	☐	pinne	½ ☐	1 ☐		
Puddinger, gelé, fromasj	☐	☐	☐	☐	☐	☐	☐	bilde 17	A ☐	B ☐	C ☐	D ☐
Boller, skolebrød o.l.	☐	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	1 ☐	2 ☐
Kaker (sjokoladekake, formkake o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	1 ☐	2 ☐
Vafler	☐	☐	☐	☐	☐	☐	☐	plate	¼ ☐	½ ☐	1 ☐	1½ ☐
Barnekjeks (Hipp, Holle)	☐	☐	☐	☐	☐	☐	☐	stk.	1 ☐	2 ☐	4 ☐	6 ☐
Andre barnekjeks (Tom & Jerry, Mumie o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	1 ☐	2 ☐	4 ☐	6 ☐
Søte kjeks (Mariekjeks, fylte kjeks o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	1 ☐	2 ☐	4 ☐	6 ☐
Smørbrødkjeks (Kornmo, havrekjeks o.l.)	☐	☐	☐	☐	☐	☐	☐	stk.	1 ☐	2 ☐	4 ☐	6 ☐
Sjokolade	☐	☐	☐	☐	☐	☐	☐	bit/rute	2 ☐	4 ☐	6 ☐	8 ☐
Smågodt, seigmenn, drops o.l.	☐	☐	☐	☐	☐	☐	☐	stk.	2 ☐	4 ☐	6 ☐	8 ☐
Snacks (potetgull, popcorn, ostepop o.l.)	☐	☐	☐	☐	☐	☐	☐	kopp	½ ☐	1 ☐	1½ ☐	2 ☐

Dersom barnet får andre typer is, kaker, kjeks, godterier o.l., oppgi type:

23371

SPØRSMÅL OM FRUKT OG BÆR

21. Hvor ofte og hvor mye frukt og bær pleier barnet å spise nå?

*For hver type frukt/bær settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang. Frukt og bær som pålegg til brødskiver og fra industrifremstilt barnemat regnes ikke med her.*

	Hvor ofte? Aldri/sjeldnere enn hver uke	**Ganger pr. uke** 1-3	4-6	*eller* **Ganger pr. dag** 1	2	3 el. flere	**Hvor mye? Mengde pr. gang**	A	B	C	D
Hjemmelaget mos av frukt og/eller bær	☐	☐	☐	☐	☐	☐	bilde 16	☐	☐	☐	☐
Bær (friske, frosne)	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Appelsin, klementin o.l.	☐	☐	☐	☐	☐	☐	båter	2 ☐	4 ☐	6 ☐	8 ☐
Banan	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	¾ ☐	1 ☐
Eple, pære	☐	☐	☐	☐	☐	☐	stk.	¼ ☐	½ ☐	¾ ☐	1 ☐
Druer	☐	☐	☐	☐	☐	☐	stk.	3 ☐	6 ☐	9 ☐	12 ☐
Annen frukt (kiwi, melonskive o.l.)	☐	☐	☐	☐	☐	☐	stk.	½ ☐	1 ☐	2 ☐	3 ☐
Hermetisk frukt	☐	☐	☐	☐	☐	☐	ss	1 ☐	2 ☐	3 ☐	4 ☐
Rosiner (1 eske = 45 g)	☐	☐	☐	☐	☐	☐	eske	¼ ☐	½ ☐	¾ ☐	1 ☐
Annen tørket frukt (aprikos, svisker o.l.)	☐	☐	☐	☐	☐	☐	stk.	1 ☐	2 ☐	3 ☐	4 ☐

SPØRSMÅL OM VANN, SAFT, JUICE O.L.

22. Hvor ofte og hvor mye vann, saft, juice o.l. pleier barnet å drikke nå?

*For hver type drikke settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** barnet vanligvis drikker pr. gang. For mengdeangivelse se på bilde 1 og 2 i bildeboken.*

	Hvor ofte? Aldri/sjeldnere enn hver uke	**Ganger pr. uke** 1-3	4-6	*eller* **Ganger pr. dag** 1	2	3	4	5 el. flere	**Hvor mye? Mengde pr. gang** A	B	C	D
Vann	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Barnedrikk (Hipp, Nestlé o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, sukret (Husholdningssaft o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, kunstig søtet (Fun light o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, sukret	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, kunstig søtet	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Juice	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nektar (eplenektar o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nypeekstrakt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

23371

SPØRSMÅL OM MÅLTIDER

23. Hvor ofte pleier barnet å spise følgende måltider i løpet av én uke?
For hver måltidstype settes ett kryss

	Ganger pr. uke							
	Aldri/sjeldnere enn hver uke	1	2	3	4	5	6	Hver dag
Frokost	☐	☐	☐	☐	☐	☐	☐	☐
Formiddagsmat/lunsj	☐	☐	☐	☐	☐	☐	☐	☐
Ettermiddagsmat (måltid etter lunsj og før middag)	☐	☐	☐	☐	☐	☐	☐	☐
Middag	☐	☐	☐	☐	☐	☐	☐	☐
Kveldsmat	☐	☐	☐	☐	☐	☐	☐	☐
Andre måltider/mellommåltider	☐	☐	☐	☐	☐	☐	☐	☐

oppgi hva slags type måltid(-er):

24. Dersom barnet er i barnehage, hos dagmamma o.l., hvor ofte pleier barnet å spise følgende måltider på disse stedene i løpet av én uke?
For hver måltidstype settes ett kryss

	Ganger pr. uke					
	Aldri/sjeldnere enn hver uke	1	2	3	4	5
Frokost	☐	☐	☐	☐	☐	☐
Formiddagsmat/lunsj	☐	☐	☐	☐	☐	☐
Ettermiddagsmat (måltid etter lunsj og før middag)	☐	☐	☐	☐	☐	☐
Middag	☐	☐	☐	☐	☐	☐
Andre måltider/mellommåltider	☐	☐	☐	☐	☐	☐

ANDRE SPØRSMÅL OM KOSTHOLDET

25. Er det noen matvarer det kunne være aktuelt å gi barnet, men som du unngår å gi fordi du er redd barnet kan reagere med allergi/intoleranse?
Sett ett kryss

☐ Ja

☐ Nei ⟹ *Gå til spørsmål 27*

26. Hvilke matvarer/ingredienser i matvarer unngår du å gi barnet?
Her kan du sette flere kryss

☐ Glutenholdige mel/korn (hvete, havre, rug og bygg)

☐ Vanlig kumelk

☐ Appelsin/appelsinjuice/annen sitrusfrukt

☐ Fisk/skalldyr

☐ Nøtter/nøtteprodukter (peanøttsmør o.l.)

☐ Belgfrukter (erter, bønner o.l.)

☐ Egg

☐ Soya

☐ Matvarer med tilsetningsstoffer

☐ Annet

27. Har barnet problemer med spising/mat?
Her kan du sette flere kryss

☐ Nei, har ikke noen problemer

☐ Ja, dårlig matlyst/småspist

☐ Ja, liker få matvarer

☐ Ja, vanskelig med tilvenning til familiens kosthold

☐ Ja, allergi/intoleranse mot enkelte matvarer

☐ Ja, andre problemer

oppgi hvilke:

23371

SPØRSMÅL OM KOSTTILSKUDD

28. Får barnet vitamin D-tilskudd (som vitamin D-dråper/tran) eller annet kosttilskudd nå?
Sett ett kryss

☐ Ja

☐ Nei, men barnet har fått vitamin D-tilskudd/kosttilskudd tidligere ⇨ *Gå til spørsmål 30*

☐ Nei, barnet har aldri fått vitamin D-tilskudd/kosttilskudd ⇨ *Gå til spørsmål 31*

29. Hvor ofte og hvor mye vitamin D-tilskudd eller annet kosttilskudd pleier barnet å få nå?
*For hver type kosttilskudd settes ett kryss for **hvor ofte** og ett kryss for **hvor mye** pr. gang.*

Det er satt opp to mengder for en teskje: 3 ml (liten teskje) og 5 ml (stor teskje)

	Hvor ofte?					**Hvor mye?**					
	Ganger pr. uke		*eller*	**Ganger pr. dag**		**Mengde pr. gang**					
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2 el. flere	1 tablett	2 tabletter				
Multivitamin-tabletter for barn med A og D vitamin	☐	☐	☐	☐	☐	☐	☐				
Multivitamin-tabletter for barn uten A og D vitamin	☐	☐	☐	☐	☐	☐	☐				
Kalktabletter	☐	☐	☐	☐	☐	☐	☐				
Vitamin C	☐	☐	☐	☐	☐	☐	☐				
Vitamin D-dråper	☐	☐	☐	☐	☐	3 dråper ☐	5 dråper ☐				
Tran	☐	☐	☐	☐	☐	1 ts 3 ml ☐	1 ts 5 ml ☐	1 bs 7 ml ☐	1 ss 10 ml ☐		
Andre type fiskeoljer	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Flytende multivitaminer (Sana-sol, Biovit og Nycoplus multivitamin mikstur)	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Jern	☐	☐	☐	☐	☐	1 ts 3 ml ☐	1 ts 5 ml ☐	1 bs 7 ml ☐	1 ss 10 ml ☐	1 tablett ☐	2 tabletter ☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

oppgi type:

30. Hvilke av følgende kosttilskudd har barnet fått de to første årene?
*Sett kryss ved **alle** alderstrinnene barnet har fått kosttilskudd.*

	Ikke fått	Barnets alder (måneder) 1	3	6	9	12	18	24
Multivitamin-tabletter for barn med A og D vitamin	☐	☐	☐	☐	☐	☐	☐	☐
Multivitamin-tabletter for barn uten A og D vitamin	☐	☐	☐	☐	☐	☐	☐	☐
Kalktabletter	☐	☐	☐	☐	☐	☐	☐	☐
Vitamin C	☐	☐	☐	☐	☐	☐	☐	☐
Vitamin D-dråper	☐	☐	☐	☐	☐	☐	☐	☐
Tran	☐	☐	☐	☐	☐	☐	☐	☐
Andre type fiskeoljer	☐	☐	☐	☐	☐	☐	☐	☐
Flytende multivitaminer (Sana-sol, Biovit og Nycoplus multivitamin mikstur)	☐	☐	☐	☐	☐	☐	☐	☐
Jern	☐	☐	☐	☐	☐	☐	☐	☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐	☐

INFORMASJON OM KOSTHOLD OG ERNÆRING

31. Hvor har du fått informasjon om kosthold og ernæring til barnet fra 1- til 2-års alder, og hvordan vurderer du denne informasjonen?
Sett ett kryss for hver linje

	Ikke fått informasjon	Svært nyttig	Nyttig	Lite nyttig	Unyttig
Helsestasjonen	☐	☐	☐	☐	☐
Helsepersonell utenfor helsestasjonen	☐	☐	☐	☐	☐
Homøopat	☐	☐	☐	☐	☐
Familie/kjente	☐	☐	☐	☐	☐
Bøker og/eller oppslagsverk	☐	☐	☐	☐	☐
Aviser/TV/Ukeblad	☐	☐	☐	☐	☐
Reklamemateriell	☐	☐	☐	☐	☐
Butikken	☐	☐	☐	☐	☐
Mattilsynets hjemmeside (www.mattilsynet.no)	☐	☐	☐	☐	☐
Helsedirektoratets hjemmeside (www.helsedirektoratet.no)	☐	☐	☐	☐	☐
Matportalens hjemmeside (www.matportalen.no)	☐	☐	☐	☐	☐
Andre internettsider	☐	☐	☐	☐	☐
Annet	☐	☐	☐	☐	☐

32. Ønsker du mer informasjon om småbarnsernæring?
Sett ett kryss

- ☐ Ja
- ☐ Nei ⇨ *Gå til spørsmål 34*
- ☐ Vet ikke ⇨ *Gå til spørsmål 34*

33. Hvilke tema er det du særlig ønsker mer informasjon om når det gjelder kosthold og ernæring nå når barnet er ca. 2 år gammelt?
Her kan du sette flere kryss

- ☐ Tilvenning til familiens kosthold
- ☐ Generelt om et sunt og variert kosthold til barnet
- ☐ Matvareallergi/-intoleranse
- ☐ Kosttilskudd
- ☐ Andre tema

oppgi hvilke :

BAKGRUNNSSPØRSMÅL OM BARNET

34. Når ble barnet født i forhold til ultralydstermin?
Sett ett kryss

- ☐ I 38. svangerskapsuke eller senere
- ☐ Mellom 30. og 37. svangerskapsuke
- ☐ Før 30. svangerskapsuke

35. Hvem har tilsyn med/passer barnet vanligvis på dagtid (hverdager)?
Her kan du sette flere kryss

- ☐ Mor
- ☐ Far
- ☐ Dagmamma
- ☐ Barnehage
- ☐ Barnepark
- ☐ Besteforeldre eller annen omsorgsperson

BAKGRUNNSSPØRSMÅL OM BARNETS MOR OG FAR

36. Hva er mors alder?
Skriv inn mors alder

☐☐ år

37. Hvor mange barn har mor født?
Sett ett kryss

- ☐ 1 barn
- ☐ 2 barn
- ☐ 3 barn
- ☐ 4 barn eller flere

38. Hvilken utdannelse har barnets mor og far?
Sett kun ett kryss for høyeste fullførte utdannelse hos mor og kun ett kryss for høyeste fullførte utdannelse hos far

	Barnets mor	Barnets far
Utdanning på grunnskolenivå eller lavere	☐	☐
Utdanning på videregående skolenivå (gymnas/fagbrev)	☐	☐
Utdanning på universitets- og høgskolenivå (4 år eller mindre)	☐	☐
Utdanning på universitets- og høgskolenivå (mer enn 4 år)	☐	☐
Vet ikke	☐	☐

39 . Er mor ute i arbeid eller studier nå (heltid eller deltid)?
Sett ett kryss.

- ☐ Ja
- ☐ Nei ⟹ *Gå til spørsmål 41*

40. Hvor gammelt var barnet da mor gikk ut i arbeid/studier?
Velg kun det alternativet som passer best.

Utearbeidende heltid fra barnet var:	☐☐	måneder
Utearbeidende deltid fra barnet var:	☐☐	måneder
Student/skoleelev fra barnet var:	☐☐	måneder

41. Hvordan er mors familiesituasjon?
Sett ett kryss

- ☐ Samboer
- ☐ Gift
- ☐ Bor alene med barnet/barna
- ☐ Annet

42. Hvilken landbakgrunn har mor?
Sett ett kryss. Velg kun det alternativet som passer best.

- ☐ Norge
- ☐ Øvrige Europa
- ☐ Utenfor Europa

43. Røyker barnets mor?
Sett ett kryss

- ☐ Ja, daglig
- ☐ Ja, av og til
- ☐ Nei

44. Snuser barnets mor?
Sett ett kryss

- ☐ Ja, daglig
- ☐ Ja, av og til
- ☐ Nei

45. Oppholder barnet seg i rom hvor noen røyker?
Sett ett kryss

- ☐ Nei
- ☐ Ja, av og til
- ☐ Ja, flere ganger i uken
- ☐ Ja, daglig

46. Har barnets foreldre eller søsken astma/allergi, eller har de hatt slike plager tidligere?
Her kan du sette flere kryss

- ☐ Nei
- ☐ Mor har/har hatt astma/allergi
- ☐ Far har/har hatt astma/allergi
- ☐ Barnets søsken har/har hatt astma/allergi

Tusen takk for at du tok deg tid til å besvare spørsmålene!

Spørreskjemaet postlegges i vedlagte svarkonvolutt - bildeboken skal du ikke returnere.

Eksempel på utfylling av enkelte spørsmål

Spørsmål 11 - om brød
Anders spiser vanligvis 4 skiver brød hver dag. På hverdagene spiser han Kneippbrød (5x4 = 20 skiver pr. uke), mens i helgene spiser han loff (2x4 = 8 skiver pr. uke). Spørsmål 11 fylles ut slik:

11. Hvilken type brød og hvor mye brød pleier barnet å spise nå?
For hver brødtype settes ett kryss for antall skiver pr. dag (½ rundstykke = 1 skive)

	Antall skiver pr. dag									
	½	1	2	3	4	5	6	7	8	9 el. flere
Fint brød (loff, fine rundstykker o.l.)	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐
Mellomgrovt brød (Kneipp, helkorn o.l.)	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
Grovt brød (minst 50% sammalt mel)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knekkebrød, kavring o.l.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Sum skiver pr. dag = 4 x 7 = 28 **= Sum pr. uke.** Summen brukes i spørsmål 15.

Spørsmål 15 - om pålegg
Anders spiser tilsammen 28 skiver i løpet av en uke. Vanligvis bruker han prim, smøreost, leverpostei, makrell i tomat og syltetøy som pålegg. Han bruker prim på ca. 1 skive daglig (7 skiver pr. uke). Smøreost bruker han på ca. 4 skiver pr. uke. Han bruker leverpostei på ca. 1 skive daglig (7 skiver pr. uke). Makrell i tomat bruker han på ca. 5 skiver pr. uke, og syltetøy på ca. 5 skiver pr. uke. Tilsammen blir dette pålegg til ca. 28 brødskiver. Spørsmål 15 fylles ut slik:

15. Hvilke påleggstyper pleier barnet å spise nå?
For hver påleggstype settes ett kryss for antall brødskiver i løpet av en uke.
Ta utgangspunkt i sum brødskiver pr. uke fra spørsmål 11.

		På antall skiver pr. uke							
	Aldri/sjeldnere enn hver uke	½ -1	2-3	4-5	6-7	8-14	15-21	22-28	29 el. flere
Brunost/prim	☐	☐	☐	☐	☒	☐	☐	☐	☐
Smøreost	☐	☐	☐	☒	☐	☐	☐	☐	☐
Leverpostei	☐	☐	☐	☐	☒	☐	☐	☐	☐
Makrell i tomat o.l.	☐	☐	☐	☒	☐	☐	☐	☐	☐
Syltetøy, marmelade	☐	☐	☐	☒	☐	☐	☐	☐	☐

Spørsmål 16 - om middag
Anders spiser vanligvis kjøttkaker til middag 2 ganger i måneden, og han spiser ca. 1 kjøttkake pr. gang. Han spiser fiskepinner 1 gang i uken, og spiser ca 2 fiskepinner pr. gang. Anders spiser aldri suppe. Han spiser risgrøt en gang i uken, og den mengden han spiser er omtrent så stor som mengde B på bilde 11 i bildeheftet. (I dette eksempelet er det bare valgt ut noen av middagsrettene Anders spiser). Spørsmål 16 fylles ut slik:

16. Hvor ofte og hvor mye middagsmat pleier barnet å spise nå?
For hver type middagsmat settes ett kryss for hvor ofte og ett kryss for hvor mye pr. gang. Industrifremstilt barnemat på glass regnes ikke med her.

	Hvor ofte?							Hvor mye?				
		Ganger pr. mnd			eller	Ganger pr. uke		Mengde pr. gang				
	Aldri/sjeldnere enn hver måned	1	2	3	1	2	3 el. flere		½	1	1½	2
Kjøttkaker, medisterkaker, kjøttpudding	☐	☐	☒	☐	☐	☐	☐	stk./ skive	☐	☒	☐	☐
									1	2	3	4
Fiskepinner o.l.	☐	☐	☐	☐	☒	☐	☐	stk.	☐	☒	☐	☐
									A	B	C	D
Tomatsuppe, annen suppe	☒	☐	☐	☐	☐	☐	☐	bilde 9	☐	☐	☐	☐
									A	B	C	D
Risgrøt	☐	☐	☐	☐	☒	☐	☐	bilde 11	☐	☒	☐	☐

Dette spørreskjema er basert på et spørreskjema utviklet til undersøkelsen Småbarnskost 2007 av:

Universitetet i Oslo, Mattilsynet og Sosial- og helsedirektoratet

Appendix 13b

HØGSKOLEN I OSLO
OG AKERSHUS

Forskningsprosjektet «Bruk av samtaleverktøy om kosthold»

Takk for at du tar deg tid til å besvare det vedlagte spørreskjemaet om «Kosthold blant barn i 2- års alder». **Det er viktig at du besvarer spørreskjemaet så snart barnet har besøkt 2 års konsultasjonen på helsestasjonen.**

Straks spørreskjemaet er besvart – legg det da i vedlagte ferdig frankerte svarkonvolutt og send det til Bettina Holmberg Fagerlund ved Høgskolen i Oslo og Akershus.

Les informasjonen på første side i spørreskjemaet før du starter utfyllingen. På siste side i spørreskjemaet finnes eksempel på utfylling av enkelte spørsmål.

Spørreskjemaet er påført et svarnummer for å ivareta din anonymitet. Kun Bettina Holmberg Fagerlund og unntaksvis hennes veiledere professor, helsesøster Kari Glavin; professor, helsesøster Sølvi Helseth; og professor Lene Frost Andersen har tilgang til koblingen mellom svarnummer og opplysninger om ditt og ditt barns navn. Dette trenger vi av praktiske grunner får å få sendt ut spørreskjemaer. Alle opplysninger behandles konfidensielt.

Vi antar at du vil bruke omtrent 40 min. på å fylle ut spørreskjemaet. Spørreskjemaet kan virke omfattende siden det prøver å belyse kostholdet fra ulike vinkler. Det er derfor viktig at du forsøker å svare på alle spørsmålene i spørreskjemaet.

Vi viser for øvrig til tidligere utdelt informasjonsskriv om forskningsprosjektet. Forskningsprosjektet er godkjent av Regionale komiteer for medisinsk og helsefaglig forskningsetikk (REK).

Med vennlig hilsen

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E-post: Bettina.Fagerlund@hioa.no

Bildehefte
Matmengder til barn

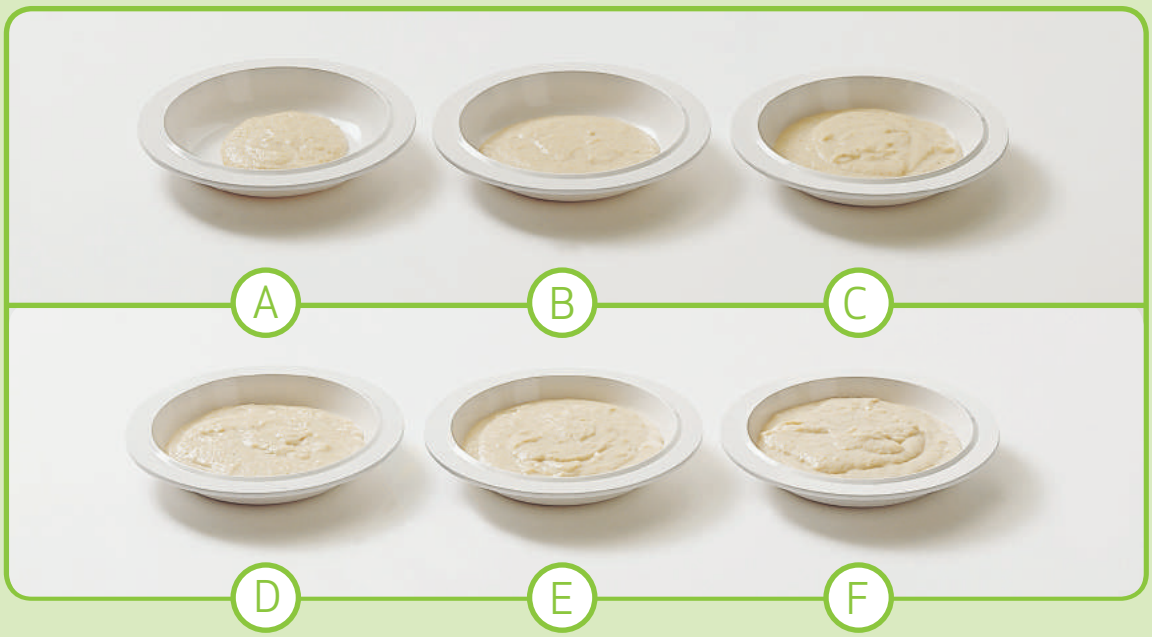
Bildene i dette heftet
er tenkt som en hjelp til å
oppgi hvor mye barnet vanligvis
drikker eller spiser pr. gang.
Bildene består av 4 – 6 alternativer
merket A, B, C, D, (E, F). Velg det
alternativet som stemmer best med den
mengden barnet vanligvis spiser,
og kryss av i spørreskjemaet.
Omrisset av tallerkenen på
bildene er gjengitt i full
størrelse på denne siden.

