

# Examining the experiences of implementing a lifestyle intervention for overweight and obese children

An interview study on the barriers and enhancers when implementing an intervention program in Norwegian municipalities

**Ida Sætre Helgeland**

## **Supervisors**

Tonje Holte Stea  
Sveinung Berntsen  
Eirik Abildnes

*This Master's thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. However, this does not imply that the university answers for the methods that are used or the conclusion that are drawn*



## **Preface**

This master thesis represents the end of five years of studying public health. My student days are over, which is both sad and exciting at the same time. The process of writing this thesis has been an interesting, inspiring, frustrating and exciting learning process. Overall it has been a positive experience and I'm happy to finish my master's degree by writing this thesis.

Several persons deserve to be thanked when I am now completing my master's thesis. First I want to thank my supervisors Sveinung Berntsen, Tonje Holte Stea and Eirik Abildsnes for the academic guidance and support they have given me throughout this process. Thanks to the informants who willingly shared information about their thoughts and experiences. I also want to thank my fellow students, Kristine Engebretsen Illøkken, Julie Sigvartsen and Siri Thorkildsen for interesting and amusing academic and non-academic discussions. Sharing office with you has been a pleasure, which made it easier to get up every morning to work on this thesis. Finally, I want to thank my family, my friends and my boyfriend Andreas Haaland for supporting and encouraging me throughout my studies.

I feel honoured to have the opportunity to study what I am passionate about, and hopefully I will be able to use my acquired knowledge to contribute to improvement of the public health practise.

Ida Sætre Helgeland

Kristiansand, May 2015

## **Abstract**

**Background:** Childhood obesity is one of the 21st century's most serious public health challenges. In Norway, health nurses are obligated to record children's body mass and children who are classified as overweight or obese should be offered a follow up through lifestyle programs. There has been a lack of such lifestyle programs, however, some municipalities have implemented intervention programs to support overweight and obese children and their families' lifestyle changes.

**Aim:** To examine how a lifestyle intervention focusing on promoting healthy lifestyle habits in overweight and obese children and their families in three different Norwegian municipalities was implemented and conducted. The intervention focused on physical activity, diet and individual guidance. Important enhancers and barriers related to the implementation process were identified.

**Methods:** In depth interviews were conducted with representatives (n=5) involved in the implementation process in three different municipalities. All interviews were recorded digitally, transcribed verbatim and analysed using systematic text condensation.

**Results:** An initiator to establish agreements in the municipality council was identified as an important enhancer in the implementation. Barriers in the implementation were related to the cooperation between the program facilitators, municipal council and the health nurses. Resistance from the participating children's parents and a lack of program founding were also identified as barriers. There was a lack of structured evaluations of the intervention programs. The intervention programs components were identified as important focus areas, including connection to local community, physical activity sessions, diet courses, individual counselling and involvement of the entire family.

**Conclusion:** Involvement of a determined individual with strong sense of commitment seems essential for implementing such intervention programs. For future work, better strategies to involve health nurses and how they should approach the families are needed. Thorough program evaluation should be conducted to examine the intervention program's effect, why they were successful or not, and to ensure future funding.

**Keywords:** Child health, Healthy Living Centres, lifestyle changes, obesity, overweight, qualitative methods

## Sammendrag

**Bakgrunn:** Barndomsfedme er en av det 21. århundrets mest alvorlige folkehelseutfordringer. I Norge er helsesøstre pålagt å veie og måle barn og barn som blir klassifisert som overvektige eller fete bør tilbys oppfølging gjennom livsstilsprogrammer. Det har vært en mangel på slike livsstilsprogrammer, men noen kommuner har implementert intervensjoner for å støtte overvektige og fete barn og deres familier til å endre livsstil.

**Hensikt:** Å undersøke hvordan en livsstilsintervensjon rettet mot overvektige og fete barn og deres familier i tre forskjellige norske kommuner ble implementert og gjennomført. Intervensjonen hadde fokus på fysisk aktivitet, kosthold og individuell veiledning. Viktige bidragsyttere, forsterkere og barrierer knyttet til implementeringsprosessen og gjennomføringen ble identifisert.