UNIVERSITETET I OSLO
Mattilsynet
Sosial- og helsedirektoratet

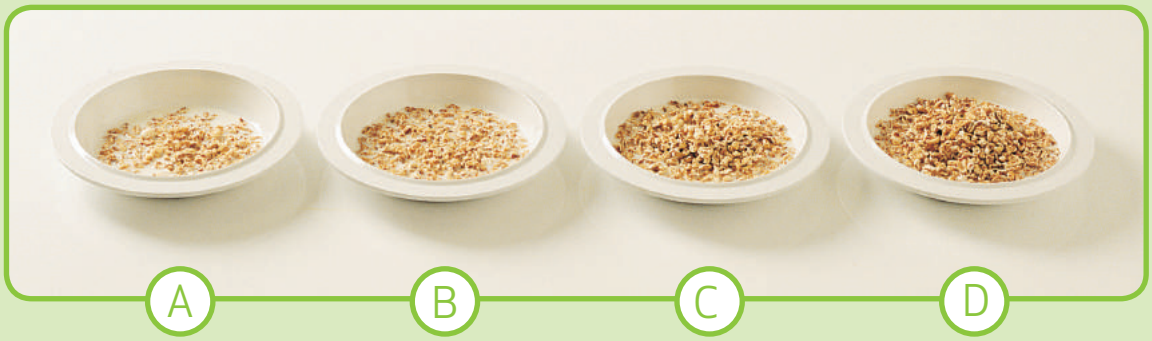
1. Drikke (melk, vann, saft, juice o.l.) på flaske

2. Drikke (melk, vann, saft, juice o.l.) i glass

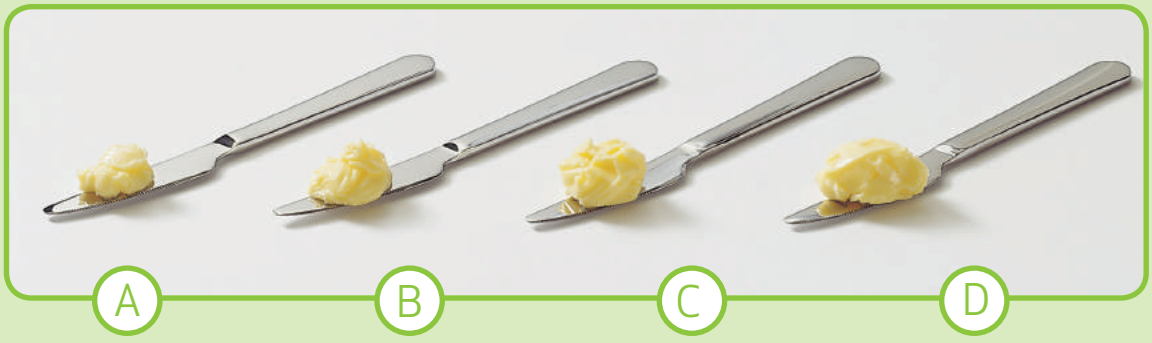
3. Grøt



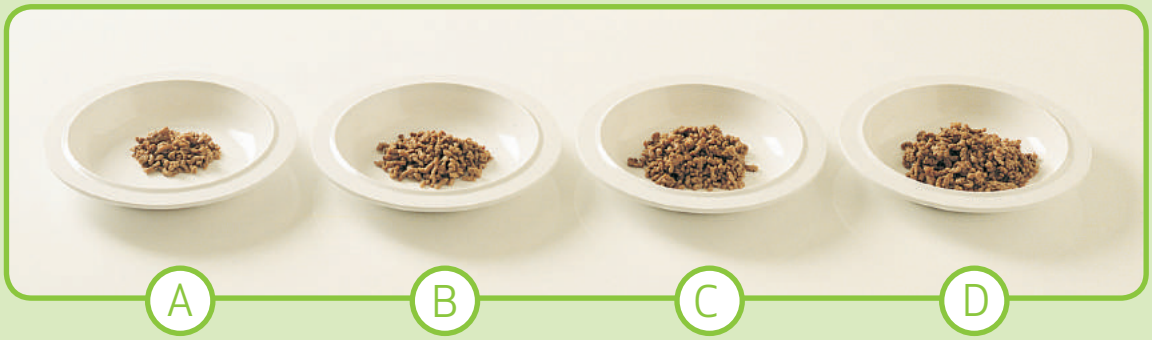
4. Kornblanding, gryn o.l. med melk



5. Margarin/smør på brød

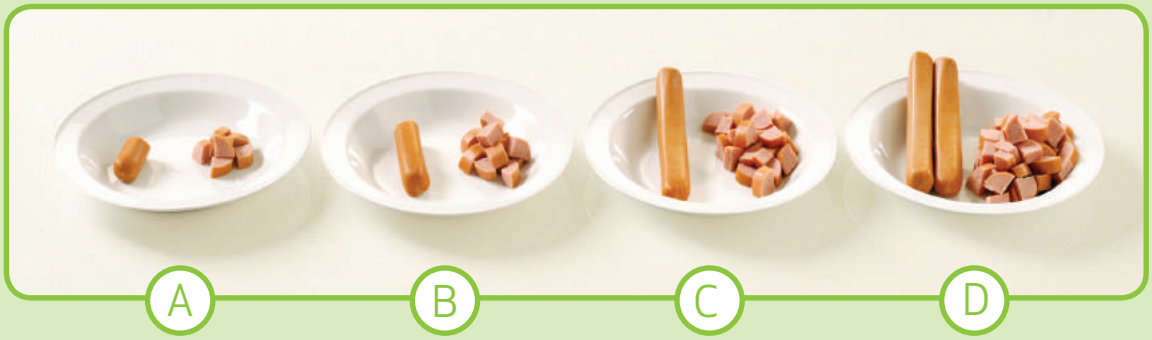


6. Kjøtt

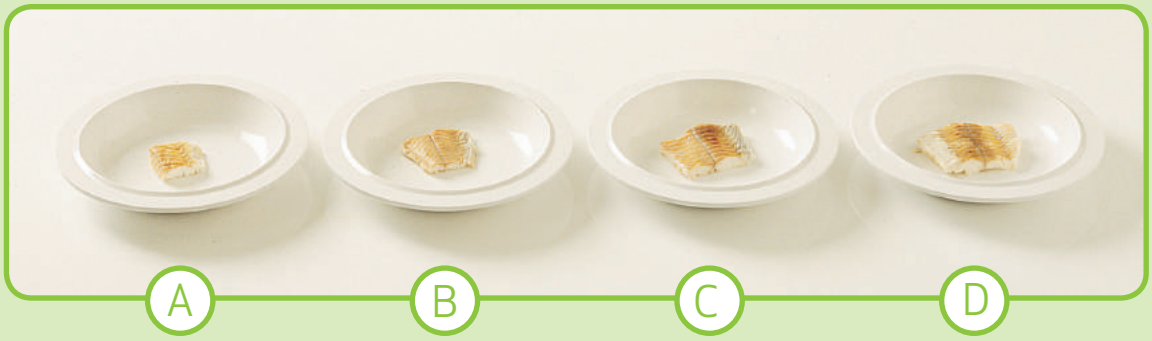


7. Pølse

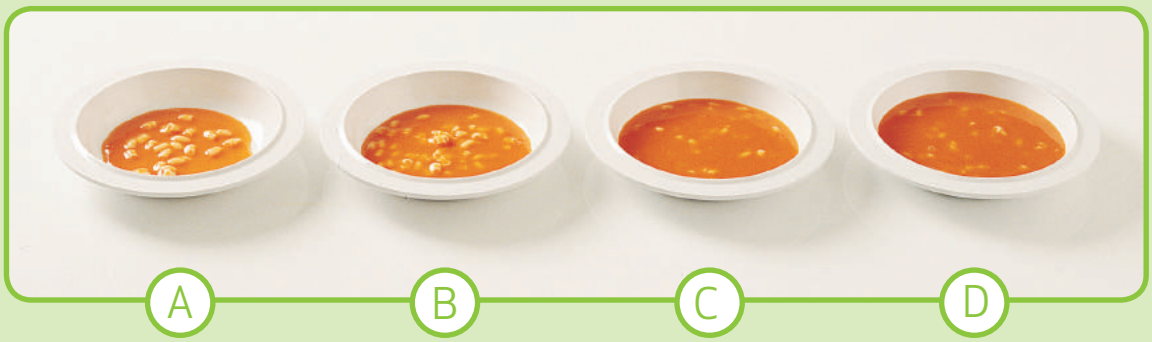
Samme mengde pølse er vist i to forskjellige former, hel eller i terninger.
Velg én av formene når du bestemmer porsjonsstørrelse.



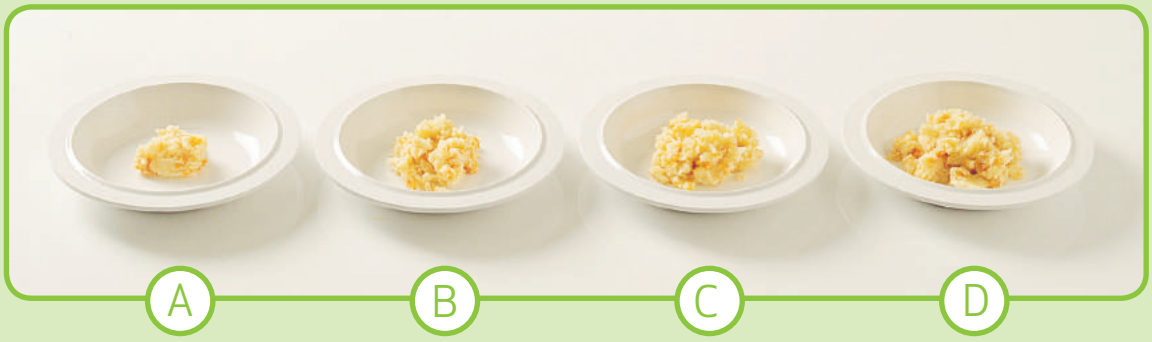
8. Fisk



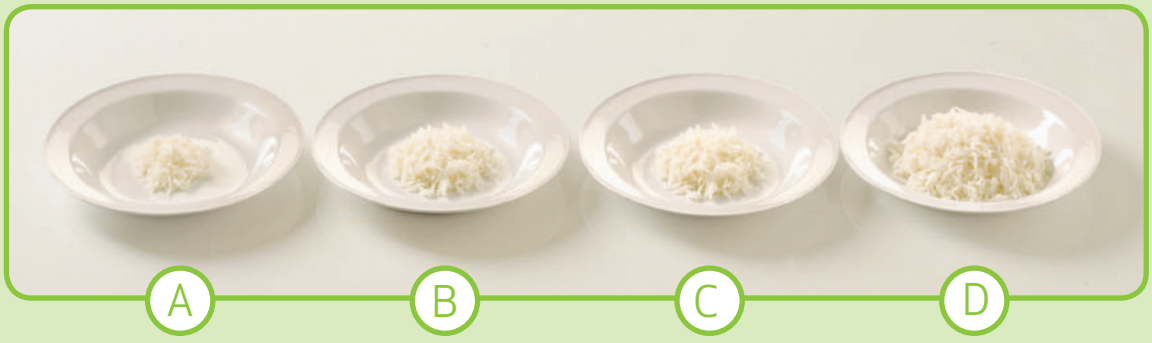
9. Suppe



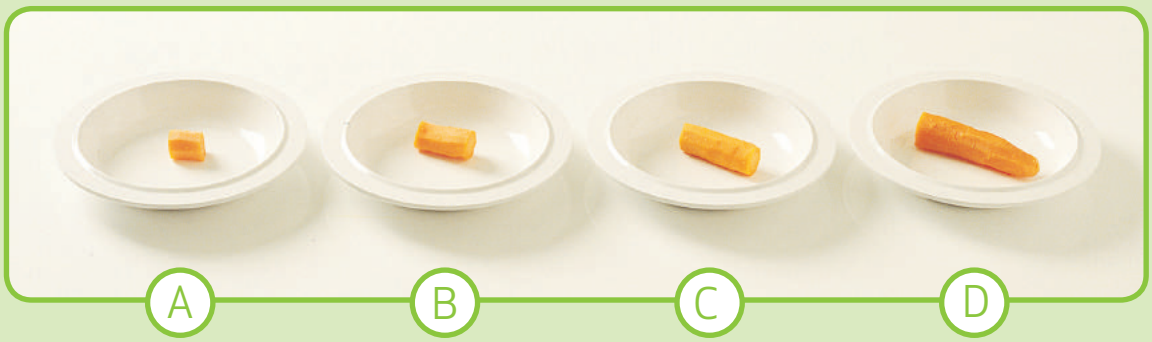
10. Potet-/grønnsaksmos



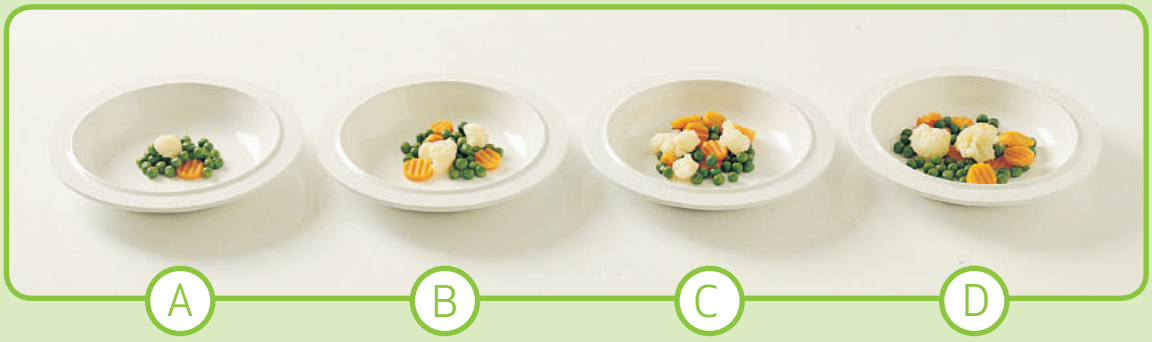
11. Ris, spaghetti o.l.



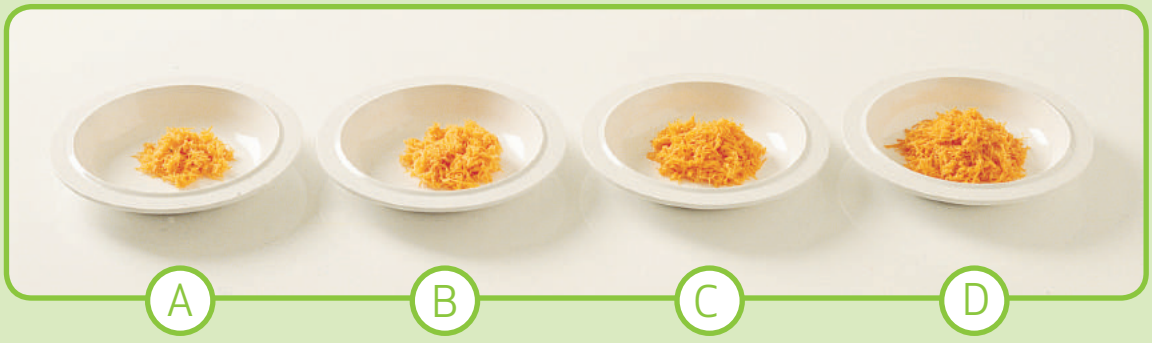
12. Grønnsaker



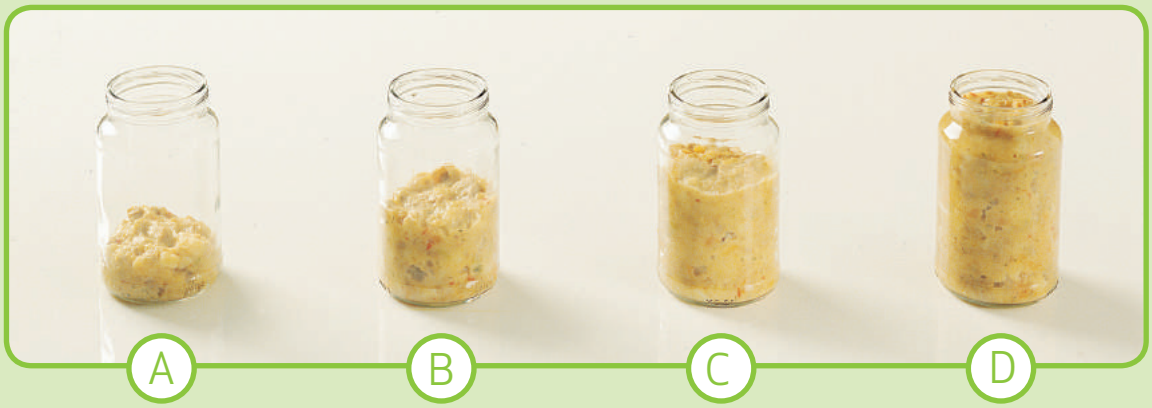
13. Grønnsaksblanding



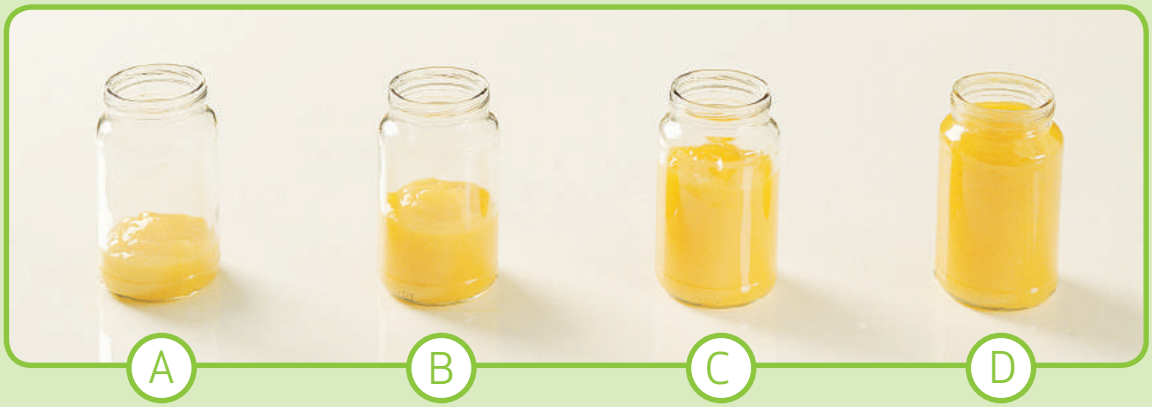
14. Råkost



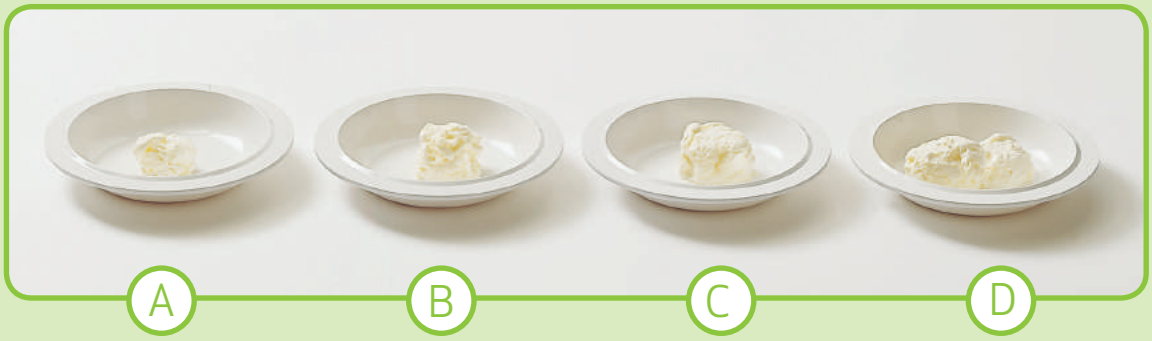
15. Middagsmat på glass (stort glass 195 g)



16. Frukt/bærmos



17. Is o.l.



Papers

Paper I

Holmberg Fagerlund, B., Helseth, S., Owe, J., & Glavin, K. (2017). Counselling parents on young children's healthy diet: A modified scoping review. *Journal of Clinical Nursing, 26*(23-24), 4039-4052. DOI: **http://dx.doi.org/10.1111/jocn.13892**

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REVIEW

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Counselling parents on young children's healthy diet: A modified scoping review

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Aims and objectives: To map and describe key information in existing research about counselling of parents of children aged 0–2 years on the child's healthy diet in preventive healthcare settings, particularly in public health nursing.

Background: Many parents are likely to be concerned with their infant's food-related happiness "here and now," disregarding the child's long-term health and development related to feeding practices. Hence, a focus on counselling parents in considering young children's healthy diet is important.

Design: A modified scoping review with an inductive qualitative content analysis of selected empirical studies.

Methods: Systematic searches in EMBASE (1996–2015 Week 46), Ovid Nursing Database (1946–2015 November Week 1), Ovid MEDLINE and Ovid OLDMEDLINE (2000—18 November 2015) and CINAHL (2000—22 December 2015), using search terms based on aims.

Results: Eight included studies, with participants per sample ranging from 19–>500. Research designs were focus group discussions and/or interview study (n = 2), cluster-randomised trials (n = 2), randomised controlled trials (n = 2), a follow-up interview study (n = 1) to a previous randomised controlled trial and a cross-sectional electronic questionnaire study (n = 1). The studies included a total sample of 2,025 participants, 42 of them in interview studies. Findings indicate parents' perceptions of inconsistency, misconceptions and uncertainty related to the recommendations on child feeding from the authorities. Thus, adapted advice could impact healthier child diet. Maternal knowledge on child feeding and reduced use of food as a reward are mediators for improved diet quality in children.

Conclusions: Counselling on young children's healthy diet should be anticipatory, consistent and adapted to the family.

Relevance to clinical practice: Due to inconsistent recommendations and omitted focus on anticipatory counselling on child feeding, parents might perceive pressure and uncertainty related to the child's diet.

KEYWORDS
child health services, health visitor, infant nutrition counselling, public health nurse, scoping review

1 | INTRODUCTION

Good infant and toddler feeding practices are essential to the health and development of children (Gidding et al., 2005). Developing healthy eating habits early in life might prevent diet-related diseases later on and in adulthood (Schwartz, Scholtens, Lalanne, Weenen, & Nicklaus, 2011). In addition, health behaviours established in childhood tend to persist into adulthood (Craigie, Lake, Kelly, Adamson, & Mathers, 2011; Nicklaus & Remy, 2013).

Infants' development of eating habits ranges from breastfeeding or formula milk initiation to the introduction of solid foods and the successive transition to family food habits. Weaning or the gradual introduction of beverages and foods other than breastmilk or commercial infant formula starts when milk is no longer nutritionally sufficient for the child (Schwartz et al., 2011).

The World Health Organization (WHO) (2009, 2016) recommends initiation of breastfeeding within one hour of the child's birth. Exclusive breastfeeding should continue for the first six months of life. After this, WHO recommends introducing nutritionally adequate and safe complementary (solid) foods together with continued breastfeeding up to two years and beyond (World Health Organization, 2016).

Parents usually do not need to do anything to help a child to like unfamiliar sweet or salty foods as infants have innate predisposed preferences for sweetness and saltiness. Children's ready acceptance of these tastes may promote diets too high in sugar and salt. Preferences for other new flavours, for instance bitter- or sour-tasting foods, need to be learned (Birch & Ventura, 2009). Breastfeeding may contribute to the child's initial acceptance of food, for instance bitter-tasting vegetables, if the breastfeeding mother has regularly eaten similar-tasting food (Forestell & Mennella, 2007).

There is a period, particularly in the second year of life, when children may have a tendency to avoid novel foods (neophobia). This time is also crucial for the child's transition to the family's food (Cashdan, 1994; Scaglioni, Salvioni, & Galimberti, 2008). Parental food preferences and eating together are highly influential in modelling good eating habits for the child. Together with evidence that repeated taste exposure might increase acceptance of healthy foods, these findings should regulate guidance given to parents in the child's early years (Scaglioni et al., 2008). Thus, an optimal introduction of weaning foods will impact the development of healthy eating habits (Birch & Ventura, 2009). Simultaneously, no discussion of feeding is complete if the social context of eating and meal times are ignored (Gottesman, 2002).

The development of children's food preferences is complex, involving an interplay of congenital, familial and environmental factors. Not all of these components are likely to promote a healthy and varied diet. Parents employ a variety of strategies to influence their children's eating habits. Some of these may even be counterproductive (Scaglioni et al., 2008).

There are international and national recommendations and guidelines to guide parents in the transition from milk to solid food. These guidelines differ and they contain culture-specific recommendations that might differ across countries (Schwartz et al., 2011). Guidance for parents should include children's development patterns of eating skills and focus on food intake in the family context. Easy-to-use information on aspects such as appropriate portion sizes for children and suggestions on the timing and frequency of meals are essential (Scaglioni et al., 2008).

A previous study by Schwartz et al. (2011) analysed feeding guidelines from different countries in the period from the beginning of complementary feeding until the child was 3 years old. This study indicated that well-covered themes in the feeding guidelines were a focus on food exposure, the role of variety in food and parental styles. Other themes such as development of the child's autonomy, the optimisation of food variety, acceptable levels of sweet and salty foods and how to cope with the child's food refusal were rarely included in the guidelines. The suggestion, based on this, was that feeding guidelines should give more practical tips to parents to help them establish responsive feeding behaviour in relation to their child (Schwartz et al., 2011). However, there is a gap between evidence on best practice from relevant interventions on child feeding and the advice parents receive on this topic (Vereijken, Weenen, & Hetherington, 2011).

A recently published systematic review on the effectiveness of universal parental support interventions addressing children's dietary habits, covering the period from 1990–2013, includes no cases with study participants aged 2 years or younger throughout their participation in the intervention (Kader, Sundblom, & Elinder, 2015). In a Cochrane Collaboration review, "Interventions for increasing fruit and vegetable consumption in children aged 5 years and under," only one of the included studies targeted children younger than 2 years throughout the intervention period (Wolfenden et al., 2012). Confirming this lack of study participants aged 2 years or younger in research, Birch and Doub (2014) emphasise the present limited evidence base with regard to infants and toddlers when it comes to

What does this paper contribute to the wider global clinical community?

- Existing research on counselling parents of children aged 0–2 years on the child's healthy diet in preventive healthcare settings reveals many challenges perceived by the parents in relation to recommendations and counselling from health authorities about these themes.
- The parents might perceive that they are in a position between the health authorities' recommendations and diverging influences from relatives or social pressure about the child's diet.
- Findings from research reveal perceptions among parents of inconsistency related to recommendations about the child's food and feeding practices and this might cause uncertainty, misconceptions and social pressure.

how and what children learn about food and their eating behaviour. Additionally, there is a mismatch between what feeding guidelines from authorities advise parents in relation to "when, what and how" to feed children during the weaning period and what parents actually do (Vereijken et al., 2011).

Accordingly, as an example of the latter, a qualitative systematic review of infant feeding practices in transitioning from milk feeds to family foods by Harrison, Brodribb, and Hepworth (2017) indicated how mothers' pursuit of the child's happiness could lead many mothers to disregard feeding guidelines. For instance, a consequence could be introducing solids earlier than indicated in feeding guidelines and feeding to keep the infant happy, while ignoring infant satiety cues. Thus, the parents seemed to be more concerned with the "here and now" regarding food and feeding practices than the health and development of the child later on. This highlighted the importance of further research to tease out this phenomenon, in an effort to support parents in considering long-term health based on feeding practices regarding their child (Harrison et al., 2017). In this connection, an applicable approach could be to explore aspects of counselling parents on the child's healthy diet.

1.1 | Aim

Based on the above, the aim of this modified scoping review was to map and describe key information in existing research focusing on counselling of parents of children aged 0–2 years on the child's healthy diet in preventive healthcare settings, particularly within a context of public health nursing.

2 | METHODS

2.1 | A modified scoping review framework

The methodological framework of a modified scoping review strategy was chosen because of its usefulness for examining the extent, range and nature of research by mapping fields of study where it seems difficult to visualise the range of research that might be available. The six-step methodological approach described by Arksey and O'Malley (2005) was chosen to guide the review process. The process of a scoping review can be used to gain a broad overview of a topic and is independent of the study design in the included studies (Arksey & O'Malley, 2005). This was appropriate for the field of interest, because of the scarcity of previous studies and a wish to identify all relevant research-based studies. Simultaneously, consistent with the scoping review methodology, there was an agreement not to perform any formal assessment of methodological quality in included studies (The Joanna Briggs Institute, 2015). The reason for choosing a modified strategy was a wish to limit the review to research-based articles published, in contrast to the current scoping study method guided by a requirement to identify all relevant literature (published and unpublished) (Arksey & O'Malley, 2005). In addition, the optional stage 6: consulting practitioners to contribute to the literature review was omitted (Arksey & O'Malley, 2005). This was because familiarity with the practice field was assumed due to three of the authors' professional background in public health nursing and recently completed research within similar fields of practice. Besides, a "Reviewers' Manual" developed by The Joanna Briggs Institute (2015) was considered applicable in order to provide a framework for a comprehensive report of the main elements under review. Moreover, an analysis based on a data extraction process referred to as *charting the results* from the literature review provides the reader a descriptive summary of key information from the included studies that aligns with the aim of the current study (The Joanna Briggs Institute, 2015). This charting was done by reading through the articles several times and then extracting descriptive contents from each article. An inductive qualitative content analysis approach was chosen because its usefulness related to an evidence base about the current topic, which may still be regarded as sparse (Elo & Kyngäs, 2008).

2.2 | Identifying relevant studies

2.2.1 | Inclusion and exclusion criteria

The sources included were peer-reviewed primary research papers in English, available on the current topic, and without any special methodology requirement. Counselling themes other than food and feeding, such as activity interventions or general parenting, were not included. An absolute criterion for inclusion was the child's age of 2 years or younger throughout the research process. Interventions included did not introduce any special diet or treatment, for instance overweight and/or obesity treatment. Studies expressing an overweight or obesity prevention focus were included if the other inclusion criteria were met. Studies targeting challenges in developing countries, for instance food shortages or famine, were excluded. Additionally, studies focusing exclusively on breastfeeding or solely related to formula feeding or opening for an antenatal focus were excluded.

2.2.2 | Search strategy

The systematic searches were performed in the databases EMBASE on 18.11.2015; "Time frame: 1996–2015 Week 46," Ovid Nursing Database on 18.11.2015; "Time frame: 1946–2015 November Week 1," Ovid MEDLINE and Ovid OLDMEDLINE on 18.11.2015; "Time frame: 2000—November 18, 2015," and CINAHL on 22.12.2015; "Time frame: 2000–31 December 2015".

In addition, records were identified in reference lists in applicable publications identified through the database searching. Hand searching was performed from 1 June 2015–1 June 2016 in the journals Pediatric Obesity and Maternal and Child Health Nutrition and in the databases Obesity+—Obesity Alerting system (obesityplus@mcmasterhkr.com) and Scopus.

Supplementary information about the search process may be obtained from the corresponding author.

2.2.3 | Combinations of search terms and the number of results obtained in each database

The combinations of search terms, limiters, Boolean operators and the number of results in each database are listed in Table 1.

2.2.4 | Review decision process

Figure 1 summarises the article selection process in a flow chart. The identification from the systematic searches resulted in 305 records from the databases (Table 1). First, the titles and abstracts were screened and nonresearch papers were removed. Twenty-five additional records were identified through reference lists and hand searching in the databases and journal alerts mentioned. Articles that did not meet the inclusion criteria, based on titles and abstracts, were then removed. After thorough reading of 29 articles, eight articles were included based on their relevance to the inclusion and exclusion criteria. Five of these articles had first been identified through searching in databases.

From 19 to more than 500 participants participated in each of the studies included. Research designs represented were as follows: focus group discussions and/or interview study (n = 2), cluster-randomised trials (n = 2), randomised controlled trials (RCTs) (n = 2), a follow-up study for a previous RCT (n = 1) and a cross-sectional electronic questionnaire study (n = 1). There was a total sample of more than 2,025 participants in the included studies; 42 of them were participants in the focus group/interview studies. Three of the studies had a perspective of childhood obesity prevention, while five emphasised a more general health promotion and healthy eating perspective. A majority, or five of eight of the studies, made use of a theoretical framework like social cognitive theory, a social support theoretical model, attachment theory and the theory of planned behaviour. All studies offered explanations on how the particular study could be beneficial and suggested themes for new studies. The controlled studies used mainly recognised, standardised and validated outcome measures. Different perspectives of promoting healthy diet from the perspectives of either parents or parents and health professionals were illuminated in these studies.

2.3 | The inductive qualitative content analysis performed

Screening of the records based on titles and abstracts was done via two authors' independent reading through the print including the results from the database search. If a relevant record had no abstract available in the print, this article was considered in full text. Records identified from sources other than through the systematic database search were read in full text in order to consider their applicability. The 29 full-text articles to be assessed for eligibility were then organised in a draft charting table in order to record the key information from each article. This compilation of articles was the basis for discussion when the authors negotiated which articles were to be included. A compilation of articles as described can be seen as analogous to *group* data in the content analysis process, as described by Elo and Kyngäs (2008). To be aware of the content inductively, the authors then read through the articles several times. The next step was to interpret the meaning in the articles in order to get an abstraction. This abstraction is explained as formulating a general

TABLE 1 Combinations of search terms, limiters, Boolean operators and the number of results obtained

Database	Combinations of search terms	Number of results
EMBASE/	Counseling OR Health Education OR Health Communication OR teaching OR guid*; AND	49/
Ovid Nursing Database/	Nurses, Community Health OR Community Health Nursing OR Public Health Nursing OR Child Health Services OR health visitor* OR well baby clinic* OR maternal and child health service* OR maternal and child health center* OR Ambulatory Care Facilities OR Community Health Services OR Primary Health Care; AND	122/
Ovid MEDLINE and Ovid OLDMEDLINE	Food Habits OR Infant Food OR Infant Nutrition OR Feeding Behavior OR Vegetables OR feeding practice*; AND Parents OR Mothers OR Fathers	92
CINAHL	Counseling OR Health Education OR Health Communication OR teaching OR guid*; AND Nurses, Community Health OR Community Health Nursing OR Public Health Nursing OR Child Health Services OR health visitor* OR well baby clinic* OR maternal and child health service* OR maternal and child health center* OR Ambulatory Care Facilities OR Community Health Services OR Primary Health Care; AND Food Habits OR Infant Food OR Infant Nutrition OR Eating Behavior OR Vegetables OR feeding practice*; AND Parents OR Single Parent OR Mothers OR Fathers	42
Database	**Limiters and Boolean operators**	
EMBASE	"infant to one year" OR "preschool child 1 to 6 years"	
Ovid Nursing Database	"infant (1 to 23 months") NOT "Breastfeeding"	
Ovid MEDLINE and Ovid OLDMEDLINE	"infant (1 to 23 months)" AND yr=2000-Current" NOT "Breastfeeding"	
CINAHL	"Infant: 1-23 months" AND "Published 20000101-20151231" NOT "Breastfeeding"	

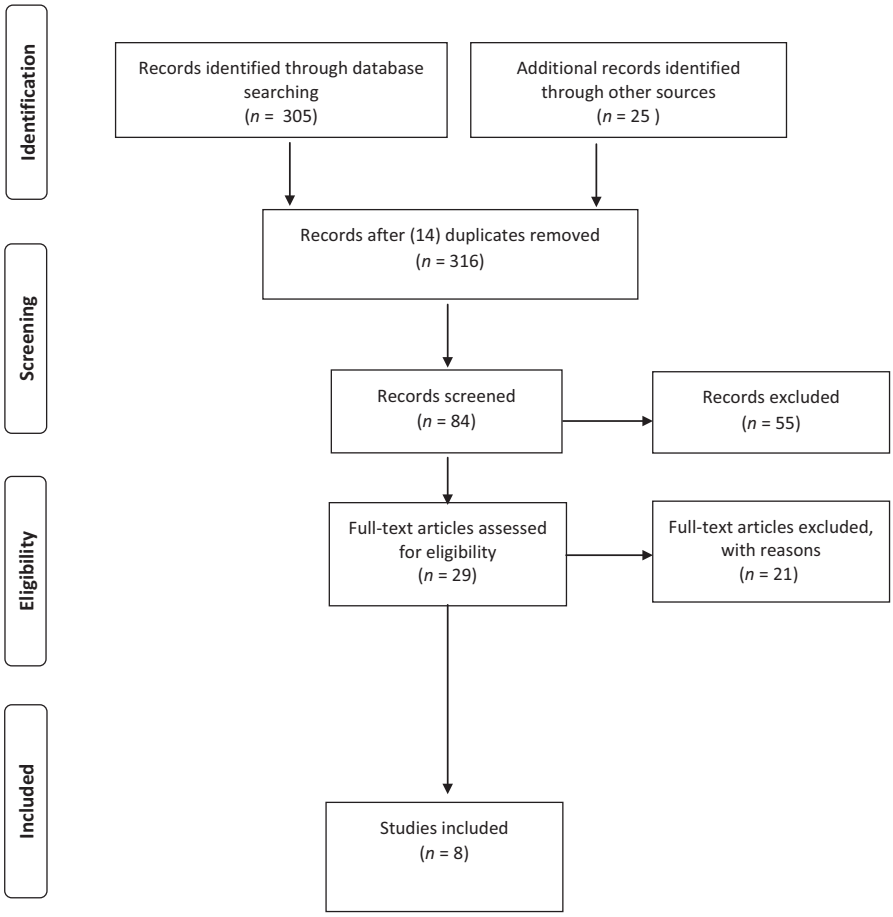

FIGURE 1 A flow chart detailing the review decision process. This flow chart is based on PRISMA 2009 Flow Diagram (Moher, Liberati, Tetzlaff, & Altman, 2009) and modified for the scoping review process in accordance with advice from the reviewers' manual of The Joanna Briggs Institute (2015, p. 21)

description of the research topic through generating categories (Elo & Kyngäs, 2008). The generated categories of this scoping review are presented as *the main findings* and will be presented under the results section.

3 | RESULTS

The subheadings in this section reflect the seven main findings (Table 2) that emerged from the included studies. Table 3 presents the extracted information from the eight included studies, placed in a matrix.

3.1 | Parental perceptions related to recommendations about the child's diet

Based on a questionnaire study, Arden (2010) reports how parents perceive inconsistency in recommendations on child feeding from the authorities. The parents saw the recommendations as either rigid, more tailored in terms of guidance from health professionals, or the mothers' own perceptions of putative weaning signs from their infants. Some experienced concern or even felt guilt when deciding on when to start giving solid foods to the child. Poor rating of support and advice from the health visitor among mothers having a high level of education usually indicated a later introduction of solid foods (Arden, 2010). A study based on focus groups among low-income mothers of children younger than one year revealed an attitude that they were not convinced of any specific age of the child at which to start giving solid foods (Horodynski et al., 2007).

Parental scepticism related to the authorities' recommendations about the child's diet was visible in findings from a focus group study by Lakshman et al. (2012). The mothers appeared to have different understandings and beliefs from healthcare providers about what is crucial about food and feeding practices related to the baby's weight gain. They also felt sceptical about the healthcare providers' use of the growth percentiles of children. Because they perceived that the child's genetic disposition would determine the child's growth anyway, they saw no reason to use standardised graphs (Lakshman et al., 2012).

3.2 | Parental misconceptions or uncertainty concerning the child's diet

Parental misconceptions and uncertainty were factors likely to impact the child's diet. For example, some mothers expressed a belief that it is not possible to overfeed babies (Lakshman et al., 2012). Findings from a focus group study indicate that mothers perceived having knowledge about hunger and satiety cues in their infant, but at the same time they expressed uncertainty about how often an infant, 4 months old, needs to get food. They also tended

TABLE 2 Overview of seven main findings from the included studies

Main findings	The parents perceive inconsistency in the recommendations on child feeding from the authorities	Parental scepticism related to the authorities' recommendations about the child's diet	Parental misconceptions or uncertainty may impact the child's diet	The parents perceive influence from relatives and friends having impact on the child's diet	Maternal knowledge on child feeding advice as a mediator of, or related to improved diet quality in children	The mother's lower use of food as reward as mediator for improved diet quality in children	Anticipatory guidance reflecting the particular mother or particular child may impact healthier child feeding habits
Studies where the main findings mentioned appear	Arden (2010)	Horodynski et al. (2007) Lakshman et al. (2012)	Horodynski et al. (2007) Arden (2010) Scheiwe et al. (2010) Lakshman et al. (2012)	Horodynski et al. (2007)	Watt et al. (2009) Scheiwe et al. (2010) Spence et al. (2014)	Spence et al. (2014)	French et al. (2012) Daniels et al. (2013)

to have misconceptions about what constitutes solid food. They might thus identify, for instance, cereal in a bottle, applesauce and yoghurt as nonsolid foods (Horodynski et al., 2007). Scheiwe, Hardy, and Watt (2010) reported another probable misunderstanding. Children consumed potato chips because their mothers might have regarded chips as vegetables.

Arden (2010) indicates how mothers, when they perceived signs from the baby that it was ready for solid foods at an earlier age than 6 months, probably found it demanding to follow the recommendations. This entails waiting until 6 months before introducing solid foods. Some mothers also reported a feeling of regret about weaning their previous children too early and that they now, with the present child, wanted to make different decisions on later introduction of solid foods (Arden, 2010).

Hence, study findings from Horodynski et al. (2007) bring up the importance of increasing the mothers' self-efficacy so that they could feel confidence about their own ability to adhere to the evidence-based nutritional recommendations from the authorities.

3.3 | The parents' perceived influence or social pressure on the child's diet

Moreover, findings from a focus group study among mothers with low income revealed an attitude that they were not convinced of any specific age of the child at which to start giving solid foods. Hence, the mothers' beliefs about when to start feeding solids, earlier than recommended and irrespective of their babies' objective readiness for this, were often influenced by their subjective norms and based on perceived social pressure from relatives (Horodynski et al., 2007).

3.4 | Maternal knowledge on child feeding and lower use of food as reward

A previous health promotion intervention (The Melbourne Infant Feeding Activity and Nutrition Trial) significantly improved the diet quality of children aged 18 months (Lioret, McNaughton, Spence, Crawford, & Campbell, 2013). A consecutive study to this intervention was aimed at testing whether correlates like the mothers' improved knowledge of child feeding and nutrition, child feeding practices, mothers' self-efficacy for promoting healthy eating and modelling could act as mediators of the intervention effect on improving children's diet quality. Based on this, two mediators of improving child diet quality were found: (1) higher maternal knowledge of child feeding advice and (2) lower maternal use of food as reward. However, neither maternal self-efficacy nor the mother's own dietary intakes were mediators, although they were associated with the quality of the child's diet (Spence, Campbell, Crawford, McNaughton, & Hesketh, 2014).

Scheiwe et al. (2010) evaluated long-term effects from a peer-led, social support infant feeding intervention 4 years earlier (Watt et al., 2009). Long-term impact was related to healthier beverages consumed by children in the intervention group, and the nutritional

TABLE 3 Key information from the included studies, chronologically from newest to oldest

Study	Purpose	Study design	Sample	Intervention	Outcome measures	Main findings
Spence et al. (2014; Australia)	To test whether correlates as maternal knowledge of child feeding and nutrition, maternal child feeding practices, maternal self-efficacy for promoting healthy eating and modelling and maternal dietary intakes would act as mediators of the effect of an intervention to improve child diet quality. And to assess which components of maternal behaviour were impacted by the intervention and acted as mediators of the intervention effect on child diet quality	A cluster-randomised controlled trial. An intervention study	First-time parents (English-speaking) (intervention $n = 262$, control $n = 266$) recruited randomly from first-time parents' groups, which are run within local government areas, by maternal and child health nurses	The intervention involved six interactive sessions over 15 months, from when children were 4 months of age. This was anticipatory guidance promoting division of responsibility in child feeding and emphasising parenting skills. Parents in the control arm received quarterly newsletters on topics unrelated to the intervention, in addition to the usual care available from their maternal and child health nurse	Outcome measures were related to demographic data collection, maternal mediators, maternal knowledge of child feeding intervention messages, maternal feeding practices, maternal self-efficacy for healthy child feeding, maternal diet, child dietary index	No differences in demographic characteristics in the groups appeared at baseline. Higher maternal knowledge of child feeding intervention messages, and lower maternal use of food as a reward in the intervention arm, mediated the effect of the intervention (= Melbourne InFANT PROGRAM on child health diet quality). Maternal self-efficacy and dietary intakes did not act as mediators, but they were associated with child diet quality
Daniels et al. (2013; Australia)	To evaluate outcomes of a universal intervention; first-time mothers receiving anticipatory guidance on early feeding practices which would demonstrate their increased use of: (1) food exposure practices postulated to promote food preferences consistent with healthy dietary intake, and (2) responsive feeding behaviours that support child self-regulation of food intake. And as an secondary hypothesis: (3) Lower obesity risk at 2 years of age	A randomised controlled trial	First-time mothers (English-speaking, ≥ 18 years old and their healthy term infants. At the universal community child health services ($n = 541$) and their children 4 months old at baseline and up to 2 years old at endpoint. The mothers should not have self-reported history of domestic violence or eating disorders among other things	Control group was given care as usual. Response to existing need/problem and hence did not receive anticipatory guidance. Intervention was formed by three theoretical models. (1) Attachment theory—to help mothers to be sensitive on child's cues. (2) Anticipatory guidance on what is expected. (3) A social cognitive approach—to promote mothers' self-efficacy competence. Two intervention modules were carried out when the child was aged 4–7 months and 13–16 months. Each module comprised six interactive group sessions of 1–1.5 hr duration, delivered over 12 weeks. Sessions were facilitated by a dietitian and a psychologist	Demographic and behavioural data using self-completed questionnaires. Child feeding questionnaire—to assess feeding practices. Parental feeding style questionnaire—to assess parental use of responsive feeding, and anthropometric measurements (height and weight were used to calculate BMI-for-age z scores)	Anticipatory guidance on early feeding, tailored to developmental stage, increased use of protecting feeding practices in first-time mothers. This potentially supports the development of healthy eating and growth in their 1- to 2-year-old children. Anthropometric differences were in the expected direction, but did not achieve statistical significance. Mothers in the intervention group reported less controlling feeding practices, more likely to enhance food acceptance

(Continues)

TABLE 3 (Continued)

Study	Purpose	Study design	Sample	Intervention	Outcome measures	Main findings
French et al. (2012; USA)	To evaluate the effect of two anticipatory guidance (AG) styles (maternal-focused or infant-focused) directed at mothers of infants (newborn to 6 months) on their obesogenic feeding behaviours when the child turns 1 year compared with routine advice as outlined in "Bright Futures" (BF)	A cluster-randomised trial, a pilot study	A total of 184 mother/infant dyads completed the study at well-child clinics in low-income metropolitan areas in Columbus, Ohio	Three types of interventions, designed to be delivered at the paediatric well-child visits: (1) Maternal-focused intervention (MOMS)—approached child obesity prevention via AG aimed at maternal eating habits. (2) Ounce of Prevention (OP)—AG given to mothers—when mothers got a detailed programme of infant feeding serving size and tips for introducing different foods for the infant. The mothers were encouraged to allow the infant determine when he or she is full. (3) The Control group = Bright Futures (BF). This was a usual care condition for children in the first year of life, and was based on traditional AG: recommending breastfeeding, the introduction of infant food and table food, avoidance of honey and food that may lead to choking, etc. Physicians, nurses and medical assistants were trained by research staff in implementing the appropriate AG programme	At baseline (child ≤ 2 months), mothers were interviewed by research staff using survey instruments, and when their infants were 6 and 12 months old. Information from the mothers included: self-reported height, weight, demographics, family and personal health history of obesity-related diseases. Maternal nutritional intake, eating habits, tv watching during meals, health numeracy, maternal depression. Child variables were weights, lengths, infant nutrition information, child feeding behaviour	The mothers in both intervention groups (MOMS and OP) had healthier child feeding habits than those in the BF control group. The OP group reported fewer family meals than the other groups by age 12 months. Providing mothers with information aimed at changing their own eating patterns showed positive differences in infant feeding behaviours. Both intervention groups gave their infants less juice and more fruit servings than the control group. The maternal-focused group gave also more vegetables than the BF mothers
Lakshman et al. (2012; UK)	To explore the views of formula milk-feeding mothers and healthcare professionals on: 1) a recently developed programme for healthy growth and nutrition in	Focus group discussions and individual interviews. Analysis based on a framework approach to	Participants (mothers) in three focus groups, held at the Medical Research Council (MRC) Epidemiology Unit, Cambridge, were who were formula-feeding (n = 10)	Participants in focus groups were given "stimulus material" as PowerPoint slides. The in-depth, face-to-face individual interviews thematised the views from the professionals on their	A semi-structured topic guide was used and the participants were allowed to discuss what was of interest to them	Efforts to prevent childhood obesity have to address mothers' beliefs that babies cannot be overfed. Mothers and healthcare providers may have different motivation and understanding