**Metode:** Dybdeintervjuer med representanter (n = 5) involvert i implementeringsprosessen i tre forskjellige kommuner ble gjennomført. Alle intervjuene ble tatt opp digitalt, transkribert og analysert ved å bruke systematisk tekstkondensering.

**Resultater:** En ildsjel for å etablere avtaler i kommunestyret ble identifisert som en viktig forsterker i implementeringen. Barrierer i gjennomføringen var knyttet til samarbeid mellom programmets tilretteleggere, kommunestyret og helsesøstrene. Motstand fra de deltakende barnas foreldre og manglende økonomisk støtte til intervensjonsprogrammet ble også identifisert som barrierer. Det var en mangel på strukturerte evalueringer av intervensjonsprogrammene. Intervensjonsprogrammene inkluderer tilknytning til lokalsamfunnet, fysisk aktivitet, kostholdkurs, individuell veiledning og involvering av hele familien, ble identifisert som viktige fokusområder

**Konklusjon:** Involvering av en ildsjel med sterkt engasjement synes å være avgjørende for å implementere slike intervensjonsprogrammer. For videre arbeid er det nødvendig med bedre strategier for å involvere helsesøstre og hvordan de skal møte familiene. Grundig evaluering bør gjennomføres for å undersøke intervensjonsprogrammene effekt, hvorfor de var vellykket eller ikke, og for å sikre fremtidig finansiering.

**Nøkkelord:** Barnehelse, fedme, frisklivssentral, overvekt, kvalitativ metode, livsstilsintervensjon

## **List of abbreviations**

BMI Body Mass Index

IP Individual Plan

M1 Municipality 1

M2 Municipality 2

M3 Municipality 3

NSD Norwegian Social Science Data Services

STC Systematic Text Condensation

WHO World Health Organization

# **Part I**

# **MASTER THESIS**

**Ida Sætre Helgeland**

University of Agder

2015

## Table of contents

<b>1. Introduction</b> .....	<b>1</b>
<b>2. Theoretical background</b> .....	<b>3</b>
2.1 Overweight and obesity: Characteristics and definitions.....	3
2.2 Prevalence .....	4
2.3 Consequences of overweight and obesity in childhood.....	4
2.4 Risk factors of overweight and obesity.....	5
2.4.1 Socioeconomic status, family composition and socio-demographic variable .....	5
2.4.2 Behavioural factors .....	6
2.4.2.1 Physical activity .....	6
2.4.2.2 Diet.....	7
2.5 Interventions .....	8
2.5.1 Adoption and implementation of health promoting interventions.....	8
2.5.2 Local connection.....	9
2.5.3 Family based interventions .....	10
2.6 Evaluation of intervention programs .....	11
2.6.1 Process evaluation.....	11
2.6.2 Effect evaluation .....	12
2.7 The municipality and the health service responsibilities .....	12
2.7.1 Healthy Living centres.....	13
<b>3. Method</b> .....	<b>14</b>
3.1 Study design.....	14
3.1.1 Municipality 1 .....	14
3.1.2 Municipality 2.....	15
3.1.3 Municipality 3 .....	16
3.2 Informants .....	16
3.3 Data collection .....	16
3.4 Ethical considerations .....	17
3.5 Data analysis .....	17
<b>4. Method discussion</b> .....	<b>20</b>
4.1 Internal validity.....	20



4.1.1 Selection of informants .....	20
4.1.2 Interviews.....	21
4.1.3 The role of the researcher .....	22
4.1.4 Analysis.....	23
4.2 External validity/transferability .....	24
4.3 Reliability.....	24
4.4 Limitations of the method.....	25
<b>References .....</b>	<b>26</b>

## 1. Introduction

Overweight and obesity have been increasing in several parts of the world the past decades, and despite of a slight levelling off in recent years, the prevalence still remains high (Ng et al., 2014). In 2013, as many as 2.1 billion people were overweight or obese worldwide (Ng et al., 2014). In Norway it has been estimated that 16% of all third graders are overweight or obese (Hovengen, Biehl, & Glavin, 2014). The high prevalence of overweight and obesity has been described as an epidemic and is of great concern as it possibly is one of the most serious threats to children's health in developed countries (Ebbeling, Pawlak, & Ludwig, 2002). Childhood obesity may lead to future health risks, such as increased risk for respiratory distress, type 2 diabetes, hypertension, bone fractures, insulin resistance and cardiovascular disease (Ebbeling et al., 2002; Reilly et al., 2003; World Health Organization, 2014). Obese children are also more likely to develop mental health problems than children that are not obese (Lobstein, Baur, & Uauy, 2004; Reilly et al., 2003).

It is important to start prevention early as overweight and obesity in childhood may persist into adulthood (Reilly et al., 2003; Singh, Mulder, Twisk, Van Mechelen, & Chinapaw, 2008). To prevent overweight and obesity, there is a need for development and implementation of tailored interventions targeting overweight and obesity in children (World Health Organization, 2014). In recent years there has been a greater focus on the municipal health care institution's responsibility for early intervention and prevention in Norway (Meld. St. nr 19, 2014-2015; Ministry of Health and Care Services, 2009). Health nurses at schools are instructed to record children's body mass when children are five years old and in 3<sup>rd</sup> grade. Children that are classified as overweight or obese and their families should be invited to participate in behavioural intervention programs aimed at modifying the children's and their families' lifestyle (Norwegian Directorate of Health, 2010). There has been a lack of such programs targeting overweight and obese children, but lately several municipalities have taken such initiative. These programs are, however, rarely based on scientific grounds (Øen & Stormark, 2013).

The aim of the present study was to examine how a lifestyle intervention program directed at overweight and obese children and their families were implemented in Norwegian municipalities. Important enhancers and barriers when implementing the intervention

programs were identified. Qualitative interviews with key contributors who participated in the planning and implementation of the intervention program were conducted to reach the aim of the present study.

The present study has been divided into three different parts. The first part contains theoretical background, description of the method and a method discussion. The second part contains an article with introduction, method description and presentation of the study's results and discussion. Finally, the study's appendices are listed in step three.

## 2. Theoretical background

### 2.1 Overweight and obesity: Characteristics and definitions

The World Health Organization (WHO) defines overweight and obesity as abnormal or excessive fat accumulation that may be harmful to health (World Health Organization, 2014). There are several different measures of overweight and obesity including Body Mass Index (BMI), hip waist ratio and body fat measures. Body fat can be measured directly which is an accurate, but time-consuming, expensive and not very suited method to field work (James, 2004). BMI is a solid indirect measure of body fatness and presence of overweight and obesity, and it is an easy screening tool to use in field settings (James, 2004; Malina & Katzmarzyk, 1999). BMI is calculated by dividing weight in kilograms by height in meters squared (Cole, Bellizzi, Flegal, & Dietz, 2000). Before puberty, children have reduced muscle and skeletal mass, and boys develop later than girls (Cole et al., 2000). It is therefore internationally recommended using age and gender-adjusted limits (iso-BMI) for overweight and obesity in children aged 2-18 years. Children's current BMI-for-age is indicated in tables where the limits are specified in tables or curves (Cole et al., 2000).