(Continues)

TABLE 3 (Continued)

Study	Purpose	Study design	Sample	Intervention	Outcome measures	Main findings
	formula milk-fed babies; 2) the design of a planned trial; and 3) the usability of leaflets to the programme for healthy growth and nutrition during infancy	classify and organise data	Participation was based on self-selection. Seven health visitors, a community midwife and one mother participated in the interviews	support to mothers feeding their children		about the aim of the educational programme
Arden (2010; UK)	To get an in-depth understanding of the factors involved in the decision of the very low rates of adherence to the advice to delay weaning until 6 months.	A cross-sectional electronic questionnaire study	105 mothers with high level of education recruited via UK-based Internet parenting discussion forums	A questionnaire consisting of three sections and some open-ended questions. The three sections were as follows: general information, milk feeding and solid food feeding	The measures were related to four subthemes from the data: Recommendations, guidance and advice; Signs from the baby; Beliefs about solid foods; and Maternal considerations	The mothers faced a conflict in deciding when to feed their babies solid foods because of the recommendations to wait until 6 months and the perceived signs from the baby of being ready for solid foods at an earlier age. A later introduction of solid foods was associated with rating health visitor advice and support as poor
Scheiwe et al. (2010; UK)*	To evaluate the long-term effects of a peer-led infant feeding (/social support) intervention, delivered during the first year of life (4 –years earlier) by volunteers to improve infant feeding practices	A follow-up study for an earlier randomised controlled trial	Mother/child dyads (n = 55) from the originally allocated test group and mother/child dyads (n = 46) from the originally allocated control group. In two disadvantaged boroughs of London	Data collected through face-to-face interviews during a one-off home visit	Outcome measures: Nutritional data, oral health behaviour, mothers' nutritional knowledge and confidence, fruit and vegetable consumption of the child	Little evidence that the intervention had an important effect on children's current body mass index caries levels or fruit and vegetables consumption. However, mothers from intervention group had better nutritional knowledge and confidence. Children in intervention group were more likely to never drink squash and to consume more pure fruit juice
Watt et al. (2009; UK)*	To assess whether monthly home visits from trained volunteers could improve infant feeding practices at age 12 months	A randomised controlled trial	Women attending baby clinics with their infants were randomised to control group (n = 108) and intervention group (n = 104). This was in a disadvantaged part in the inner city of London	The intervention (based on social support theoretical model) consisted of monthly home visits from trained volunteers over a 9-month period and standard professional care (from health visitors and general practitioners) in the control group. The volunteers were encouraged to provide very practical support and to offer listening to worries and concerns of the	The primary outcome was vitamin C intakes from fruit or other nutrients. Secondary outcome: selected macro- and micronutrients, infant feeding habit, supine length and weight	No significant differences were found on intake of vitamin C from fruit or other nutrients. Intervention group was less likely to receive goat or soya milks at the first follow-up. At the second follow-up, intervention group was significantly less likely to use bottle. Intervention group children also consumed significantly more specific vegetables and fruits at both follow-ups. However, intervention group children

(Continues)

TABLE 3 (Continued)

Study	Purpose	Study design	Sample	Intervention	Outcome measures	Main findings
				mothers. Data were collected baseline at the infants' age of approximately 10 weeks, and subsequently at 12 and 18 months of age		consumed more chips (might be a confusion if this is considered a vegetable). No effect on breastfeeding duration or timing of weaning from the intervention
Horodynski et al. (2007; USA)	To assess knowledge, beliefs, family norms and attitudes of mothers about the introduction of solid foods and other infant feeding behaviours with their infants	Focus group discussions	Six focus groups (n = 23) with new low-income mothers of children under 1 year, enrolled in Medicaid	The moderator guide was to assess and understand how mothers viewed the American Academy of Pediatrics (AAP) recommendation of solid food introduction between 4 and 6 months, problems related to infant feeding and sources of infant feeding information	Maternal knowledge about infant feeding, maternal perceptions of applicability of infant feeding guidelines, and manner and type of information useful for infant feeding decisions emerged as themes. Implications of themes for informing an educational programme for mothers to delay the introduction of solid foods were discussed	Mothers had knowledge of infant hunger and satiety cues. However, infants frequently ate separately from their families, in front of television, not seated. Mothers knew developmental signs of readiness for solids, but relied on other indicators that babies needed cereal, including the diagnosis of acid reflux, infant not sleeping through the night. They expressed general support for health professional advice, but they also relied heavily on the advice from relatives and friends about feeding infants. They were not convinced that AAP recommendation on introduction of solids applied to all infants. Mothers found the potential harmful effects of early introduction of solids a more compelling message than the health benefits of waiting until 4-6 months. The mothers did not always use the same definition as the nurses when defining a solid food

*Reports in part from the same study/material.

knowledge and confidence among the mothers who had participated in the intervention 4 years earlier was better than in the control group (Scheiwe et al., 2010). Thus, based on these findings, maternal knowledge might act as mediator of, or is related to, improved diet quality in their children (Scheiwe et al., 2010; Spence et al., 2014).

3.5 | Anticipatory guidance reflecting the particular mother or particular child

Two of the reviewed articles point out how anticipatory guidance reflecting the particular mother or particular child might impact healthier child feeding habits than general advice about regular themes concerning food and feeding (Daniels, Mallan, Nicholson, Battistutta, & Magarey, 2013; French et al., 2012).

Daniels et al. (2013) conducted a randomised controlled trial to evaluate a universal intervention of anticipatory guidance given to first-time mothers on early feeding practices regarding their babies. The intervention aimed at promoting first-time mothers' self-efficacy, competence and confidence to adopt programme recommendations, helping first-time mothers to be sensitive to the child's cues regarding food and feeding, the child's exposure to different tastes and textures of food, positive parenting including for instance warmth and encouragement of autonomy in parenting and providing anticipatory guidance to the mother on what was expected regarding child development and feeding.

The mothers in the control group were given "care as usual" including response to their existing needs or problems with no perspective of anticipatory guidance. Findings from this trial indicated that the intervention mothers were more likely to consider their child as easy to feed than were mothers in the control group. This was despite the equal number of toddlers in the two groups reportedly often refusing food. The intervention mothers also reported more often than did the control mothers that the children themselves were mostly responsible for determining how much to eat (Daniels et al., 2013).

French et al. (2012) conducted a cluster-randomised trial pilot study with a three-armed approach. The study's aim was to evaluate the effect of two anticipatory guidance styles (either maternal- or infant-focused) directed at the particular mothers of infants (newborn to 6 months). These two anticipatory guidance styles were compared to routine advice (= usual care) given to the mothers in the control group. Routine advice was traditional anticipatory guidance about regular themes such as breastfeeding, food introduction, avoidance of honey and food that might cause choking, etc. Both intervention groups, either providing the mothers with information aimed at changing their own eating or encouraging them to allow their infant to determine when he or she was full, showed more positive infant behaviours and healthier child feeding habits than did the control group. Moreover, the participants in both intervention groups gave their infants less juice and more fruit servings than did the control group participants. The number of servings of vegetables to the child was higher among the mothers in the maternal-focused intervention group (French et al., 2012). To tailor the anticipatory guidance on early feeding in line with the child's developmental stages was part of the intervention conducted by Daniels et al. (2013). This kind of guidance was found to increase first-time mothers' use of "protective feeding practices" as opposed to feeding practices called "nonresponsive". Protective feeding practices potentially support the development of healthy eating and growth in 1- to 2-year-old children through less use of pressure and restriction (Daniels et al., 2013).

4 | DISCUSSION

Based on studies in the present review, supplying the mother or the caregiver of a child of 2 years or younger with applicable knowledge is central in all counselling on the child's healthy diet in preventive healthcare settings. Knowledge as easy-to-use information in daily life about, for instance, portion sizes and frequency of meals related to the age of the infant is also warranted from the mothers' point of view (Horodynski et al., 2007; Scaglioni et al., 2008). The mothers require advice about food and feeding to be consistent and adapted to the existing differences among their babies and different family situations (Lakshman et al., 2012). This might hinder inconsistency and scepticism perceived by some of the mothers when it comes to the authorities' recommendations on child feeding (Arden, 2010; Lakshman et al., 2012). Actually, the mothers' uncertainty may develop from perceived differences and inconsistency in nutritional advice derived (Arden, 2010). Findings in the included studies also indicate how misconceptions among the parents might impact the child's diet in a less healthy direction (Arden, 2010; Lakshman et al., 2012; Scheiwe et al., 2010).

A concern about how to decrease the existing gaps between evidence from well-known best practice interventions in infant feeding and what parents actually learn about these themes through counselling is pointed out by Vereijken et al. (2011).

In order to customise advice about food and feeding to the family situation, factors related to the parents are key components and thus to be taken into account. Nevertheless, findings from a previous study reveal that health personnel in a preventive healthcare setting disclose that they rarely ask about aspects such as food preferences of the family or the family situation in attempting to adjust their counselling about food and feeding practices (Holmberg Fagerlund, Pettersen, Terragni, & Glavin, 2016). By omitting these significant details in a healthcare setting, one might cause the parents to turn to advice from friends or relatives or even to perceive social pressure about when they should start giving solid foods to their infant. Hence, the parents could be exposed to subjective norms when making decisions instead of informed decisions about best practice founded on evidence-based recommendations and the infant's objective readiness for solid foods (Horodynski et al., 2007).

Daniels et al. (2013) introduce the concept of parental "protective feeding practices." This could be considered a contradiction to parents' use of "restrictive feeding practices," associated with overeating and poor self-regulation of energy intake in preschool

children (Savage, Fisher, & Birch, 2007). *Protective feeding practices* are a result of dietary counselling tailored to the child's developmental stages and consist of supporting the caregiver through anticipatory guidance (Daniels et al., 2013). This can be viewed in context with a proposition that future interventions on child feeding should combine social support with educational content (Mitchell, Farrow, Haycraft, & Meyer, 2013). An example of educational content in this position could be that the more variation in tastes and textures the child experiences, the more willing the child is to try new foods. This assertion gives an advantage to breastfeeding over formula feeding, when it comes to offering the child variation in tastes. Moreover, complementary foods should vary in tastes as well as in texture (Harris & Coulthard, 2016). Furthermore, parents may be unaware of a potentially unhealthy relationship between beverages such as 100% fruit juice and unhealthy weight gain. Thus, parents or caregivers should be encouraged to offer their children water instead of fruit juice or sugar-sweetened beverages to improve their lifestyle and hinder childhood obesity (Shefferly, Scharf, & DeBoer, 2016).

Mitchell et al. (2013) note that feeding-related advice is often given too late to parents with the result that feeding problems in nonclinical samples seem to be common. Such feeding problems may cause serious adverse and nutritional consequences. Thus, in order to enhance the nutritional and emotional well-being of children, a preventive approach should be to educate in advance, before the parents risk becoming overwhelmed by difficulties in feeding situations—maybe even before the mother has given birth (Mitchell et al., 2013).

The mother's own dietary intake in addition to maternal self-efficacy has been associated with healthy diet quality for the child as indicated in one of the included studies (Spence et al., 2014). Furthermore, lower parental use of food as a reward together with high maternal knowledge about child feeding was shown to be a mediator for an improved, healthy child diet (Mazarello Paes & Ong, 2015; Spence et al., 2014). Important advice to the parents is for instance that having a family meal with their child might be one of the most effective interventions in preventing childhood obesity (Lee, Lee, & Park, 2016). Nevertheless, until now, there has been little focus on integrating the effects of parents' own dietary behaviour on their children's dietary behaviour (Larsen et al., 2015). A claim might therefore be that counselling about food and feeding should be tailored not only towards the child's developmental stage but also towards the dietary intake of the family. In line with this argument, one of the studies indicated that mothers in the intervention group who had received peer-led infant feeding counselling monthly, in their home, during the child's infancy had better nutritional knowledge and confidence than the mothers in the control group, 4 years later. The control group mothers had attended the regular child health services getting general services and advice, less customised to their particular family and focusing more on worries and concerns of the mothers at the time (Scheiwe et al., 2010; Watt et al., 2009). Thus, findings from the included studies emphasise that counselling in preventive healthcare settings, based on advice reflecting the particular mother or the particular child, participating in the consultation, may impact healthier feeding habits than if general advice is given about regular themes concerning children's food and feeding (Daniels et al., 2013; French et al., 2012; Scheiwe et al., 2010; Watt et al., 2009).

4.1 | Strengths and limitations in this literature review

The research field about universal food and feeding counselling involving children under 2 years of age and their families seems limited. Furthermore, articles included in this review originate from relatively few countries. However, this review within the current area represents a contribution to summarising existing trends in promoting the child's healthy diet, based on counselling of caregivers in healthcare settings. In this particular context, we have targeted applicable interventions as well as experience-based perspectives in existing research. This combined outlook is possible to achieve because of the chosen methodological framework of a modified scoping review.

5 | CONCLUSION

Through this review, we have found that relevant knowledge about food and feeding adapted to the unique family as well as to the child's developmental stage is central when counselling on the child's healthy diet. Thus, the results indicate that the encounter between the particular caregiver and the health professional is essential. Through counselling, the parents should be given a fair chance to adjust their actions regarding the child's healthy diet, adapted to their situation and opportunities. However, parents express perceived inconsistency in nutritional advice received from healthcare providers, which might have negative consequences such as uncertainty and misconceptions. Hence, further studies should evaluate how healthcare providers like public health nurses perform appropriate and consistent nutrition counselling in preventive healthcare settings.

6 | RELEVANCE TO CLINICAL PRACTICE

It is essential to clinical practice to apply the updated research-based trends on the what, how and when of counselling about the child's healthy diet in preventive healthcare settings. Through this literature review, we have provided an overview of some of these facts. For nursing education, the results from this review may serve as a specification of relevant foci to strengthen competences within counselling on young children's healthy diet for newly graduated nurses as well as in-service education of fully trained practising nurses. The relevance of this review for nursing research is in its potential to serve as a basis for planning applicable empirical research that targets healthy diet counselling in children aged 2 years or younger and their parents in preventive healthcare settings.

CONTRIBUTIONS

Study design: BHF, KG, SH, JO; systematic literature search: JO, BHF, KG; data analysis: BHF, KG, SH; manuscript preparation: BHF, KG, SH, JO.

CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

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SUPPORTING INFORMATION

Additional Supporting Information may be found online in the supporting information tab for this article.

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Paper II

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RESEARCH ARTICLE

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Parental concerns of allergy or hypersensitivity and the infant's diet

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Abstract

Aim: To investigate a possible association between children's current diet and parents' reported avoidance of appropriate foods in the child's diet at the age of 10 months, due to fears of allergic or hypersensitivity reactions.

Design: A cross-sectional study.

Methods: In 10 randomly selected municipalities willing to participate, 686 children represented by their parents visiting the child health centre were enrolled in the study. From January 2015–January 2017, 440 (64%) parents completed a semi-quantitative food frequency questionnaire concerning their child.

Results: Thirty-four percent of parents reported that they avoided introducing some food items due to fears of allergy or hypersensitivity in their child. A statistically significant relationship emerged between this reporting and parents wanting more information about food for infants and toddlers. However, the reported fear was not associated with dietary restrictions regarding actual feeding of the child.

KEYWORDS

allergy, child health centre, diet, food, hypersensitivity, infant, parent, toddler

1 | INTRODUCTION

The World Health Organization (2017) currently recommends exclusive breastfeeding for the first 6 months of life, followed by introduction of nutritionally adequate and safe complementary foods together with continued breastfeeding up to 2 years and beyond. An apparent increase in food allergy has resulted in reconsidering prevention strategies aimed at the infant's diet (Du Toit, Foong, & Lack, 2016; Gupta & Sicherer, 2017). Recent research indicates that early introduction of potential allergens in the child's diet (Du Toit et al., 2016; Netting et al., 2017), around 4 months of age while the infant continues to breastfeed might protect against developing food allergies (Smith & Becker, 2016). Whether the age of introduction of complementary food as a means of allergy prevention should be 4 or 6 months has not been established (Abrams, Greenhawt, Fleischer, & Chan, 2017; Smith & Becker, 2016). Accordingly, a compromise so far seems to recommend solid food introduction "at around 6 months but not before 4 months," as in Australasian guidelines (Abrams et al., 2017). A similar recommendation appears in the Norwegian authorities' guidelines for advice from child health centres (CHCs) on infant feeding practices (Norwegian Directorate of Health, 2016, 2017). Almost all parents and their under school-aged children use these municipal CHCs (Statistics Norway, 2016). They provide extensive, universally available preventive health care on a voluntary basis, free of charge (Norwegian Directorate of Health, 2017).

As the prevalence of food allergy may be challenging to determine because adverse food reactions may occur for various reasons (Rona et al., 2007), it is not surprising that the public might use the term "allergy" to describe any adverse response to foods (Sicherer, 2011). Food allergy is a hypersensitivity reaction caused by a specific

immune response (Johansson et al., 2004; Venter et al., 2006), estimated to affect nearly 5% of adults and 8% of children (Sicherer & Sampson, 2014). When it comes to hypersensitivity, previously referred to as intolerance (Johansson et al., 2004), the prevalence of food hypersensitivities perceived by the parents only in children aged 1–4 years in south-eastern Finland was 21% (Pyrhönen, Näyhä, Kaila, Hiltunen, & Läärä, 2009). Corresponding, a study from the UK reported a cumulative incidence of 26% for parentally perceived food hypersensitivity by the child's first year and 34% by the child's third year (Venter et al., 2008).

Food allergy is a serious health issue (Longo, Berti, Burks, Krauss, & Barbi, 2013) and may even be life threatening (Boye, 2012; Longo et al., 2013). In 90% of cases, food allergy is induced by peanuts, cow's milk, hen's eggs, nuts, soybeans, fish, crustaceans and shellfish (Boye, 2012). Avoidance of allergens should be based on clearly defined criteria and thus "avoidance and fear of all" is not appropriate as a strategy in allergy management (Haahtela, von Hertzen, Mäkelä, & Hannuksela, 2008).A previous study by Ilmonen, Isolauri, and Laitinen (2012) among nurses at CHCs in Finland indicated that 20% of the nurses gave incorrect advice on food avoidance as a preventive measure to prevent food allergy.

We aimed to investigate whether there was an association between children's current diet and parents' reporting of avoiding appropriate foods when feeding their child at the age of 10 months, because they were afraid that the child might react with allergy or hypersensitivity. To our knowledge and based on a literature review, there are no previous studies on this topic.

2 | METHODS

2.1 | Design

This cross-sectional study reports on baseline data in a Cluster Randomized Controlled Trial, registered in ClinicalTrials.gov, Identifier: NCT02266953. At baseline, before the child's 10 month consultation, the parents answered a semi-quantitative food frequency questionnaire (SFFQ) on behalf of their child.

2.2 | Setting and sample

In total, there were 139 municipalities consisting of all Norwegian municipalities with more than 100 births in 2012, except those in the three northernmost counties. Of these, we selected 10 municipalities that fulfilled the inclusion criteria of implementing the healthcare programme in a way consistent with the authorities' regulations regarding timing and number of consultations (Norwegian Directorate of Health, 2004) and were willing to participate. All parents in these 10 municipalities who visited the CHC received oral and written information about the research project from their public health nurse (PHN). The only exclusion criterion was insufficient Norwegian skills to understand written information about the study.

2.3 | Ethical considerations

The participating parents gave their written consent to the PHN at the CHC when the child was aged 5–6 months. Participation was related to the oldest child if the child was a twin or triplet. Participation was voluntary, and the participant could withdraw without giving a reason. All data have been treated as confidential. Participant anonymity was guaranteed. The study was approved by the Regional Committees for Medical and Health Research Ethics (REC), Ref.nr. 2014/726.

2.4 | Data collection

2.4.1 | The semi-quantitative food frequency questionnaire

The SFFQ in the present study was designed to investigate feeding practices of 10-month-old infants retrospectively from birth. The SFFQ was a revised version of a validated and standardized SFFQ (Kristiansen, Lande, Øverby, & Andersen, 2010) developed for a national dietary survey among 12-month-old infants in Norway in 2007 (Spedkost [Infant Diet] 2006–2007). The revisions made for the present study were updates regarding applicable food items on the market. The revisions included new types of formula milk for infants, a new type of children's yoghurt replacing an older type, baby porridge containing milk that replaced older types without milk, a soft cheese product for children that replaced an old type, updated designations of margarines and exclusion of an industrial baby food product that was no longer on sale. Questions regarding the parents' use of organic food and spinach as an alternative under vegetables were removed in the current SFFQ. The weight and length of the child at 6 months, the mother's use of snuff and the mother's country of origin were questions added in the present SFFQ. Apart from this, the SFFQ consisted of questions as described in detail by Kristiansen et al. (2010).

2.4.2 | Completion of semi-quantitative food frequency questionnaires

Parents were recruited continuously from 5 January 2015 - 31 January 2017. The parents who consented to participate received a paper format SFFQ by postal mail when their child was approximately 8.5 months old. Enclosed with the SFFQ was written information about the survey and a reply envelope. One of the authors administered the distribution of the SFFQs. The parents were asked to complete and return the SFFQ just before the child's 10 month consultation at the CHC. Before the deadline, parents usually received a telephone call to remind them about the questionnaire. Completion of the SFFQ was estimated to take about 40 min.

2.5 | Data analysis

2.5.1 | Statistical analysis

Continuous data were described with median and range, categorical data with counts and percentages. Crude associations between pairs of

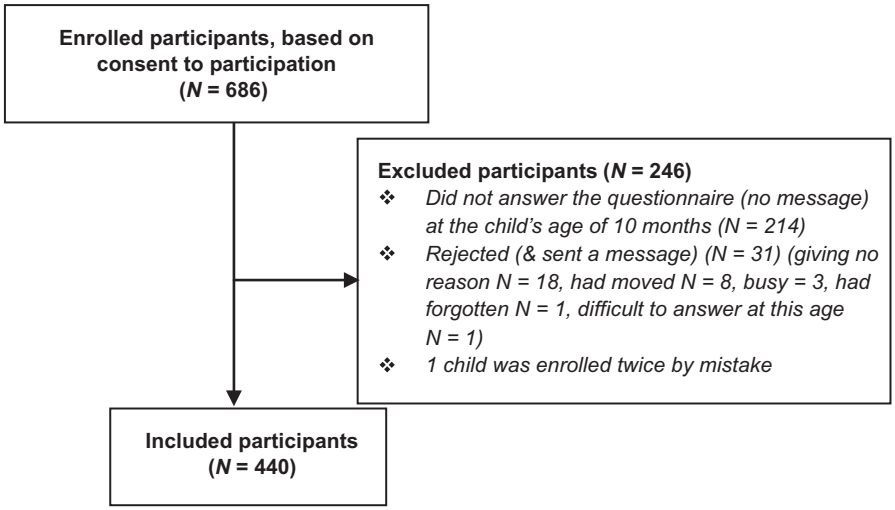

FIGURE 1 Flowchart of the process including participants and reasons for exclusion

categorical data were assessed using Chi-square tests. Possible differences between groups regarding continuous variables were analysed using *t* tests and the Mann-Whitney-Wilcoxon test if not normally distributed. To correct for multiple testing, $p < 0.01$ was considered statistically significant. All statistical analyses were performed using *IBM SPSS Statistics for Windows ®, Version 24.0., IBM Corporation®.*

2.5.2 | Nutrient calculations

Daily intake of energy, nutrients and food groups was computed using a food database in a software diet calculation program, *KBS [= KostBeregningsSystemet]* in Norwegian, version 7.3, developed at the Department of Nutrition, University of Oslo. The relevant food database is mainly based on a version of the official Norwegian food composition table (Kristiansen, Laugsand Lillegaard, & Andersen, 2013; Norwegian Food Safety Authority, 2017). In the present SFFQ the food database AE-10 was used, based on the official Norwegian food composition table of 2006.