**Table 1: International cut off points for body mass index for overweight and obesity by sex and age by Cole et al. (2000).**

Age (years)	Body mass index 25 kg/m <sup>2</sup>		Body mass index 30 kg/m <sup>2</sup>	
	Males	Females	Males	Females
2	18.41	18.02	20.09	19.81
2.5	18.13	17.76	19.80	19.55
3	17.89	17.56	19.57	19.36
3.5	17.69	17.40	19.39	19.23
4	17.55	17.28	19.29	19.15
4.5	17.47	17.19	19.26	19.12
5	17.42	17.15	19.30	19.17
5.5	17.45	17.20	19.47	19.34
6	17.55	17.34	19.78	19.65
6.5	17.71	17.53	20.23	20.08
7	17.92	17.75	20.63	20.51
7.5	18.16	18.03	21.09	21.01
8	18.44	18.35	21.60	21.57
8.5	18.76	18.69	22.17	22.18
9	19.10	19.07	22.77	22.81
9.5	19.46	19.45	23.39	23.46
10	19.84	19.86	24.00	24.11

## 2.2 Prevalence

Ng et al. (2014) have performed a systematic analysis of surveys, reports, and published studies of the global, regional, and national prevalence of overweight and obesity in children and adults from 1980 to 2013. Between 1980 and 2013 the worldwide prevalence of overweight and obesity among children increased with 47.1% (Ng et al., 2014). In 1980 the number of overweight and obese individuals in the world was 857 million and in 2013 the number was 2.1 billion and the largest increase occurred in economically developed regions (Ng et al., 2014). Results from the child growth study conducted in 127 schools all over Norway indicated that approximately 16% of third-graders were overweight or obese between 2008 and 2012 (Hovengen et al., 2014). Girls had a significantly higher prevalence of overweight or obesity than boys, respectively 17.9% and 14.5% (Hovengen et al., 2014).

## 2.3 Consequences of overweight and obesity in childhood

Several studies have shown that obese children are more likely to be obese as adults, compared with their lean peers (Reilly et al., 2003; Serdula et al., 1993; Singh et al., 2008). Results from Serdula et al. (1993) reported that approximately one third of obese children became overweight or obese in adulthood. Several adverse long-term effects of childhood obesity are established and negative cardiovascular effects as a result of obesity in childhood may be persistent later in life, which predicts a strong correlation between childhood obesity and morbidity and mortality in adult life (Kumanyika et al., 2008; Reilly et al., 2003; World Health Organization, 2014). Obesity in childhood is also associated with serious medical and psychosocial problems and greatly increased risk of disability in later in life (Ebbeling et al., 2002; World Health Organization, 2014).

In addition to increased future health risks, children with obesity have increased risk for respiratory distress, hypertension, bone fractures, insulin resistance, cardiovascular disease, and mental health problems (World Health Organization, 2014). Obesity together with type 2 diabetes, which is one of the most serious complications of obesity, might lead to myocardial infarctions becoming a paediatric disease (Ebbeling et al., 2002). Results from Reilly et al. (2003) show that the largest and most prominent health problems related to obesity in childhood are psychosocial and cardiovascular co-morbidities. Obese children are also more likely to experience psychiatric or psychological problems such as social exclusion,

depression, low self-esteem and behaviour problems than their non-obese peers (Lobstein et al., 2004; Reilly et al., 2003).

## **2.4 Risk factors of overweight and obesity**

A positive energy balance has been postulated as the main explanation of the paediatric obesity epidemic, and it is essential to avoid this in order to prevent excessive weight gain (Dietz & Gortmaker, 2001). Other factors such as environmental factors and genes are also known to predict risks of obesity (Shuldiner, 2008; Silventoinen, Rokholm, Kaprio, & Sørensen, 2010). Herrera, Keildson, and Lindgren (2011) have confirmed that although a person's susceptibility to weight gain can be determined by the genes, the genes are not the main reason for the obesity epidemic. There has not been evolutionary genetic changes within populations in the time that the obesity epidemic has existed (Kumanyika, Jeffery, Morabia, Ritenbaugh, & Antipatis, 2002). According to Herrera et al. (2011) unfavourable changes in environment and lifestyle, which are called the obesogenic environment, are the origin of the obesity epidemic. Some of the environmental and societal causes that are associated with the epidemic are modernization, economic growth, urbanization and globalization of food markets, which has resulted in an increased consumption of energy dense diets and a decreased level of physical activity (Kumanyika et al., 2002). Family composition and low socioeconomic status are also factors associated with higher prevalence of overweight and obesity (Juliussen et al., 2010; Shrewsbury & Wardle, 2008).

### **2.4.1 Socioeconomic status, family composition and socio-demographic variable**

Overweight and obesity are somewhat unevenly distributed between different social classes, where those with the lowest socioeconomic status have higher rates of overweight and obesity than those with high socioeconomic status (Rössner, 2009). Shrewsbury and Wardle (2008) reported in a systematic review an association between overweight and obese children and low parental education, particularly mothers, in 15 of 20 studies. Based on the child growth study in Norway, Biehl et al. (2013) reported that children of low-educated mothers and children living in rural areas had higher BMI and waist circumference than children of higher educated mothers and children living in urban areas. Biehl et al. (2014) found that children with divorced parents had higher prevalence of general and abdominal obesity compared to children with married parents. Boys of divorced parents seem to be particularly susceptible to abdominal obesity (Biehl et al., 2014). Other studies have also reported a higher prevalence of

overweight and obesity among children from single-parent families compared to two-parent families (Hesketh, Crawford, Salmon, Jackson, & Campbell, 2007; Strauss & Knight, 1999).

## **2.4.2 Behavioural factors**

Behavioural factors such as high energy intake and low energy expenditure, which are the main factors that contribute to a positive energy balance, are modifiable factors that can be changed (Branca, Nikogosian, & Lobstein, 2007; Ebbeling et al., 2002).

### **2.4.2.1 Physical activity**

Caspersen, Powell, and Christenson (1985, p. 126) define physical activity as “Any bodily movement produced by skeletal muscles that substantially increases energy expenditure.”

Physical activity has numerous health benefits for children (Janssen & LeBlanc, 2010), including decreased body fat, enhanced bone health, favourable risk profiles for cardiovascular and metabolic disease as well as reduced symptoms of depression and anxiety (Department of Health and Human Services, 2008; Strong et al., 2005).

It is recommended for all children and adolescents to be physically active at moderate to vigorous intensity for at least 60 minutes each day (Janssen & LeBlanc, 2010; Norwegian Directorate of Health, 2014). A dose-response relation indicates that the more physical activity, the greater the health benefit (Janssen & LeBlanc, 2010; Strong et al., 2005; Warburton & Bredin, 2006). Physical activity of vigorous intensity, which strengthens bones and increases muscle strength, should be conducted at least three times a week (Norwegian Directorate of Health, 2014). The Norwegian Directorate of Health (2014) also focuses on the importance of reducing sedentary behaviour. A study among Norwegian children showed that 87% of girls and 96% of boys aged 6 years satisfied the recommendations for physical activity, whereas only 69% of girls and 86% of boys aged 9 years satisfied the recommendations (Kolle, Stokke, Hansen, & Anderssen, 2012).

By increasing physical activity or reducing sedentary behaviour Epstein, Paluch, Gordy, and Dorn (2000) found a significant reduction in prevalence of overweight and body fat percentage in children. For obese children even modest amounts of physical activity can have tremendous positive health effects (Janssen & LeBlanc, 2010). A review by Jiménez-pavón, Kelly, and Reilly (2010) reported negative associations between objectively measured

physical activity and obesity among children and adolescents, which indicates that habitual physical activity are protective against obesity among children and adolescents.

#### 2.4.2.2 Diet

Results from various studies have shown a positive correlation between children's portion sizes, energy intake and body weight (Krebs et al., 2003; Lioret, Volatier, Lafay, Touvier, & Maire, 2009; McConahy, Smiciklas-Wright, Birch, Mitchell, & Picciano, 2002; Young & Nestle, 2002). Studies have also reported that in addition to meal composition, meal patterns affect the development of obesity (Birch & Ventura, 2009; Koletzko & Toschke, 2010; Krebs et al., 2003; Patro & Szajewska, 2010). Patro and Szajewska (2010) concluded that meal patterns such as consumption of snacks and the lack of breakfast eating is correlated with childhood overweight. Birch and Ventura (2009) emphasise that snacking or eating away from home seems to impact childhood obesity. Furthermore, a review by Koletzko and Toschke (2010) reported that skipping meals seems to be associated with increased obesity risk in children and recommend a meal pattern with five meals a day for children and their families.