2.5.3 | Categories of parents based on the aim of the study

The parents were divided into two groups, the avoidance and non-avoidance group, based on their response to the SFFQ. The *avoidance group* consisted of parents who reported that they avoided giving appropriate foods to their child because of their fear that the child would react with allergy or hypersensitivity. Consequently, parents who did not report such actions were categorized in the *non-avoidance group*.

3 | RESULTS

3.1 | Participant characteristics

Figure 1 shows the process of including participants. There is no data on how many parents at the CHCs were initially asked about participation in the study. In total, 686 children represented by consenting parents were enrolled in the study. SFFQs were completed for 440 children (64% response rate). Characteristics of the infants (*N* = 440) are presented in Table 1 and of the parents in Table 2. There is a slight overrepresentation of boys among the infants in the sample (Statistics Norway, 2017) (Table 1).

TABLE 1 Characteristics of infants (*N* = 440)

Characteristic	Value
Gender, *n* (%)	
Females/males	213 (48.4)/227 (51.6)
Age (months)[a], median [range]	9.9 (7.8–11.5)
Birth weight (g), median [range]	3,545 (1075–4070)
Missing (*n*)	19
Birth length (cm), median [range]	50 (37–56)
Missing (*n*)	26
Gestational age at birth (weeks), *n* (%)	
≥38	388 (88.2)
<38	51 (11.6)
Missing	1 (0.2)
Breastfed, *n* (%)	
Yes, currently	232 (52.7)
No, but earlier	194 (44.1)
No, never	11 (2.5)
Missing	3 (0.7)

[a]at the time of completing the food frequency questionnaire.

Both mothers and fathers in our sample had higher levels of education than the general population (Statistics Norway, 2017) (Table 3). The proportion of mothers with a country of origin other than Norway is lower in our study compared with the general Norwegian population (Statistics Norway, 2017).

3.2 | Parent-reported food avoidance, food allergy and hypersensitivity

The parent-reported food avoidance was categorized into two groups. Thirty-four percent (*N* = 151) reported that they avoided

TABLE 2 Characteristics of the mothers and the education level of the fathers

Characteristic	Value
Mothers (*N* = 440)	
Age (years), median [range]	30 (18–46)
Marital status, *n* (%)	
Married	189 (43)
Cohabitant	235 (53.4)
Not married/cohabitant	13 (3.0)
Missing	3 (0.7)
Country of origin, *n* (%)	
Norway	401 (91.1)
Rest of Europe	28 (6.4)
Outside Europe	11 (2.5)
Working outside home[a], *n* (%)	
Yes	149 (33.9)
No	290 (65.9)
Missing	1 (0.2)
Smoking, *n* (%)	
Yes, daily	10 (2.3)
Yes, occasionally	11 (2.5)
No	419 (95.2)
Use of snuff, *n* (%)	
Yes, daily	22 (5.0)
Yes, occasionally	8 (1.8)
No	410 (93.2)
Number of children, *n* (%)	
1	195 (44.3)
2	170 (38.6)
3	58 (13.2)
≥4	16 (3.6)
Missing	1 (0.2)
Education, *n* (%)	
Below upper secondary education	10 (2.3)
Upper secondary education[b]	118 (26.8)
Higher education, short	194 (44.1)
Higher education, long	117 (26.6)
Missing	1 (0.2)
Fathers (*N* = 440)	
Education, *n* (%)	
Below upper secondary education	12 (2.7)
Upper secondary education[b]	221 (50.2)
Higher education, short	120 (27.3)
Higher education, long	76 (17.3)
Missing	8 (1.8)

[a]at the time of completion of the food frequency questionnaire. [b]Tertiary vocational education is included.

giving appropriate food to their child because of their fear that their child might react with allergy or hypersensitivity (hereafter called the avoidance group) (Table 4). The proportion of parents reporting that their child had nutritional problems related to food allergy or food hypersensitivity was very small — only 4.1% (Table 4).

There are no statistically significant differences regarding demographic variables of the parents and the family between the two groups, either avoiding giving foods to the child or not (Table 5). However, a significantly higher proportion (68.9%) of parents in the avoidance group wanted more information about food for infants and toddlers than in the non-avoidance group (46.0%) (Table 5).

There was no difference between infant food intake in the avoidance group and the non-avoidance group. Significantly less cheese ($p < 0.001$) was consumed among the children in the sample ($N = 18$) who had problems with food and feeding related to food allergy or food hypersensitivity compared with the rest of the sample ($N = 422$). All other differences between the groups of children with or without problems related to food allergy or food hypersensitivity were registered non-significant ($p > 0.01$) regarding consumed amounts of food items.

4 | DISCUSSION

Thirty-four percent of parents in this study reported that they avoided introducing some food items due to *fears* of allergy or hypersensitivity in their child. However, this fear did not seem to be associated with dietary restrictions regarding the child. The findings in our study showed no differences in the food consumed by the child, aged 10 months, between the avoidance group and the non-avoidance group. A previous study reports that parents' *suspicions* of their child having allergy could cause a delay in the introduction of complementary feeding (Niinivirta, Isolauri, Nermes, & Laitinen, 2014). A review article found that the entity "food allergy" included plenty of imagined allergy and accordingly unnecessary avoidance of foods among children was too high (Haahtela et al., 2008). Regarding our study sample, this seems no challenge because of the similar food consumed among infants in the avoidance and non-avoidance group.

In our study, 71% of the mothers had more than 15 years of education. No differences in the mothers' educational level, the age of the mothers or the number of siblings were observed in the avoidance group and the non-avoidance group. In contrast, Eggesbø, Botten, and Stigum (2001) presented, on the basis of Oslo Birth Cohort 1992–1993 (Nafstad, Jaakkola, Hagen, Botten, & Kongerud, 1996), a significant relation between higher maternal education, lower maternal age and a groundless restricted diet for the child. The proportion of mothers with more than 15 years of education was lower in this study compared with ours (53% vs. 71%) (Nafstad et al., 1996). A population-based cross-sectional survey among children in south-eastern Finland revealed that food allergies diagnosed by a physician were less common among children having one or more

TABLE 3 Length of education in the study sample in comparison to population data from Statistics Norway, (2017)

Mother's education level	Value, *N* (%)	General population, 30–34 year-old women, (%)
Below upper secondary education	10 (2.3)	17.2
Upper secondary education[a]	118 (26.8)	24.9
Higher education, short	194 (44.1)	37.5
Higher education, long	117 (26.6)	20.4
Father's education level	**Value, *n* (%)**	**General population, 30–34 year old men, (%)**
Below upper secondary education	12 (2.7)	23.1
Upper secondary education[a]	221 (50.2)	37.2
Higher education, short	120 (27.3)	23.0
Higher education, long	76 (17.3)	16.8

[a]Tertiary vocational education is included.

TABLE 4 Parental reporting related to the infant's allergy or hypersensitivity

Question	Value *n* (%)		
	Yes	No	Missing
Is there any applicable food that you avoid offering to your child because you are afraid that your child might react with allergy or hypersensitivity?	151 (34.2)	278 (63.2)	11 (2.5)
Does your child have problems with food and feeding related to food allergy or food hypersensitivity?	18 (4.1)	422 (95.9)	–

older siblings than when the index child was the oldest or the only child (Pyrhönen et al., 2009). Further, it has been indicated that an unwarranted diet for a child because of parental suspicions of allergy is significantly related to a child having siblings (Eggesbø et al., 2001).

Our study's findings revealed that 4.1% of parents report that their child has dietary problems related to food allergy or food hypersensitivity. We do not have information on whether this is based on clinically diagnosed or exclusively parental assumption of food allergy and food hypersensitivity. A large study in the UK based on a whole population birth cohort (*N* = 969) found that the cumulative incidence of parentally perceived food hypersensitivity in their child aged 12 months was 25.8%. Of these children, only 14% were objectively diagnosed with food hypersensitivity by means of an open food challenge and 6% were diagnosed with food hypersensitivity by means of a double-blind, placebo-controlled food challenge (Venter et al., 2006). Further, a previous literature review reported a proportion of 8% of objectively assessed food allergy in children (Sicherer & Sampson, 2014). Thus, the corresponding percentage in our study is considerably lower than indicated in numerous studies suggesting an increase in food allergy, although these numbers should be treated with caution due to methodological concerns (Sicherer, 2011).

Our data revealed a significant association between parents who wanted more information about food for infants and toddlers and their reported avoidance of giving appropriate food to their child because of fears of allergy or hypersensitivity. Our study thus suggests that parents with concerns related to their infant's food and feeding practices are looking for trustworthy information about child feeding. This is to be expected because during infancy children are completely dependent on their parents' understanding, effort and practices regarding food and feeding their child. Good parental understanding of their infant's nutritional requirements is essential to make the right decisions for their child (Hobbie, Baker, & Bayerl, 2000).

One-third of the parents in our study reported a concern for allergy or hypersensitivity in their child in relation to the child's diet. Sixty-nine percent of these parents wanted more information about food for infants and toddlers. This underlines a need to examine specifically the information delivery related to these themes in the CHC. Further research should investigate what kind of information about food and feeding practices the parents receive and its relation to parental needs and expectations.

4.1 | Strength and limitations

A relatively large response rate in terms of the type of study, in relation to the number of parents who consented to participate, represents a strength in this study. Participants who were almost exclusively of non-immigrant background and had a higher level of education than the general Norwegian population might limit

TABLE 5 Associations between selected variables and parental avoidance or non-avoidance of offering certain food because they are afraid the child might react with allergy or hypersensitivity

Question	Do you avoid offering applicable food because you are afraid the child might react with allergy or hypersensitivity?		
	Yes-mothers, (*N* = 151)	No-mothers, (*N* = 278)	
Variable	*N* (%)	*N* (%)	*p*-value*
Mother's education level			0.66[a]
Upper secondary education and below[c]	44 (29.1)	80 (28.8)	
Higher education, short	70 (46.4)	119 (42.8)	
Higher education, long	37 (24.5)	79 (28.4)	
Mother's age (years), mean	30.4	31.1	0.15[b]
Number of children			0.56[a]
1	69 (45.7)	122 (44.0)	
2	58 (38.4)	106 (38.3)	
3	21 (13.9)	36 (13.0)	
4	3 (2.0)	13 (4.7)	
Wish for more information about food for infants and toddlers			<0.001[a]
Yes	104 (68.9)	128 (46.0)	
No	41 (27.2)	128 (46.0)	
Don't know	6 (4.0)	22 (7.9)	
	Yes-fathers, (*N* = 147)	No-fathers, (*N* = 272)	
	N (%)	*N* (%)	
Father's education level			0.27[a]
Upper secondary education and below[c]	84 (57.1)	142 (52.2)	
Higher education, short	34 (23.1)	83 (30.5)	
Higher education, long	29 (19.7)	47 (17.3)	

[a]Pearson's Chi-Square Test. [b]T test for equality of means; equal variances assumed. [c]Tertiary vocational education is included. [d]*p*-values <0.01 considered as statistically significant.

the generalizability of our findings. However, despite an overrepresentation of participants with higher education, all levels of education are represented among the participating parents. Due to the study design, causality cannot be inferred. The unknown response rate, based on how many participants were initially invited to participate in the study, also limits generalizability of the results.

5 | CONCLUSION

This study's focus on parental fears of allergy or hypersensitivity in their infant associated with the infant's diet has rarely been addressed previously. The study findings show that the infant's diet seems unaffected by parents' concerns regarding food allergy and hypersensitivity in their child. A significant association was revealed between parents reporting avoidance of giving their infant certain foods because of fears of allergy or hypersensitivity in their child and the parents' wish for more information about food for infants and toddlers. This should be considered in service provision in the CHCs.

6 | TRIAL REGISTRATION

This cross-sectional study reports on baseline data in a Cluster Randomized Controlled Trial on the use of a communication tool about diet at the child health centre, registered in ClinicalTrials.gov, Identifier: NCT02266953.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

AUTHOR CONTRIBUTIONS

BHF, KG, SH, LFA, MCS: designed the study. BHF: facilitated for collecting data. BHF: collected the data. BHF, MCS, LFA, KG, SH:

contributed to data analysis. BHF, KG, SH, LFA, MCS: contributed to preparing the manuscript. BHF, KG, SH, LFA, MCS: read and approved the final manuscript.

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (https://www.icmje.org/recommendations/)]:

- substantial contributions to conception and design, acquisition of data or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

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Paper III

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ORIGINAL ARTICLE

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Parental experience of counselling about food and feeding practices at the child health centre: A qualitative study

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Abstract

Aims and objectives: To investigate how parents experience counselling about food and feeding practices and the use of a communication tool about diet at the child health centre.

Background: Food-related counselling is a key element in parents' consultations with public health nurses at child health centres. Public health nurses possess limited strategies and tools for addressing nutritional issues, especially in the context of client diversity.

Design: An interpretive description approach, fulfilling the COREQ checklist criteria.

Methods: Individual interviews performed between January 2017–May 2017 among parents (n = 12) of children (mean age 28 months) who had been exposed to a communication tool about diet, in regular child health centre consultations with their child. These consultations were included in clinical trial (ClinicalTrials.gov.: Identifier: NCT02266953).

Results: Counselling using the communication tool about diet was primarily based on the public health nurse presenting images of healthy food choices. After infancy, consultations sometimes became more time-pressured, inhibiting parents from asking questions related to the child's diet. The parents who had questions related to food allergy or breastfeeding of their child sometimes experienced limited support. Some parents felt overwhelmed with information about healthy food choices if their child's diet differed from the recommendations presented.

Conclusions: The parents' existing expectations and needs had an impact on their satisfaction in relation to their perceptions of nutritional counselling. The use of the communication tool about diet to promote a two-way dialogue instead of providing one-way dietary information might be particularly useful in consultations for parents who do not follow customary recommendations.

Relevance to clinical practice: If the diet of the family differs from what is recommended, parents often experience limited support at the child health centre. Promoting a two-way dialogue in consultations using a communication tool about diet could help parents in their concerns related to feeding their child.

KEYWORDS
child, child health services, counselling, food, infant, interview, public health nursing

1 | INTRODUCTION

Reducing inequalities in health status is a key aim of public health nursing (Edgecombe & World Health Organization, 2001). A typical task in public health nursing is counselling parents about food and feeding issues related to their infants (Redsell et al., 2013) and children below school age (Hemingway, Aarts, Koskinen, Campbell, & Chasse, 2013; Holmberg Fagerlund, Pettersen, Terragni, & Glavin, 2016; Ilmonen, Isolauri, & Laitinen, 2012). The child health centre (CHC) is frequently the context for public health nurses' (PHNs') counselling parents with under school-aged children (Bramhagen, Axelsson, & Hallström, 2006; Holmberg Fagerlund et al., 2016; Ilmonen et al., 2012).

Findings of a recent study focusing on the experiences of PHNs indicated that PHNs possessed limited strategies and tools for addressing nutritional issues at the CHC, particularly adapted to clients' cultural diversity (Holmberg Fagerlund et al., 2016). This prompted a need for additional training on client counselling strategies as well as culturally appropriate information materials and visual aids to assist PHNs in delivering equitable services at the CHCs (Holmberg Fagerlund et al., 2016). This was therefore seen as a rationale for preparing *a communication tool about diet* for universal use in PHN consultations at the CHC. This tool was intended to assist PHNs in their assessment and in tasks individualising counselling about infant and child feeding practices for families in three regular CHC consultations, when the child was aged 10, 12 and 15–18 months. These consultations were chosen based on previous study findings, indicating that, according to PHNs, counselling about food and feeding practices typically becomes challenging when the child reaches weaning age and especially when the child begins to eat the same food as the rest of the family (Holmberg Fagerlund et al., 2016).

Twenty images and a users' manual, produced in the earlier SOMAH project, 2009 - 2013, at OsloMet - Oslo Metropolitan University, constituted the basis for designing this communication tool about diet (Garnweidner, 2013; The Research Council of Norway, 2013). The SOMAH images were designed to provide encouragement in a positive way and to be appropriately related to different food cultures (The eQUITY project, 2013), regardless of the health literacy level of the client (Nielsen-Bohlman, Panzer, & Kindig, 2004). These images were developed for populations with immigrant backgrounds that had an increased risk for developing type 2 diabetes (Garnweidner, 2013; The Research Council of Norway, 2013). A feasibility and acceptability test (Richards, 2015), in June–September 2014, was conducted for quality assurance of the selection and some adjustments regarding appropriate image material from the previous SOMAH project. This was done in order to customise the images for the current research project aimed at the universal population visiting the CHC and focusing on a generally healthy diet instead of the previous focus exclusively on immigrant groups and prevention of a specific disease.

Counselling inspired by motivational interviewing, by expressed empathy regarding the parents' needs, strengthening their confidence and thus avoiding any persuading (Wong, 2014), was incorporated in the communication tool about diet (Miller & Rollnick, 2013). The purpose of this was to encourage appropriate adjustment of PHN counselling to the preferences and needs of the particular family (Holmberg Fagerlund et al., 2016). The motivational interviewing approach to counselling implies creating opportunities for active collaboration between the PHN as counsellor and the collaborating parent about their joint project, that is, to optimise the diet of the child. Thus, the image-based communication tool about diet serves as a medium to achieve a focus on a mutual project by the two collaborators (Miller & Rollnick, 2013).

What does this paper contribute to the wider global clinical community?

- Parents having dietary concerns beyond those that apply to the majority of parents expressed perceptions of limited support at the child health centre.
- Parental concerns in relation to breastfeeding, children's food allergies, and selectiveness in terms of food, or family food preferences that differed from those usually recommended, often resulted in perceptions of limited support at the child health centre.
- A communication tool about children's diet in consultations at the child health centre can be used to promote a two-way dialogue between nurses and parents about their child's diet.

2 | BACKGROUND

Evidence suggests that establishing healthy feeding practices early in life might promote healthy eating patterns later (Craigie, Lake, Kelly, Adamson, & Mathers, 2011; Nicklaus & Remy, 2013) and protect against various chronic diseases (Schwartz, Scholtens, Lalanne, Weenen, & Nicklaus, 2011).

Anticipatory guidance from the CHC on what the individual parents can expect regarding the development and feeding of their child might influence healthier child feeding habits (Daniels, Mallan, Nicholson, Battistutta, & Magarey, 2013; French et al., 2012). Based on this knowledge, the authors of a recent literature review argued that future studies should evaluate how healthcare providers like PHNs perform appropriate and consistent nutrition counselling in preventive healthcare settings (Holmberg Fagerlund, Helseth, Owe, & Glavin, 2017).

This qualitative interview study therefore aimed to investigate counselling about food and feeding practices from the perspective of parents who had participated in an intervention in which PHNs used a communication tool about diet. The study question was as follows: How do parents experience counselling about food and feeding practices and the use of a communication tool about diet at the CHC?

2.1 | The intervention

Prior to the implementation of the intervention, the PHNs had received a standardised one-hour introduction on the use of the developed communication tool about diet and the corresponding user's manual. After this, the PHNs used the communication tool about diet for every child in three regular individual CHC consultations at the child's age of 10, 12 and 15–18 months. The intervention consisted of the PHN presenting to the parents six or seven printed images about different nutritional themes per consultation. The A4-size images were presented on a flip chart stand at the PHN's desk. Through this presentation, parents were invited into a mutual dialogue about themes regarding food and feeding practices adapted to the family and the age of the child (Miller & Rollnick, 2013).

The communication tool about diet aimed at: (a) helping the family to choose an optimal diet for the child; (b) raising the caregiver's awareness that the food habits of the child might be the basis for both recent and long-term health; and (c) helping the family to adjust the meals to give their child the opportunity to develop skills in eating and to get used to new tastes. Dietary factors according to authorities' recommendations were emphasised as follows: considerable reduction of sugar intake from beverages, increased vegetable and fruit intake, reduction of sugary foods, increased intake of whole grain products, ensuring the intake of vitamin D and promoting the use of fish (National Nutrition Council in Norway, 2011). Moreover, the authorities' labelling schemes designating healthy foods were actively promoted in the images used in the communication tool about diet in this intervention.

3 | METHODS

3.1 | Design

An inductive methodological orientation of interpretive description, described by Thorne (2016), was chosen because of its potential to guide the practice field in applied settings, like nursing, for qualitative research. Bringing about new insights within a chosen context of practice is typical of the interpretive description approach. In a recent literature review, no previous studies reflecting our study's aim and objective were found (Holmberg Fagerlund et al., 2017). Analysing data, one may draw inspiration from specific interpretive techniques (Thorne, 2016). In this study, a structural data analysis was inspired by Lindseth and Norberg (2004). We have fulfilled the consolidated criteria for reporting qualitative research (COREQ) when conducting and reporting this study (Tong, Sainsbury, & Craig, 2007; see Supporting Information Data S1).

3.2 | Setting and recruitment procedures

This study was conducted among parents who had been visiting the CHC with their child for regular consultations from the child's birth until 2 years of age and were exposed to the communication tool about diet at three consultations when their child was aged 10, 12 and 15–18 months. The participants were recruited by convenience in four municipalities for individual interviews (Polit & Beck, 2017). These parents had previously given their written consent to participate in the intervention and had thus disclosed their address and mobile telephone number. Hence, the parents were first informed about the interview study orally, by telephone. If they accepted, written information about the interviews was sent by postal mail. After the parents had received the written information, which included a consent form, they were telephoned to make an appointment regarding time and place for an interview. This process of participant recruitment was ongoing consecutively during the interviews, and the adequacy of the final number of participants was evaluated continuously during this process (Malterud, Siersma, & Guassora, 2015).

3.3 | Characteristics of participants

All the study participants (n = 12) were either married or cohabiting. Two fathers and ten mothers participated, and their mean age was 33 years. They originated from Norway (n = 11) or another European country (n = 1). Two were first-time parents. They had education at upper secondary education level (n = 5), at higher education level, ≤4 years education (n = 5) or at higher education level, >4 years education (n = 2). Their children, three boys and nine girls, had a mean age of 28 months at the time of the interview. At the time of the interview, one year on average had elapsed from the last time the participants had been exposed to the communication tool about diet visiting a regular CHC consultation with their child.

3.4 | Ethics approval and consent to participate

The participants gave their written, informed consent to participate in the interview study. The interviewer received the completed consent form prior to the interview. Participation was voluntary, and the participants could withdraw without giving a reason. All data were treated as confidential. Participant anonymity was guaranteed. Regional Committees for Medical and Health Research Ethics approved the study (reference number: 2014/726).

3.5 | Data collection

The interviews were performed during January 2017–May 2017. The participants decided on the interview location: either in their home or at a cafe or similar place.

The interviews were semi-structured and a written topic guide (Figure 1) was used. The interviews lasted between 10–40 min. They were audio recorded and transcribed verbatim, but the sentence construction and grammar were modified afterwards to improve readability.

1. How was the counselling about food and feeding practices at the child health centre?
2. How did this correspond to your expectations?
3. How did you experience the public health nurse's use of the communication tool about diet?
4. How do you think the communication tool about diet did influence your child's diet?
5. How can you summarize your participation in consultations on the child health centre where this tool was used?
6. What do you in particular remember about the communication tool about diet?
7. What do you think about the timing of the use of the communication tool about diet?
8. Do you have something to add or perhaps some advice you could share with us?

FIGURE 1 The written topic guide used in the interviews

The process of performing interviews was guided by the concept of sufficient information power. Thus, the larger the information power is, the lower the number of participants needed (Malterud et al., 2015). Moreover, the parents participating in the interviews turned out to have a diversity of experiences. Additionally, the core focus of the study was to investigate a well-defined and delineated phenomenon related to counselling about food and feeding practices and an accompanying tool. The communication in the interviews was clear, based on the written topics (Figure 1). All these aspects were directional when considering the amount of information power related to sample adequacy, data quality and variability (Malterud et al., 2015). Thus, in this study we interviewed 12 participants.

Apart from this, 15 parents had refrained from participating after having received the written information about the study. Of these, four indicated that they did not have time to participate, five did not answer the telephone when contacted, and another five did not give any reason and one declined because of illness.

3.6 | Analysis

Data analysis began right from the start of the interviews. To progress beyond what might be self-evident about any CHC consultation, the researchers needed a preliminary understanding of the field in this interpretive process (Thorne, 2016).

An initial reading of the text as a whole, interview by interview, provided the bases for a structural analysis inspired by Lindseth and Norberg (2004) to identify and formulate themes bringing forth threads of meaning in the text. An understanding of the text was formulated and noted, based on this reading. Text was then divided into meaning units of sentences, structuring just one meaning (Lindseth & Norberg, 2004). These meaning units were read through and considered in the light of the researcher's understanding. Based on this reflection, the units were shortened to everyday expressions, as concise as possible. These expressions were sorted into groups, then further abstracted into sub-themes and assembled into fewer themes. This is shown in Table 1. During this interpretive process, the researcher who had conducted the interviews also read and integrated short handwritten memos from the interviews about the setting and atmosphere. All authors contributed to the analysis process.

4 | RESULTS

Based on the analysis, three metaphors describing parental experiences appeared: "A service in accordance with expectations," "You feel you do not fit in the framework" and "Description of what seems unpleasant." Three themes and six sub-themes emerged from the structural analysis as presented in Table 2. The following section presents the themes and sub-themes, with quotations to illustrate them. The symbol (*q1–q12*) indicates the interview from which the quotation originates.

4.1 | Experiencing relevant counselling about food and feeding practices

Some of the parents expressed how they were met at the CHC in accordance with their expectations. These parents had in common that their children usually had been breastfed as newborn, and the counselling on food and feeding practices was experienced as appropriate because the parents were satisfied with the answers to their questions, and the CHC counselling, for instance related to the child's somewhat low weight gain.

TABLE 1 Example of the structural analysis, inspired by Lindseth and Norberg (2004)

Meaning unit	Condensation	Sub-theme	Theme
In the beginning I had an expectation of asking questions and receiving definitive answers … but afterwards I saw that this is not possible	Having expectations, being disappointed	Being disappointed because of perceived insufficient advice	Having needs that are not met
... we have been guided to find a proper pathway related to the child's diet by using those images	Guided by the use of images exemplifying a recommended healthy diet	Being positively influenced by specific topics	Experiencing relevant counselling about food and feeding practices
… [remembering the images] something about plain yoghurt, where you can add pieces of fruit,... simple things…	Images showing simple ways to put together healthy foods	Being positively influenced by specific topics	Experiencing relevant counselling about food and feeding practices
Feeding advice that we received at the child health centre is to be considered as nothing more than a recommendation; you should not get a feeling of being "invaded" by all advice, because then it is too much [advice]…	You should not be overwhelmed by too much feeding advice	Too much advice feels unpleasant	Experiencing what you would prefer to avoid
We manage to feed her with just too little vegetables	We fail to make our child eat enough vegetables	Being unable to find out ways to doing things better	Having needs that are not met
I cannot imagine why it [our efforts in feeding the child] went wrong	I have no idea why we fail in our efforts	Being unable to find out ways to doing things better	Having needs that are not met

TABLE 2 Metaphors, themes and sub-themes

Metaphors	"A service in accordance with the expectations"	"You feel you do not fit in the framework"	"Description of what seems unpleasant"
Themes	Experiencing relevant counselling about food and feeding practices	Having needs that are not met	Experiencing what you would prefer to avoid
Sub-themes	Being satisfied because of sound and trustworthy information Being positively influenced by specific topics	Being disappointed because of perceived insufficient advice Being unable to find out ways to doing things better	Receiving advice that feels unpleasant Experiencing misunderstandings, scepticism or feeling overruled

4.1.1 | Being satisfied because of sound and trustworthy information

Many parents assessed the services at the CHC as trustworthy and the received nutrition information as sound and safe:

> I like getting information from the child health centre, because, yes, it's a source that… they don't mix a whole lot of other stuff in with it then. So I think it's a very reliable institution then. So I'm very positive about guidance from there. (q11)

According to some of the parents, the image-based communication tool tended to provide richer information than spoken sentences, for instance when presenting applicable portion sizes for children and exemplifying relevant alternatives for bread spreads:

> … it has been helpful to be able to see the type and amount of food that they are supposed to have at different ages then. That has been very good. Very smart to have some idea about how much she should have, I mean. Of course it is an individual thing… (q3)

> I thought that [picture] with toppings for bread was really good. To get some inspiration when you look at pictures, instead of just reciting a list. A bit easier to realize that you're not limited to spreading liver pâté… (q10)

Usually, the counselling on food and feeding practices and the image-based communication tool about diet were experienced as a supplement to the parents' dietary decisions.

The participants disclosed how the images in the communication tool were usually used by the PHN in a one-way information delivery, more than as a means to promote a conversation or a dialogue:

> Of course, there has been a lot of focus on fruits and vegetables, and they [at the child health centre] have [pointed at pictures and] asked a lot about what we give. What kind of milk and so on… (q12)

4.1.2 | Being positively influenced by specific topics

When asked if they could remember particular images, the parents usually mentioned images of vegetables and healthy choices of milk, particularly if initially in the interview they had expressed having a general interest in healthy food choices and considering these to be worthwhile. Images depicting sugar content in yoghurt gave some of the parents a reminder or a justification to choose yoghurt types with less sugar for their children. Moreover, the images most often mentioned spontaneously were images of vegetables, milk types, different bread spreads and an illustration of the child's hand as a measure for *one serving* of vegetable or fruit.

The parents who had experienced visiting the CHC earlier, with an older child, emphasised that there was no particular difference in visiting the current consultations compared to earlier times:

> I didn't go through a project like this with the other children. But the follow-up at the child health centre has been very similar. It has been much the same. But when you are involved in a project like this, then maybe you get a bit more focus on having the right diet and so on. ... (q8)

The parents thus commented how this time, because of the focus of the communication tool about diet, they had experienced more than before that they were positively influenced to reflect on food choices in their daily life. However, no one reported any perceived change in their dietary decisions because of counselling on these themes at the CHC. Many parents were convinced that their healthy food choices depended on influence during their own childhood.

Only occasionally was the child's growth referred to or mentioned in the interviews. This was usually in connection to the parents' worries about low weight gain of the child or to the child's food refusal:

> In the period when she wasn't eating so much, we got very good help there [at the child health centre] about what we could do and add to the food. Because she had a period when she was not putting on that much weight. (q3)

None of the parents mentioned CHC counselling related to actual overweight of the child. However, several parents mentioned spontaneously in the interviews that their child was not overweight. They seemed to be explaining that they did not need advice on food choices intended to prevent overweight.

4.2 | Having needs that are not met

Some parents expressed a feeling of not fitting in the framework of the CHC because of experiencing that their needs had not been met at the CHC.

4.2.1 | Being disappointed because of perceived insufficient advice

Parents who experienced not being part of the majority due to the child's required diet, for example due to allergy, expressed that they had desired support and dietary counselling that they were not able to receive at the CHC. They had however experienced a helpful and often compassionate attitude at the CHC. This attitude was perceived as uncomfortable because in a way it was replacing the advice, knowledge and support the parents sought but could not get to meet their needs. Indeed, they sometimes had received dietary advice at the CHC, which later proved to be incorrect. They also stated that they sometimes experienced effort and long waiting times at the CHC before they could get in touch with competent personnel because of their child's food allergy:

> She [the public health nurse] tried after all ... she was very much involved. So she tried to help us with that as well as she could. But after all we knew what the problem was already, it was actually just that kind of expertise on nutrition – on what we could use, how this would develop in a way, what we needed... At least the [child health centre] has found out who we can get in touch with to find out a bit more ... (q2)

Some parents had expected to get more adapted, updated advice on when to start giving solid food to the child than they had received from the CHC.

First-time parents expressed high expectations of getting definite answers to their nutritional queries at the CHC. Later, they experienced that this was not possible:

> So there are things that are changing all the time [related to guidelines about infant nutrition]. I don't really know whether... After all perhaps I was never told when ... how early one must or one should introduce solid food. So I tried to talk to my mom and so on [...] I mean you don't know that kind of stuff, at least not the first time you have a baby. (q1)

Thus, if parents did not experience receiving adequate information about the child's food and feeding at the CHC, they mentioned how they sought advice from others, for instance from close family.

Some parents had on their own initiative and with great success given their infants salty foods, for instance strong cheese and smoked or salty fish, to introduce different tastes. Other common approaches to introducing new flavours were small pieces of bread or porridge for babies.

4.2.2 | Being unable to find out ways to doing things better

After the child had reached the age of 15 months, some parents commented that they suddenly experienced time pressure in the

consultations at the CHC, with too little time to talk about food and feeding practices. In particular, some participants revealed how challenging it was, for instance, when the child suddenly became a "picky eater" at one year of age. Sometimes this rejection of foods, often vegetables, was still a reality when the child's was 2.5 years old. Thus, parents expressed helplessness and concern because they experienced that relevant counselling was difficult to find.

4.3 | Experiencing what you would prefer to avoid

Some parents had experienced unpleasant situations, for instance if their own family's diet preferences were not in line with the healthy diet recommendations presented at the CHC or if the mother was not able to breastfeed.

4.3.1 | Receiving advice that feels unpleasant

Parents who mentioned intrusive discussion about healthy food at the CHC usually argued that they did not agree with the messages in the communication tool about diet. In particular, the parents who mentioned an image illustrating milk's benefits based on lower fat content reacted to this:

> I think there's a bit of hysteria then, when you have children and the activity level they have, then they can just about eat what they want,... then I think that the advice on diet we've had from the child health centre, it's fine to have that as a guideline, just as long as you don't feel that it's being forced upon you, because then it gets like that, it gets too much ... (q5)

Thus, the parents defended some of their own food choices that differed from what CHC staff maintained was healthy and advisable.

4.3.2 | Experiencing misunderstandings, scepticism or feeling overruled

Some parents had misunderstood the images of the recommended amount of fruit or vegetables to be given to the child. Some parents had interpreted an illustration of a child's hand holding fruit as showing that this amount of fruit placed in the child's hand was a *maximum amount* of fruit or vegetables to offer the child per serving:

> I had some aha experiences, especially from the picture with a [child's] fistful of fruit. It surprises me that it is sooo little. And I took that with me, So, even if I maybe didn't manage to keep to a fistful of grapes and so on, I have cut down a lot in relation to those things... (q7)

However, the purpose of the illustration of the child's hand holding fruit was to point out a *minimum amount* of fruit or vegetables per serving.

If the mother was not successful in breastfeeding, she might have experienced feeling overwhelmed by a one-sided focus on breastfeeding at the CHC:

> ... you get a whole lot of guidance and a whole lot of pro-breastfeeding. ... when I switched to formula I had a very guilty conscience. So it was kind of, sort of very sad, that I didn't manage to continue [breastfeeding]. (q9)

> They [at the child health centre] were very insistent, "breastfeed a little more, a little more, a little more, a little more"... Of course I understand that they would really like me to breastfeed, but at one point I had had enough. (q6)

Scepticism related to recommendations was expressed particularly if parents had noticed that the PHN herself seemed not to be convinced in relation to the counselling she was assigned to give:

> ... Of course they follow the authorities' recommendations very closely [at the child health centre]. I feel that it's a bit, very rigid then. That maybe you can go a little bit outside the lines sometimes. And think for yourself then. ... and then the public health nurse comes up with: "that she just had to say" ... and then she [the public health nurse] could say something in private, something different, what she thought. [...] Some believe that what the authorities recommend is best, and then there are others who believe that other things are best. So, therefore I do a bit sort of what I feel is right then. (q6)

Scepticism due to the mother's experience of one-sided and unbalanced breastfeeding advice from the CHC was also mentioned in the interviews. A mother described how she felt left alone with worries and difficulties related to breastfeeding her child. In this situation, the mother decided to feed her child exclusively based on what she herself "felt there and then" because she felt that no support was available to her from healthcare personnel at the CHC.

5 | DISCUSSION

The findings of this study indicate how counselling about food and feeding practices at the CHC using a communication tool about diet was primarily based on the PHN presenting images of healthy food choices to the parents. Hence, use of the communication tool about diet was not always experienced as consistent with what had been the basic idea, namely to promote a two-way dialogue about food and feeding practices, based on a motivational interviewing approach to counselling (Miller & Rollnick, 2013). The PHN usually showed images to the parents in order to present healthy food

choices and asked the parents: "Does your child eat this?" thus not always promoting any dialogue with the parents. A "motivational interviewing way" of counselling, inviting the parents to a dialogue, might have included questions such as: "How does this image relate to your child's diet?" and further: "What do you think about this?" (Miller & Rollnick, 2013). In counselling parents, PHNs might have discussed topics, such as disadvantages of coercive feeding practices, or alternatives to restricting food and pressuring children to eat (Scaglioni, Salvioni, & Galimberti, 2008) or supporting parents in their attempts at responsive feeding practices (Schwartz et al., 2011). None of the parents mentioned that such aspects had been discussed with them at the CHC. However, the parents mostly experienced the counselling as positive because they perceived an enhanced focus on healthy food choices in their everyday lives. None of the parents however experienced that use of the communication tool about diet influenced them to follow a generally healthier diet for their child or family.

Some of the parents commented on how, now that the child was 2.5 years old, they had been seeking advice and counselling ever since their child at the age of 1 year had suddenly become selective in terms of food, and often refused to eat vegetables, in particular. They had experienced that after the child's infancy, they were often left on their own with nutrition concerns at the CHC and felt unable to find adequate ways to cope with their queries related to their child's nutrition. There was usually too little time at CHC consultations to address these concerns. Thus, there seems to be a preponderance of counselling at the CHC about food and feeding practices during infancy in relation to after infancy and later on. This seems inappropriate because most of the child's transition to table food occurs between 1–2 years of age (Birch & Doub, 2014). Thus, counselling in this period should focus on the child's early experience with food, including exposure to a variety of foods and flavours, to expand the boundaries of the familiar. If this is neglected, the diet might continue to be dominated by sweet or salty foods that are readily accepted without familiarisation (Birch & Doub, 2014). Accordingly, repeated exposures to novel foods as well as variety and diversity in the diet should be key points to consider in counselling parents (Stang, 2006).

Based on the findings, satisfaction among parents with the received image-based counselling about food and feeding practices tended to depend on what expectations and needs they had in advance, before visiting the CHC. If the parents' expectations of counselling coincided with the counselling they experienced, they perceived this in a positive way. The opposite occurred when the parents did not feel that they fitted into the framework of the CHC, because their queries about food and feeding practices were not met with adequate advice at the CHC. This was often the case if their child had a food allergy. Hence, these parents often experienced distress and uncertainty because of insufficient response from the CHC. They had even experienced poor support or advice that tended to be wrong at the CHC. The parents thus longed for evidence-based counselling that should usually have been the responsibility of specialists. This reflects findings in a previous descriptive questionnaire study by Ilmonen et al. (2012), among nurses (n = 327) at institutions similar to the CHC in Finland. This study revealed how nurses considered nutrition counselling important and expressed a need for nutrition education in both nursing studies and in-service training. They experienced nutrition counselling as challenging, particularly in situations when nurses found themselves managing nutrition concerns related to diseases that specialists generally should deal with. Hence, it was emphasised that the healthcare management should become aware of this phenomenon and make administrative arrangements to ensure the quality of nutritional preventive care by increasing of dietetic services as well as in-service training in nutrition knowledge and counselling skills (Ilmonen et al., 2012).

The current study indicated how some mothers had experienced unpleasant situations, feeling overwhelmed or misinformed. Often this was related to the mother's desire to breastfeed and concurrent challenges. A perceived pressure to breastfeed from the CHC could be reality in this situation. These findings are supported in a recent qualitative interview study. Findings from this study indicated how some mothers felt guilt and felt stigmatised if they were forced to give up breastfeeding in favour of formula feeding. These mothers stated that they had experienced limited support from the CHC (Hvatum & Glavin, 2017).

Some parents in the present study described how they claimed to think for themselves. This might have originated from their perception of the nutritional advice at the CHC as unhelpful because it did not correspond to their daily living habits. Other parents' nutritional beliefs did not match what was presented as healthy at the CHC. These parents expressed how counselling at the CHC was not perceived as helpful; they felt overruled because the information conflicted with what they considered best. In these situations, it was obvious that the current parents had not experienced any counselling about food and feeding practices as grounded in a two-way dialogue initiated by the PHN and adapted to the awareness and needs of the particular parent or family. This reflects the limited impact that practising a one-sided cognitive approach towards eating seems to have on healthy food choices (Marty, Chambaron, Nicklaus, & Monnery-Patris, 2018). A basic principle for using the communication tool about diet had been to encourage a two-way dialogue in order to adapt nutrition counselling to the needs of each family (Miller & Rollnick, 2013). However, the use of this tool in the current study was not always in accordance with this intention.

Families with a low educational level might need additional support regarding the child's healthy diet (Luque et al., 2018; Rasmussen et al., 2006; Vepsäläinen et al., 2018). Under similar circumstances, counselling based on contextual cues such as "having a good time" generated by parental attitudes related to food and feeding instead of an unbalanced educational approach to counselling might encourage adoption of a balanced diet in the long term (Marty et al., 2018). It is acknowledged that the effect of nutrition education as such is modest and usually decreases over time. In contrast, governmental pricing interventions making healthy foods more affordable than unhealthy foods appear consistently powerful in promoting healthy eating habits (Hyseni et al., 2017).

Mothers' confusion because of experienced ambiguity in recommendations at the CHC, for instance on when to start introducing solid food to their child, and poor support from the PHN regarding their baby's general diet was commented on in the present study as in a previous study (Arden, 2010).

According to guidelines (Norwegian Directorate of Health, 2017), PHNs are obliged to relate to updated evidence regarding, for instance, encouraging replacement of saturated fatty acids with unsaturated fatty acids, and lower intake of saturated fatty acids in general. This is beneficial for the prevention of cardiovascular diseases (National Nutrition Council in Norway, 2017). However, the findings indicated how some mothers experienced that the PHN could act as though not convinced about the evidence mentioned. This concerned food and feeding practices related to the content of fat in the food—for instance, whether to choose skimmed milk and margarine as recommended in the national dietary guidelines (National Nutrition Council in Norway, 2017) or to prefer giving whole milk and butter to the child instead. In these situations, the parents tended to evaluate the dietary counselling at the CHC as uncertain and thus sometimes chose to follow less evidence-based dietary advice, for instance supported by friends and family, or just doing what they felt like there and then, following maternal beliefs instead of knowledge (Harrison, Brodribb, & Hepworth, 2017).

Findings from the interviews also showed how images might have the opposite effect of what had been intended and even have the potential for harm, as emphasised in the literature (Williams & Cameron, 2009). This was particularly evident related to an image exemplifying a minimum amount of vegetables and fruits for children in one portion, erroneously interpreted by some of the parents as maximum amounts to be given. Thus, to prevent misunderstandings, the communication tool about diet should be used in accordance with the accompanying manual. This manual implies the PHN presenting selected images and explaining orally the intention of each of them.

5.1 | Limitations of this study

This study's findings relate to experiences from a sample of parents selected by convenience in four municipalities, in order to illuminate a particular phenomenon under observation. This limits generalisability of results.

Concerns on trustworthiness (Polit & Beck, 2017) including aspects of transferability, credibility and confirmability of the research (Guba & Lincoln, 1989) have been key in conducting this study. Among other things, the standardised information in advance regarding every PHN's use of the image-based communication tool about diet has been central to enhance research credibility. Thus, the participants' feedback on the communication tool about diet could be a basis for further development of this tool and is salient for the transferability of this study's results.

On average, 12 months had passed since the parents had last visited the CHC for consultations where the communication tool had been used. This might have influenced what they were able to remember of the content and images of this tool, and related experiences.

6 | CONCLUSION

The PHN's use of the communication tool was not always in accordance with the basic idea of the tool, which was to initiate a two-way dialogue with parents reflecting their current feeding habits and potential needs. However, the use of a communication tool about diet seemed to enhance parental focus on healthy food choices in general among those parents whose feeding practices and family meals reflected food choices that were considered as healthy at the CHC. A main issue identified in this study was that parental expectations and needs have an impact on their satisfaction in relation to perceived counselling about food and feeding practices at the CHC. For instance, parents who had succeeded in breastfeeding their child and expected answers related to the child's low weight gain usually experienced the service at the CHC as positive and relevant regarding nutrition counselling.

If parents had queries about diets for their child other than the usual ones recommended at the CHC, they often felt as though they did not fit into the framework of the CHC. Particularly if the child's food allergy was mentioned as a concern, parents did not experience adequate support from the CHC as they had expected.

Some parents experienced the dietary foci of the CHC as unpleasant and intrusive, or they felt overwhelmed with information. This was particularly clear if their chosen diets did not correspond with those recommended at the CHC. These parents did not perceive the counselling at the CHC as adapted to their daily life and situation of their child. The counselling about food and feeding practices was occasionally experienced as too sparse at the time when the child aged 1–2 years visited the CHC with their parents.

Some parents expressed confusion because of perceived ambiguity in the recommendations regarding food and feeding practices at the CHC. Particularly if the counselling PHN seemed unconvinced about the basis for the advice, she was supposed to give. The amount and type of fat to choose in the child's diet were mentioned as triggering doubts in some PHNs.

Future studies should focus on the PHNs' experiences using the communication tool about diet. Moreover, there should be a sharper focus on the competence of PHNs to meet parents with differing needs and beliefs related to their child's diet.

7 | RELEVANCE TO CLINICAL PRACTICE

To counteract inequality in the services at the CHC regarding counselling about food and feeding practices, it is essential for PHNs to be aware of a potential mismatch between the needs of some parents and their experience of support at the CHC. The PHN's active promotion of a two-way dialogue, inviting parents to express their needs and expectations related to food and feeding concerns, could

help to bridge this gap. The PHN's use of a communication tool about diet could be pivotal as a medium to achieve a mutual focus of the participating family and the PHN regarding food and feeding themes. Based on this, the parent could gain an opportunity to express their own needs and concerns in relation to their child's food and feeding practices, particularly in situations where these might differ from those of the majority.

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SOMAH = A Norwegian-language acronym based on "**S**amtaler **o**m **ma**t på **h**elsestasjonen" ["Conversation about food at the child health centre"]. Twenty images and a users' manual, from the SOMAH communication tool produced in the earlier SOMAH project, 2009–2013, at OsloMet—Oslo Metropolitan University, constituted the basis for designing the communication tool about diet as described in the manuscript.

CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

CONTRIBUTIONS

Study design: BHF, KG and SH. Facilitation to data collection and collected the data: BHF. Data analysis contribution: BHF, KG and SH. Contribution to drafting the manuscript and read and approved the final manuscript: BHF, KG and SH.

DATA ACCESSIBILITY

The data sets generated and analysed during the current study are not publicly available. This is due to the application to the Regional Committees for Medical and Health Research Ethics ahead of this study, which did not include a request to make data from the interviews publicly available. Ethical and legal restrictions related to confidentiality of study participants prohibit publicly available datasets.

ETHICS APPROVAL

Regional Committees for Medical and Health Research Ethics approved the study (reference number: 2014/726).

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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Paper IV

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RESEARCH ARTICLE

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The use of a communication tool about diet at the child health centre: A cluster randomized controlled trial

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Abstract

Aim: To investigate the effect of a communication tool about diet used in public health nurse consultations with parents compared with standard consultations concerning the 2-year-old child's diet.

Design: A cluster randomized controlled trial.

Methods: Ten municipalities were selected randomly and matched in pairs. In each pair, the control or intervention group was randomly allocated. Parents were recruited to participate from January 2015 to January 2017. In intervention clusters, a communication tool about diet was used to help the parents (N = 140) to focus on a healthy diet for their child. In the control clusters, parents (N = 110) attended standard consultations. The participants completed semi-quantitative food frequency questionnaires at baseline and end point.

Results: No effect of the intervention was seen on the child's daily intake of vegetables or saturated fat, or body mass index. Significantly fewer parents desired more information about food for toddlers in the intervention than in the control group.

KEYWORDS

child, child health services, clinical trial, counselling, food, nursing, nutrition, preschool child, public health nursing, vegetables

1 | INTRODUCTION

According to Statistics Norway (2016), almost all parents and their under-school-aged children in Norway use child health centres (CHCs) providing extensive, widely available preventive health care in the municipalities on a voluntary basis and free of charge (Norwegian Directorate of Health, 2017). Aspects of food and feeding practices are central to the counselling schedule of public health nurses (PHNs) at the CHC (Norwegian Directorate of Health, 2016, 2017). This reflects parents' search for trustworthy information if they have concerns and queries related to their children's food and feeding practices (Holmberg Fagerlund, Helseth, Andersen, Småstuen, & Glavin, 2018). It is essential for parents to have a good understanding of their child's nutritional requirements because young children are totally dependent on their parents making decisions for them (Hobbie, Baker, & Bayerl, 2000).

2 | BACKGROUND

Public health nurses often find it complicated to deal with nutrition and counselling about children's diet in their everyday

practice (Holmberg Fagerlund, Pettersen, Terragni, & Glavin, 2016; Ilmonen, Isolauri, & Laitinen, 2012; Magnusson, Kjellgren, & Winkvist, 2012). Counselling based on a one-sided cognitive approach towards eating appears to have limited impact on healthy food choices among children. A review indicated that deriving pleasure from eating healthy foods or from contextual cues generated by parental attitudes to food and feeding might encourage children to adopt a balanced diet in the long term (Marty, Chambaron, Nicklaus, & Monnery-Patris, 2018). An association between healthy dietary habits in children and parents having higher education has been shown in several studies (Luque et al., 2018; Rasmussen et al., 2006; Vepsäläinen et al., 2018). A questionnaire study among parents (N = 234) of 1- to 5-year-old children revealed that short-duration breastfeeding or the food neophobia in the child was associated with a risk of poor dietary patterns in children later. No associations were found between the dietary patterns of children and the age when solid foods had been introduced (Bell, Jansen, Mallan, Magarey, & Daniels, 2018). A longitudinal study among children (N = 633) in five European countries by Luque et al. (2018) indicated that educational interventions should focus not only on the introduction of positively weighted foods, but also on avoidance of discretionary low-quality foods at early ages. Dietary patterns, particularly between 1 and 2 years, persisted into mid-childhood or 8 years of age.

A Swedish questionnaire survey among parents (N = 478) suggested that parents could become less concerned about their child over- or undereating if they were offered skills training and practical counselling on how to respond effectively to eating behaviours, regardless of the child's weight (Ek et al., 2016).

According to a review by Holmberg Fagerlund, Helseth, Owe, and Glavin (2017), there is limited research on the effect of universal food and feeding counselling involving children under 2 years and their families. At Oslo Metropolitan University, an image-based communication tool about diet was developed in a previous project named SOMAH (The Research Council of Norway, 2013). This project aimed to facilitate communication about food and feeding practices at CHCs. The target group was immigrant populations with an increased risk of developing type 2 diabetes (Garnweidner, 2013; Holmberg Fagerlund, Helseth, & Glavin, 2019; The Research Council of Norway, 2013). This tool followed the recommendations of the National Nutrition Council in Norway (2011). A selection of the SOMAH images was adjusted and integrated into a communication tool about diet for universal use at the CHC in the present study. A motivational interviewing approach developed by Miller and Rollnick (2013) was integrated into this communication tool to optimize active collaboration about the child's diet between the PHN as counsellor and the collaborating parent.

The aim of the study was to investigate the effect of a communication tool about diet used in a PHN intervention at CHC consultations with parents compared with standard consultations concerning the child's diet at 2 years of age. The study hypothesized that the children in the intervention group would have a higher intake of vegetables, lower intake of saturated fat and lower body mass index (BMI) than those in the control group.

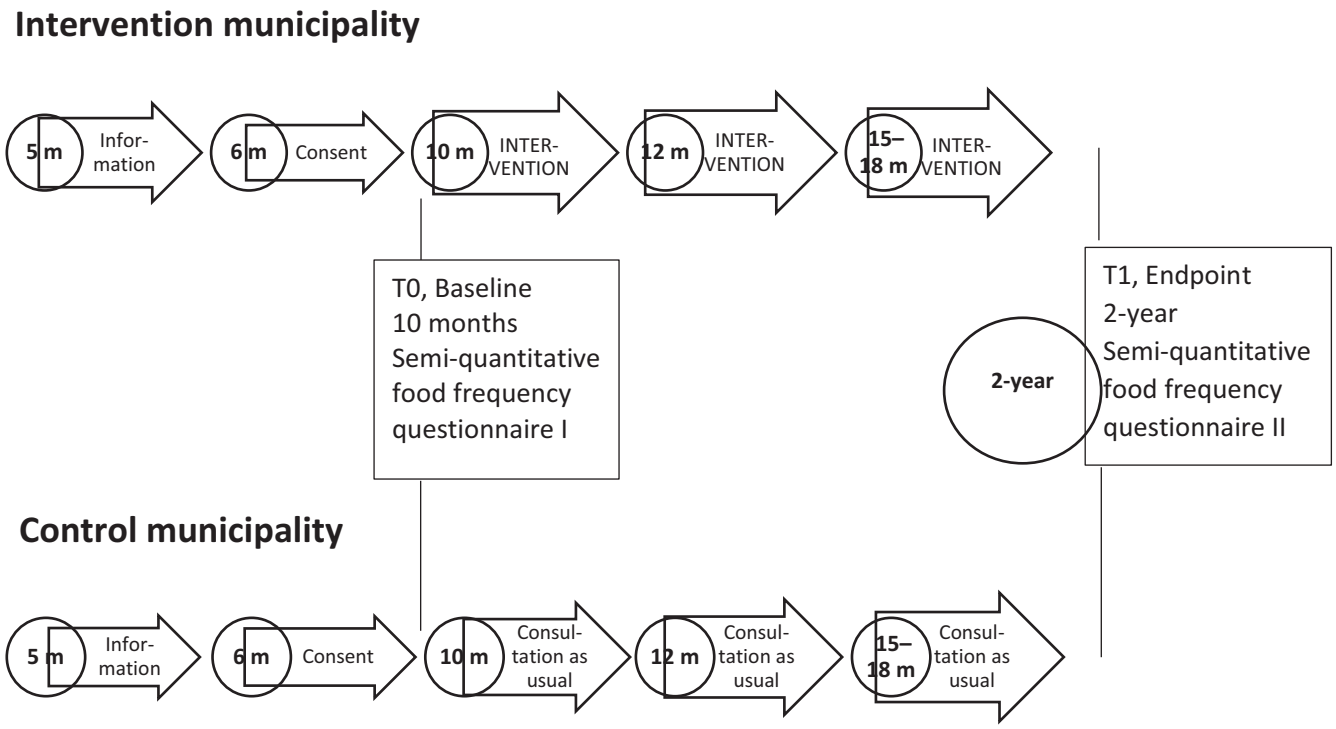

FIGURE 1 The timeline according to the child's age in the clusters consisting of intervention and control municipalities

3 | THE STUDY

3.1 | Design

The study design was a two-armed parallel cluster randomized controlled trial (cRCT). Clusters of municipalities were randomly assigned to two groups, intervention municipalities and control municipalities (Figure 1). Parents within the clusters answered a semi-quantitative food frequency questionnaire (SFFQ) on behalf of their child at baseline (T0) and end point (T1), on average 8–11 months after the end of the intervention. This clinical trial is registered at ClinicalTrials.gov, Identifier: NCT02266953.

3.2 | Sample

In total, five matched pairs of municipalities (clusters) were selected at random by Statistics Norway. The municipalities were matched on the following predefined variables: the number of births in 2012, the number of inhabitants and immigrants in 2013 and the proportion of highly educated inhabitants in 2012. Each

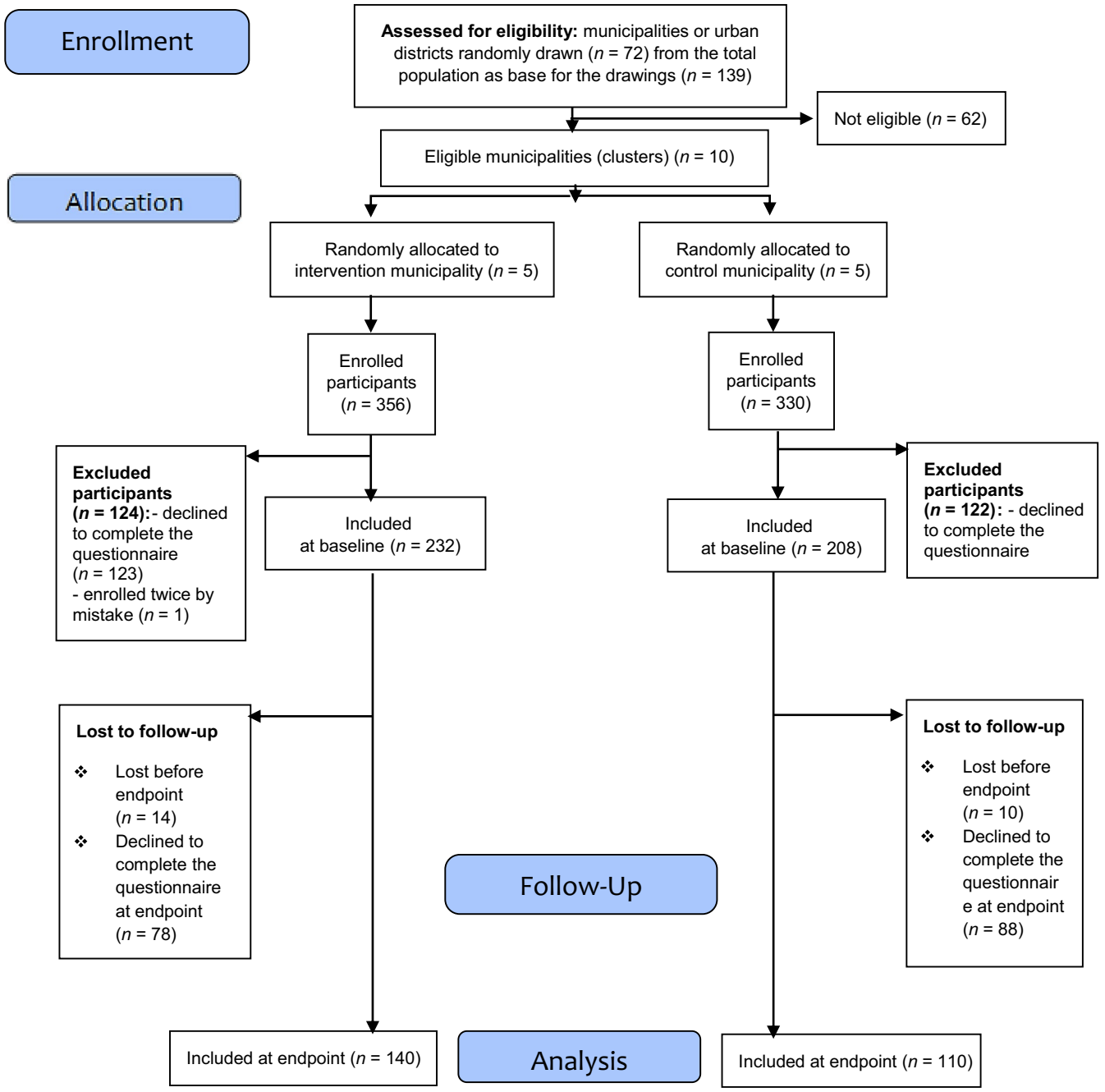

FIGURE 2 A flow diagram of the participant flow in the cluster randomized controlled trial according to the CONSORT extension for Cluster Trials (Campbell et al., 2012)

TABLE 1 An overview of the 20 images in the communication tool about diet

Themes at 10 months:	The image presenting:
1. "Infants learning to feed themselves"	A 1-year-old infant sitting in a high chair and using a bib, customized dishes and cutlery, finger food and appropriate food on a plate
2. "The Plate Model" (Camelon et al., 1998)	Proportions of the three food groups: carbohydrates (e.g. potatoes, pasta and bulgur), vegetables and proteins (e.g. meat, fish, beans, peas and eggs) and a spoon of plant-based oil
3. "Five a Day"	Depicting vegetables and fruit to encourage consumption of at least five portions of them each day
4. Whole grain bread	Depicting healthy alternatives and one example of an unhealthy choice
5. Healthy bread spreads	Depicting healthy alternatives and one example of an unhealthy choice
6. Healthy flavourings of natural yoghurt	Inspiring alternatives of berries and fruit to use as flavouring in yoghurt
7. Natural yoghurt as an alternative to sugary yoghurt	Comparing natural yoghurt without added sugar in relation to the amounts of added sugar in sweet yoghurt types
Themes at 12 months:	
1. "Infants learning to feed themselves"	The same image as at 10 months
2. Milk types	Contents of saturated fat in different types of milk
3. A portion of vegetables or fruit	The child's fist depicting the portion size
4. Whole grain porridge and cereals	Depicting healthy alternatives and one example of an unhealthy choice
5. Healthy flavourings of porridge	Inspiring alternatives of berries and fruit to use as flavouring in porridge
6. Water as an alternative to sugary drinks	Comparing water to the amounts of added sugar in sweetened milk and types of industrially produced juice
Themes at 15–18 months:	
1. "Toddlers learning to feed themselves"	A toddler sitting in a high chair picking food from a plate with a fork
2. "Parent acting as role model"	A mother eating a fruit in front of her toddler
3. Inspiration to choose vegetables	Presentation of 18 types of vegetables
4. Inspiration to choose fruit	Presentation of 18 fruit types
5. Whole grain pasta	Depicting healthy alternatives and one unhealthy choice
6. Whole grain rice	Depicting healthy alternatives and one unhealthy choice
7. Flavoured versus unflavoured milk	Presenting unflavoured milk types in relation to flavoured ones

cluster in a pair was randomly allocated to a control or an intervention group (Figure 2).

If one cluster in a pair declined to participate, this led to a new draw to obtain a systematic match to the remaining cluster. Thus, obtaining the sample of 10 clusters required contact with 72 municipalities (Figure 2). Twenty-five of the originally selected municipalities declined to participate in the research project. In addition, 20 of the drawn municipalities could not participate because they had not implemented the healthcare programme at the CHC in a way consistent with the authorities' regulations. Seventeen were excluded because their CHCs did not practise individual 10-month consultations.

Municipalities with fewer than 100 births in 2012 and municipalities in the three northernmost counties of Norway were excluded from the draw. Three municipalities were excluded because they had been involved in the development of the intervention. In total, 139 municipalities were available for the sampling.

The municipalities were contacted through their head of the CHC. Oral information about the research project was provided, and if accepted, written information about the project was sent. The study's participants consisted of parents with young children who had consented to participate in the trial before their child reached the age of 10 months. Parents were recruited during their visits at the CHC. The parents received oral and written information about the study from their PHN. The only exclusion criterion was parents with insufficient Norwegian skills to understand the written information about the study. Participants were recruited continuously from 5 January 2015 to 31 January 2017.

3.3 | Intervention

3.3.1 | Control municipalities

The participants and their children in the control municipalities followed the established individual CHC consultations when the child was 10, 12 and 15–18 months old (Norwegian Directorate of Health, 2004). These particular consultations were highlighted because PHNs typically consider counselling about food and feeding practices challenging when the child reaches the age of

weaning and gradually begins to eat the same food as the rest of the family (Holmberg Fagerlund et al., 2016). Based on the health authorities' guidelines, the consultations included an assessment of the child's development and growth. The consultations focused on topics such as breastfeeding and weaning at 10 months, the child's diet, dental health, child–parent interaction, sleep, mobility development, vaccinations and safety concerns. A physician examined the child during the 12-month consultation (Norwegian Directorate of Health, 2004). The dietary guidelines in effect recommended breastfeeding or formula milk during the first year of life. Gradual adaptation to cow's milk was proposed at 10–12 months of age. The dietary guidelines included suggestions for bread meals and applicable spreads, and some dinner dishes and meal rhythms. Milk types, food texture, dietary composition and vitamin supplements were usually focused on during counselling and in a brochure routinely distributed to parents (Lande & Arsky, 2002; Norwegian Directorate of Health, 2002).

3.3.2 | Intervention municipalities

In addition to the content mentioned above, the participants in the intervention municipalities were exposed to the intervention, the PHN's use of the communication tool about diet. In this intervention, the PHN presented to the parents six or seven printed images per consultation about different nutritional themes related to the child's age and developmental stage (Table 1). The images were A4 size and presented on a flip-chart stand at the PHN's desk. To ensure the selection of appropriate image material to be integrated into the communication tool about diet, a feasibility and acceptability test as outlined by Richards (2015) was performed in June–September 2014. Based on these images, parents were invited to discuss relevant themes regarding food and feeding practices, adapted to their family and child.

An aim of the communication tool about diet was to help the family choose an optimal diet for the child, raising the caregiver's awareness of food habits as central to the child's recent and long-term health. A further aim was to help the family adjust meals to give their child the opportunity to develop skills in eating and get used to different tastes. The authorities' labelling schemes designating healthy foods and dietary factors according to the authorities' recommendations were emphasized in the images and during the use of the communication tool about diet.

3.3.3 | The time frame in the municipalities

Implementation of the intervention was estimated to take approximately 10 min per consultation, usually regarded as taking between 20 and 30 min in total. Process evaluation was conducted to determine whether the intervention had been delivered as intended and the quantity of what was implemented. According to this, PHNs in the intervention municipalities reported that they used median 35.0 min (min. = 15.0 min, max. = 60.0 min) per featured consultation. Reported median time for performing the intervention was 10.0 min (min. = 2.0 min, max. = 30.0 min). In the control municipalities, the PHNs reported median use of 30.0 min (min. = 20.0 min, max. = 60.0 min) per featured consultation.

3.3.4 | Preparations for implementation

Before implementation of the trial, the first author had visited all cooperating CHCs to prepare the PHNs by explaining about the trial and about their tasks. This preparation lasted 2–3 hr on average. In intervention municipalities, a standardized 1-hr introduction on the use of the communication tool about diet and the corresponding user's manual was included. To minimize likely performance bias and expectation bias related to awareness, information about the study outcomes was withheld during the preparations. This was to enhance objectivity among the cooperating PHNs and participants as described by Polit and Beck (2017).

To accelerate recruitment effort, the PHNs were kept motivated and reminded about this project through monthly contact with their managers by email or telephone. For the same reason, the first author visited all CHCs during the recruitment process.

3.4 | Data collection

3.4.1 | The semi-quantitative food frequency questionnaires

The SFFQ at baseline, designed to investigate feeding practices of 10-month-old infants, was a revised version of a validated and standardized SFFQ developed for a national dietary survey among 12-month-old infants in Norway in 2007 (Kristiansen, Lande, Øverby, & Andersen, 2010; Øverby, Kristiansen, Andersen, & Lande, 2009).

The SFFQ at end point was a revised version of a validated and standardized SFFQ developed for a national dietary survey among 2-year-old children in Norway during 3 months in 2007 (Kristiansen, Andersen, & Lande, 2009; Kristiansen, Lande, Sexton, & Andersen, 2013).

The revisions and updates in these current SFFQs included new types of formula milk for children, a new type of children's yoghurt replacing an older type, children's porridge containing milk that replaced older types without milk, a soft cheese product that replaced an old type, updated designations of margarines and exclusion of a baby food product no longer on sale. Spinach was removed because it should not be given in large amounts to infants (Norwegian Food Safety Authority, 2011). There was no focus on organic food, and questions about organic food were removed. Questions regarding the weight and length of the child at 6 and 10 months, the mother's use of smokeless tobacco and the mother's country of origin were added in the present SFFQs. Apart from this, the SFFQs consisted of questions described in detail by Kristiansen et al. (2009) and Kristiansen et al. (2010).

At baseline, the parents who had consented to participate received an SFFQ when the child was approximately 8.5 months old. They were asked to complete and return this SFFQ just before the child's 10-month consultation at the CHC. At end point, the SFFQ was sent to the parents just after the 2-year consultation at the CHC.

The paper format SFFQs were sent by postal mail accompanied by written information about the survey, a photographic booklet depicting different portion sizes to use when answering the SFFQ and a reply envelope. At baseline and end point, the parents usually received a telephone call to remind them about the questionnaire. Completion of each of the SFFQs was estimated to take about 40 min. Data were collected from 4 March 2015 until 28 June 2018.

3.4.2 | Nutrient calculations

Daily intake of energy, nutrients and food groups was computed using a food database in diet calculation software known as *KBS [= KostBeregningsSystemet]*, in Norwegian, version 7.3, developed at the Department of Nutrition, University of Oslo. The relevant food database is mainly based on a version of the official Norwegian food composition table (Kristiansen, Laugsand Lillegaard, & Andersen, 2013). The food database AE-10, based on the official Norwegian food composition table of 2006, was used in the SFFQs (Norwegian Food Safety Authority, 2016).

3.4.3 | Age- and gender-related body mass index

Overweight was estimated at the cut-off point of BMI 25. BMI 25 is equivalent to BMI 18 adapted to the child's age and gender among 2-year-old children (Cole, Bellizzi, Flegal, & Dietz, 2000).

3.5 | Outcomes

3.5.1 | Primary outcome

The primary outcome was daily intake of vegetables measured as grams of consumed vegetables per child, based on the completed SFFQs.

3.5.2 | Secondary outcomes

The study evaluated several secondary outcomes: the percentage of energy intake (E%) of saturated fatty acids of the total daily energy intake of the child, based on the completed SFFQs; the child's BMI, based on the completed SFFQs; and lastly the number (proportion) of parents who reported a wish to obtain more information about their toddler's diet, based on the completed SFFQs.

3.6 | Data analysis

3.6.1 | Sample size consideration

The study was powered to reveal a predefined change in vegetable intake between the intervention and control groups. According to the literature, children consume on average 50 g vegetables daily at the age of 2 years (Kristiansen et al., 2009). Thus, we expected this daily intake of vegetables to increase by 15 g in the intervention group as compared to the control group. To keep the level of statistical significance at 5% and statistical power of 80% (beta = 20%), we would need 176 children in each group to determine whether the change described above was statistically significant. Attrition was expected, and 300 children were enrolled in each group to make sure our study was sufficiently powered.

3.6.2 | Statistical analyses

All statistical analyses were performed using *IBM SPSS Statistics for Windows ®, version 24.0., IBM Corporation®*. Continuous data were described with median and range (data with skewed distribution) or mean and standard deviation (normally distributed data). Categorical data were presented with counts and percentages. Unadjusted differences between intervention and control group were assessed with *t* tests (for continuous normally distributed variables) and the Mann–Whitney–Wilcoxon test if the data were not normally distributed. Chi-square tests were performed when we tested for association between pairs of categorical data. A correction for multiple testing was performed, and *p*-values <.01 were considered statistically significant. All analyses were performed according to intention-to-treat principles, and no imputation of missing data was performed.

3.7 | Ethics

All participating parents gave their written informed consent. Participation was voluntary, and the participants could withdraw without giving a reason. All data were treated as confidential. Participant anonymity was guaranteed. Regional Committees for Medical and Health Research Ethics approved the study, reference number: 2014/726. Reporting adhered to the CONSORT extension for Cluster Trials (Campbell, Piaggio, Elbourne, & Altman, 2012).

4 | RESULTS

Analysis of completers versus non-completers was conducted at baseline. This revealed comparable groups among the completers and non-completers of the SFFQ at baseline concerning the background variables, except for fewer married and single mothers and more cohabitant mothers among the completers. This analysis also showed a somewhat higher educational level among mothers and

TABLE 2 Differences between completers and non-completers at baseline

Variables	Completers (*N* = 250)	Non-completers (*N* = 190)	*p*-value*
Mother's age (years), median (range)	31.0 (21–43)	30.0 (18–46)	.27[a]
Missing data	9	14	
Mother's marital status, *N* (%)			
Married	127 (51.2)	108 (57.1)	.04[b]
Cohabitant	117 (47.2)	72 (38.1)	
Not married or cohabitant	4 (1.6)	9 (4.8)	
Missing data	2	1	
Mother's country of origin			
Norway	230 (92.0)	171 (90)	.74[b]
Rest of Europe	14 (5.6)	14 (7.4)	
Outside Europe	6 (2.4)	5 (2.6)	
Mother working outside home or studying[c]			
Yes	81 (32.5)	68 (35.8)	.48[b]
No	168 (67.5)	122 (64.2)	
Missing data	1	–	
Mother smoking			
Yes	14 (5.7)	6 (3.2)	.22[b]
No	230 (94.3)	179 (96.8)	
Missing data	6	5	
Mother using smokeless tobacco			
Yes	15 (6.1)	15 (8.1)	.43[b]
No	229 (93.9)	170 (91.9)	
Missing data	6	5	
Mother's number of children			
1	110 (44.2)	85 (44.7)	.84[b]
2	100 (40.2)	70 (36.8)	
3	31 (12.4)	27 (14.2)	
≥4	8 (3.2)	8 (4.2)	
Missing data	1	–	
Mother's education			
Below upper secondary education	4 (1.6)	6 (3.2)	.04[b]
Upper secondary education[d]	57 (22.9)	61 (32.1)	
Higher education, short	123 (49.4)	71 (37.4)	
Higher education, long	65 (26.1)	52 (27.1)	
Missing data	1	–	
Father's education			
Below upper secondary education	2 (0.8)	10 (5.3)	.04[b]
Upper secondary education[d]	130 (53.1)	91 (48.7)	
Higher education, short	69 (28.2)	51 (27.3)	
Higher education, long	43 (17.6)	33 (17.6)	
Missing data	6	5	
Gestational age of the child at birth (weeks)[d]			
≥38	224 (90.0)	164 (86.3)	.24[b]
<38	25 (10.0)	26 (13.7)	
Missing data	1	–	

(Continues)

TABLE 2 (Continued)

Variables	Completers (*N* = 250)	Non-completers (*N* = 190)	*p*-value*
Age of the child (months)[c], mean (*SD*)	9.8 (0.44)	9.8 (0.44)	
Missing data	9	14	.27[a]
Gender of the child[d]			
Female	126 (50.4)	87 (45.8)	.34[b]
Male	124 (49.6)	103 (54.2)	
Child's[e] birthweight (g), mean (*SD*)	3,526.7 (545.6)	3,558.2 (575.4)	.57[a]
Missing data	7	12	
The child breastfed[c], *N* (%)			
Yes, currently	130 (52.0)	102 (54.5)	.58[b]
No, but earlier	115 (46.0)	79 (42.2)	
No, never	5 (2.0)	6 (3.2)	
Missing data	–	3	
Parental wish for more information about food for toddlers, *N* (%)			
Yes	138 (55.2)	101 (53.4)	.06[b]
No	102 (40.8)	70 (37.0)	
Do not know	10 (4.0)	18 (9.5)	
Missing data	–	1	
Parents avoid offering applicable food because they are afraid that the child might react with allergy or hypersensitivity			
Yes	81 (33.1)	70 (38.0)	0.28[b]
No	164 (66.9)	114 (62.0)	
Missing data	5	6	

[a]*t* test for equality of means; equal variances assumed.
[b]Chi-square test.
[c]At the time of completion of the food frequency questionnaire baseline.
[d]Tertiary vocational education is included.
[e]The child referred to in the food frequency questionnaire.
**p*-values <.05 considered as statistically significant differences between groups.

fathers who completed the SFFQ (Table 2). According to process evaluation, the median time for performing the intervention was 10 min in the intervention municipalities.

4.1 | Participant flow

Two hundred and thirty-two participants responded to the SFFQ in the intervention municipalities (65% response rate) and 208 in the control municipalities (63% response rate) at baseline (Figure 2). At the end of follow-up, 140 participants in intervention municipalities (39% response rate) and 110 participants in control municipalities (33% response rate) had completed the SFFQ (Figure 2). Table 3 shows that the distribution of the selected background variables was similar in the intervention and the control municipalities.

4.2 | The main outcome

The median age of the included children was 2.2 years in both groups at the time of completion of the SFFQ at end point (Table 4). Our data revealed only small differences in the background characteristics between the groups at 2 years, except for a significantly higher proportion of the mothers in the intervention municipalities who were either married or cohabitants compared to the control group, 98.5% versus 93.6%.

We did not find any statistically significant differences between the intervention group and the control group concerning the main outcome, the mean daily intake of vegetables, 64.5 g versus 68.7 g (Table 5).

4.3 | Secondary outcomes

Our study did not reveal any statistically significant differences between the groups regarding consumption of saturated fat or BMI among children aged 2 years. However, a statistically significant difference was revealed concerning the desire for more information. Fewer of the parents in the intervention municipalities than in the control municipalities reported that they desired more information about food for toddlers, 24.4% versus 41.1% (Table 5).

TABLE 3 Differences between intervention and control municipalities at baseline

Variables	Intervention municipality (*N* = 232)	Control municipality (*N* = 208)	*p*-value*
Mother's age (years), median (range)	30 (18–43)	31 (18–46)	.17[a]
Missing data			
Mother's marital status, *N* (%)			
Cohabitant	126 (54.3)	109 (53.2)	.97[b]
Married	99 (42.7)	90 (43.9)	
Single	7 (3.0)	6 (2.9)	
Missing data	–	3	
Mother's country of origin, *N* (%)			
Norway	214 (92.2)	187 (89.9)	.69[b]
Rest of Europe	13 (5.6)	15 (7.2)	
Outside Europe	5 (2.2)	6 (2.9)	
Mother working outside home or studying[c]			
Yes	78 (33.6)	71 (34.3)	.88[b]
No	154 (66.4)	136 (65.7)	
Missing data	–	1	
Mother smoking, *N* (%)			
Yes, daily	4 (1.7)	6 (2.9)	.30[b]
Yes, occasionally	8 (3.4)	3 (1.4)	
No	220 (94.8)	199 (95.7)	
Mother using smokeless tobacco			
Yes, daily	11 (4.7)	11 (5.3)	.83[b]
Yes, occasionally	5 (2.2)	3 (1.4)	
No	216 (93.1)	194 (93.3)	
Mother's number of children			
1	103 (44.4)	92 (44.4)	.44[b]
2	84 (36.2)	86 (41.5)	
3	35 (15.1)	23 (11.1)	
≥4	10 (4.3)	6 (2.9)	
Missing data	–	1	
Mother's education			
Below upper secondary education	5 (2.2)	5 (2.4)	.93[b]
Upper secondary education[d]	62 (26.8)	56 (26.9)	
Higher education, short	105 (45.5)	89 (42.8)	
Higher education, long	59 (25.5)	58 (27.9)	
Missing data	1	–	
Father's education			
Below upper secondary education	7 (3.0)	5 (2.5)	.60[b]
Upper secondary education[d]	125 (54.3)	96 (47.5)	
Higher education, short	58 (25.2)	62 (30.7)	
Higher education, long	38 (16.5)	38 (18.8)	
Missing data	4	7	
Gestational age of the child at birth (weeks)[d]			
≥38	207 (89.2)	181 (87.4)	.56[b]
<38	25 (10.8)	26 (12.6)	
Missing data	–	1	

(Continues)

TABLE 3 (Continued)

Variables	Intervention municipality (*N* = 232)	Control municipality (*N* = 208)	*p*-value*
Age of the child (months)[c]			
Median (range)	9.9 (7.8–11.5)	9.8 (8.2–10.8)	.12[a]
Missing data	13	10	
Gender of the child[e]			
Females	110 (47.4)	103 (49.5)	.66[b]
Males	122 (52.6)	105 (50.5)	
Birthweight (g)			
Median (range)	3,625 (2,480–4,810)	3,240 (2,890–3,900)	.72[a]
Missing data	12	7	
The child gets breast milk[c], *N*(%)			
Yes	125 (54.1)	107 (51.9)	.52[b]
Not now, but earlier	102 (44.2)	92 (44.7)	
No, has never got	4 (1.7)	7 (3.4)	
Missing data	1	2	
Parental wish for more information about food for infants and toddlers[c], *N* (%)			
Yes	125 (24.4)	114 (55.1)	.12[b]
No	97 (75.6)	75 (36.2)	
Do not know	10	18 (8.7)	
Missing data	–	1	

[a]*t* test for equality of means; equal variances assumed.

[b]Chi-square test.

[c]At the time of completion of the food frequency questionnaire baseline.

[d]Tertiary vocational education is included.

[e]The child referred to in the food frequency questionnaire.

*p-values <.05 considered as statistically significant differences between groups.

5 | DISCUSSION

Our findings showed no statistically significant differences between the two groups on the predefined outcome variables: daily vegetable intake, daily intake of saturated fat and BMI. We do not know if the communication tool about diet was used as intended, to promote a dialogue. The tool might have been used purely for one-sided information giving, corresponding exclusively to a cognitive parental approach to eating and thus with less impact on their healthy food choices (Marty et al., 2018). Consequently, no effect was attained on the outcomes related to the child's healthy diet. It is not known whether skills training and practical guidance on how to respond effectively to the child's eating behaviours (Ek et al., 2016) were highlighted during the intervention.

The choice of the study's nutritional outcomes, the child's daily intake of vegetables and saturated fat, was seen as reasonable because they are associated with the occurrence of cardiovascular disease in adulthood (Kaikkonen et al., 2013; World Health Organization, 2017). A modest increase in vegetable and fruit intake could have an impact on population health, particularly prevention of deaths from cardiac heart disease (Boeing et al., 2012; Tobias et al., 2006). The current study focused exclusively on vegetables because bitter-tasting vegetables might usually be harder to accept than fruit initially during the transition to the family's food, due to infants' innate preference for sweet flavours (Birch & Ventura, 2009). In a previous national dietary survey in 1999 among 2-year-old children, the mean daily vegetable intake was 33 g (Kristiansen et al., 2009). Eight years later in 2007, a corresponding national dietary survey among the same age group showed a mean vegetable intake of 54 g/person/day (Kristiansen et al., 2009). Related to the findings one decade ago, the current study showed a general increase in the mean daily intake of vegetables per child to 64.5 g in the intervention and 68.5 g in control municipalities. This positive trend in vegetable intake reflects a similar tendency among the general Norwegian population in the recent years (Norwegian Directorate of Health, 2018). Withholding of information about the outcomes of the trial among participants to prevent performance bias and expectation bias might have been one reason why the intervention did not contribute to the parents changing their child's diet in terms of vegetable intake.

In a systematic Cochrane Collaboration systematic review on "Interventions for increasing fruit and vegetable consumption in children aged 5 years and under," nine studies were related to children younger than 2 years of age (Hodder et al., 2018). None of these interventions involved the use of an image-based communication tool in established CHC consultations (Barends, de Vries, Mojet, & de Graaf, 2014; Hetherington et al., 2015; Mennella, Nicklaus, Jagolino,

TABLE 4 Differences between intervention and control municipalities at end point

Variables	Intervention municipality (*N* = 140)	Control municipality (*N* = 110)	*p*-value*
Mother's age (years), median (range)	33 (23–45)	32 (22–45)	.80[a]
Missing data			
Mother's marital status, *N* (%)			
Married or cohabitant	135 (98.5)	103 (93.6)	.04[b]
Not married or cohabitant	2 (1.5)	7 (6.4)	
Missing data	3	–	
Mother's country of origin, *N* (%)			
Norway	126 (92.0)	101 (91.8)	.44[b]
Rest of Europe	9 (6.6)	5 (4.5)	
Outside Europe	2 (1.5)	4 (3.6)	
Missing data	3	-	
Mother working outside home or studying[c]			
Yes	120 (87.6)	94 (86.2)	.75[b]
No	17 (12.4)	15 (13.8)	
Missing data	3	1	
Mother smoking, *N* (%)			
Yes	10 (7.3)	8 (7.3)	.99[b]
No	127 (92.7)	102 (92.7)	
Missing data	3		
Mother using smokeless tobacco			
Yes	9 (6.6)	7 (6.4)	.95[b]
No	128 (93.4)	103 (93.6)	
Missing data	3	–	
Mother's number of children			
1	44 (32.1)	35 (31.8)	.79[b]
2	65 (47.4)	56 (50.9)	
≥3	28 (20.4)	19 (17.3)	
Missing data	3	–	
Mother's education			
Upper secondary education[d] and below	27 (19.9)	28 (25.7)	.36[b]
Higher education, short	73 (53.7)	48 (44.0)	
Higher education, long	36 (26.5)	33 (30.3)	
Missing data	4	1	
Father's education			
Upper secondary education[d] and below	71 (52.2)	57 (52.3)	1.00[b]
Higher education, short	39 (28.7)	31 (28.4)	
Higher education, long	26 (19.1)	21 (19.3)	
Missing data	4	1	
Gestational age of the child at birth (weeks)[d]			
≥38	122 (89.1)	97 (89.9)	0.99[b]
<38	15 (10.9)	12 (11.0)	
Missing data	3	1	
Age of the child (years)[c]			
Median (range)	2.2 (2.0–2.7)	2.2 (1.8–2.8)	.19[a]
Gender of the child[e]			

(Continues)

TABLE 4 (Continued)

Variables	Intervention municipality (*N* = 140)	Control municipality (*N* = 110)	*p*-value*
Female	72 (51.4)	55 (50)	.82[b]
Male	68 (48.6)	55 (50)	
Parental wish for more information about food for toddlers, *N* (%)			
Yes	32 (24.4)	39 (41.1)	<.01[b]
No	99 (75.6)	56 (58.6)	
Missing data	9	15	

[a]*t* test for equality of means; equal variances assumed.

[b]Chi-square test.

[c]At the time of completion of the food frequency questionnaire baseline.

[d]Tertiary vocational education is included.

[e]The child referred to in the food frequency questionnaire.

**p*-values <.05 considered as statistically significant differences between groups.

TABLE 5 Differences in outcome variables between intervention and control municipalities at end point

Variables	Intervention municipality (*N* = 140)	Control municipality (*N* = 110)	*p*-value*
Vegetables[d] (g), mean (*SD*)	64.5 (46.8)	68.7 (83.6)	.54[a]
Saturated fat[d] (E%), mean (*SD*)	13.0 (2.5)	12.9 (2.6)	.78[a]
Saturated fat[d], *n* (%)			
<10E%	13 (9.3)	12 (10.9)	.67[b]
≥10E%	127 (90.7)	98 (89.1)	
Child's body mass index (BMI)			
Median (range)	16.4 (13.7–20.43)	16.6 (14.4–19.7)	.19[b]
<18[c], *n* (%)	106 (88.3)	67 (81.7)	
≥18[c], *n* (%)	14 (11.7)	15 (18.3)	
Missing data	20	28	
Parental wish for more information about food for toddlers, *N* (%)			
Yes	32 (24.4)	39 (41.1)	<.01[b]
No	99 (75.6)	56 (58.6)	
Missing data	9	15	

[a]Mann–Whitney–Wilcoxon test.

[b]Chi-square test.

[c]Corresponding to IsoBMI 25 (Cole et al., 2000; Norwegian Directorate of Health, 2010).

[d]Based on the child's daily intake.

**p*-values <.01 considered statistically significant differences between groups.

& Yourshaw, 2008; Remy, Issanchou, Chabanet, & Nicklaus, 2013; Roset-Salla, Ramon-Cabot, Salabarnada-Torras, Pera, & Dalmau, 2016; Sullivan & Birch, 1994; Vazir et al., 2013; Verbestel et al., 2014; Watt et al., 2009). According to this Cochrane review, the daily vegetable intake in children younger than 5 years of age increased on average by 3.50 g based on child-feeding and multicomponent interventions (Hodder et al., 2018). Such a small effect size might limit potential public health benefits from implementing these types of interventions (Hodder et al., 2018).

Our study revealed an intake of ≥10E% of saturated fatty acids among 89%–91% of the 2-year-olds and a mean saturated fatty acid intake of on average 13E% in both groups. This is higher than the recommended <10E% and at the same level as in 2007 (Kristiansen et al., 2009). Replacing saturated fatty acids with unsaturated fatty acids could prevent cardiovascular disease (National Nutrition Council in Norway, 2017). To achieve this, it is central to reduce intakes of highly processed fried and nutrient-poor fast foods and snacks, processed meats and fatty meats. Instead, high-fibre fruits and vegetables, nuts and seeds, lean meats and fat-reduced dairy foods should be the core components of children's diets (Te Morenga & Montez, 2017). Our intervention comprising three CHC consultations focused once on the dietary fat content of healthy bread spreads during the 10-month consultation and once on amounts of fat in milk types during the 12-month consultation.

This intervention might have been too weak to have an impact on any parental food preferences related to saturated fatty acids. To achieve an effect regarding parental selection of less saturated fat in the child's diet, a more assertive intervention has shown positive results. In this longitudinal Finnish study by Kaitosaari et al. (2006), the intervention group parents received individualized dietary counselling twice a year by a physician and a dietitian from when their child was 7 months old. This intervention focused on supporting parents in adopting a healthy low-saturated-fat and low-cholesterol diet for their child. The control group received general health education at the CHC as usual before school age and no in-depth dietary counselling when the child grew older. This intervention results in children consuming less saturated fat than control children at the age of 9 years (Kaitosaari et al., 2006).

The BMI levels of 11.7% overweight children in the intervention group and 18.3% in the control group correspond to the levels of overweight among 8- to 9-year-old children in Norway—13% among boys and 17% among girls in 2015 (Norwegian Institute of Public Health, 2018). This reflects the findings of a recent study where similar dietary food patterns were tracked between the age groups of 2 and 8 years (Luque et al., 2018). According to the World Health Organization (2018), increased BMI is a major risk factor for non-communicable diseases such as cardiovascular diseases, diabetes, musculoskeletal disorders and some cancers. Childhood obesity is associated with a higher risk of obesity, premature death and disability in adulthood. In addition, obese children experience an increased risk of breathing difficulties, fractures and hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects (World Health Organization, 2018). According to a Norwegian population-based longitudinal study, being overweight or obese at the age of 8 years was associated with an increased BMI throughout infancy and childhood. Hence, interventions to prevent children becoming overweight should start at an early age (Glavin et al., 2014). For instance, increased consumption of vegetables and fruit and regular physical activity could help at the individual level to prevent overweight and obesity (World Health Organization, 2018). Individual-level interventions targeting healthy eating and physical activity usually have no statistically significant effect on clinical measures of obesity in children (Nigg et al., 2016). The current study's results showing no impact of the individual-level intervention on the child's BMI were therefore as expected.

Dietary assessments of infants and preschool children appear complicated because their dietary habits often change rapidly (Andersen, Lande, Arsky, & Trygg, 2003). Food served during this age is often not consumed, and gaining an overview of total food intake might be challenging for the parents because of the child's day care (Andersen et al., 2003). Regarding reliability concerns as discussed by Polit and Beck (2017), the accuracy and consistency of information obtained from the completed SFFQs have been central. The chosen age-specific SFFQs were considered suitable for assessing dietary intake in large groups (Andersen, Lande, Trygg, & Hay, 2004). The SFFQ used among 2-year-old children as the basis for the current SFFQ at end point was validated as valuable for measuring average intakes of energy, macronutrients and several food items. Its validity was not influenced by length of the parents' education or whether the child was attending day care (Andersen et al., 2004).

Our data did not reveal any statistically significant differences at baseline between the groups, so we did not adjust for any possible confounders, and thus, no multiple models were fitted. Further, as the consumption of vegetables was close to zero at baseline, we were not able to model possible changes in this consumption using repeated-measures methodology.

Use of the communication tool about diet had positive effects on parents in their search for information about food for toddlers. Significantly fewer of the parents desired more information about food for toddlers in the intervention group than in the control group. This might suggest that PHNs in control municipalities spent less time counselling on food and feeding practices because they were not obliged to use any communication tool about diet. PHNs in intervention municipalities reported a median of 5-min longer consultations totally than the PHNs in control municipalities. However, parental satisfaction with information about dietary concerns regarding their child shows no association with changing their child's dietary habits in a healthier direction. Further studies should focus the PHNs' evidence-based knowledge concerning nutrition adapted to infants and children under school age. Moreover, PHNs' use of the communication tool about diet should be focused on creating a two-way dialogue adapted to the needs of the parents and effect on healthy dietary choices.

5.1 | Limitations

Although power analysis was carried out before the study, we did not achieve a large enough sample size based on the preceding calculations because of high attrition among participants who had consented initially. However, we can speculate that even if the calculated sample size had been achieved, it would not have been possible to conclude on any effect of the intervention because the observed differences in the main outcome between the groups were much smaller than anticipated. Based on the literature regarding vegetable intake among 2-year-olds (Kristiansen et al., 2009), we initially anticipated that there would be a difference of 15 g/ person/day between the groups. According to a recent Cochrane Collaboration systematic review, child-feeding interventions appear to increase vegetable intake in children by 3.50 g on average (Hodder et al., 2018), a very small estimate in comparison with our expected achievement. So far, for children there are no guidelines regarding the recommended intake of vegetables (National Institute for Health & Welfare in Finland, 2016).

The usefulness of SFFQs might be questioned because children in this age group eat relatively small amounts of food and their food choices are likely to change. To measure the effect of the communication tool about diet in a relatively short time, behavioural measures or knowledge tests might have been valuable as a supplement to the SFFQ for dietary assessment of the child. However, completion of

several questionnaires and tests might have led to even greater attrition due to participant fatigue, according to Polit and Beck (2017).

The fact that the recruitment process lasted for 2 years might have influenced internal validity, because during this time products with a healthy diet focus have been introduced to the market continuously. However, this would have affected both groups concurrently.

The presented sample was similar to the general population in Norway except for the level of education and ethnic background. Only two per cent among mothers and 2%–3% among fathers had *education below upper secondary level* compared to 25.7% of women and 26.7% of men in the general population (Statistics Norway, 2018). Moreover, fewer than 10% of the mothers had an immigrant background compared to 17.7% of immigrants and Norwegian born to immigrant parents in the general population (Statistics Norway, 2019).

The participants having almost exclusively non-immigrant background and underrepresentation of education below upper secondary level compared to the general Norwegian population might limit the generalizability of our findings. The unknown response rate, based on how many participants were initially invited to participate in the study, also implies a limitation to the generalizability of the results.

6 | CONCLUSION

Our study did not reveal any differences between the groups on the outcome variables, daily vegetable intake, daily intake of saturated fat or BMI of the child at the age of 2 years. Thus, the PHN using a communication tool about diet in three CHC consultations did not influence parents to choose more vegetables and less saturated fat in their children's diet when compared with the control parents. There were, however, significantly fewer of the parents who desired more information about food for toddlers in the intervention group than in the control group. Our findings indicate that regular nutritional CHC counselling, despite its positive contribution to parents' information search, will not have any particular impact on the daily intake of specific components in the child's diet such as vegetables and saturated fat.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

AUTHOR CONTRIBUTIONS

BHF, KG, SH, LFA, MCS: Contributions to conception and design, acquisition of data, analysis and interpretation of data, manuscript drafting, critical revision for important intellectual content and final approval of the version to be published. Each author has participated sufficiently in the work to take public responsibility for appropriate portions of the content and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

RESEARCH ETHICS COMMITTEE APPROVAL

The study was approved by the Regional Committees for Medical and Health Research Ethics (REC), Ref.nr. 2014/726.

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