According to Krebs et al. (2003) it is important to eat regular meals, reduce the amount of sugary snacks and increase the intake of fruit and vegetables to achieve reduced energy intake in children. Birch and Ventura (2009) and Krebs et al. (2003) recommended that the focus should be on healthy eating habits and not restrictive or coercive diets. According to Birch and Ventura (2009) the risk of developing obesity seems to increase when children are offered unhealthy types and portions of foods, as this would lead to the development of unfavourable preferences and eating styles. A review by Osei-Assibey et al. (2012) recommends that obesity prevention programs aimed at children up to 8 years of age should focus on making smaller portion sizes available, reducing promotion of high-fat, high-sugar foods to children and providing alternatives to sugar-sweetened soft drinks.

The Norwegian Directorate of Health (2014) recommends a varied diet with lots of fruit, berries and vegetables, fish and whole grain products and limited amounts of red and processed meat, sugar and salt. Oellingrath, Svendsen, and Brantstaeter (2011) conducted a study where eating patterns of Norwegian school children were tracked over three years. Results from the study showed that children who followed a "varied Norwegian" eating



pattern, which is characterized by food items typical of a traditional Norwegian diet, close to what is recommended by the health authorities, were less likely to remain overweight over time than children with decreased adherence to this eating pattern. Oellingrath et al. (2011) recommend encouragement of overweight children to eat regular meals and keep a diverse diet that includes fish, water and unrefined plant foods, rather than sugar- and fat-reduced foods and beverages, in order to reach normal weight.

## **2.5 Interventions**

It is important to promote healthy lifestyle habits early in life, as dietary and physical activity habits in childhood tracks into adult life and is consequently a predictor for health, overweight and obesity in adulthood (Mikkilä, Räsänen, Raitakari, Pietinen, & Viikari, 2004; Reilly et al., 2003; Singh et al., 2008). It is unclear which interventions are most effective in the treatment of childhood overweight and obesity, but some strategies have been shown to be beneficial (Luttikhuis et al., 2009). A review by Luttikhuis et al. (2009) reported that intervention programs that combined physical activity, dietary and behavioural components as well as involving the family appeared effective in decreasing overweight in children. According to Berg and Underland (2012) there is not enough evidence of good quality to determine whether interventions emphasizing increased physical activity and a healthy diet lead to reduced obesity in children and adolescents aged 6 to 18 years and.

Barlow (2007) recommend that general practitioners, other health professionals and professional organizations should focus on promoting physical activity in and outside of schools and families should be encouraged to use physical activity adapted schoolyards, walkways and bicycle paths. Parents should not be restrictive of children's eating habits, but encourage a healthy and normal diet, in addition to increasing physical activity and limiting sedentary activities. The whole family should be involved in the program and families where parents are obese or have type 2 diabetes mellitus should be prioritized. Clinicians should also ask children and parents about their activity and routines in consultations (Barlow, 2007).

### **2.5.1 Adoption and implementation of health promoting interventions**

When planning an intervention program focusing on health promotion it is important to plan for suitable adoption, implementation and maintenance. Adoption of programs involves the decision to use a program based on awareness of needs that are not covered, knowledge of an

innovation that could cover this need, and the decision that this innovation will be tried out. Program implementation is when the intervention is carried out for a trial period. The program it is maintained if the program is sustained and institutionalized (Bartholomew, Parcel, Kok, Gottlieb, & Fernández, 2011).

Without a plan for adoption, implementation and maintenance the intervention program may not be adopted, or it may be adopted but not fully implemented (Bartholomew et al., 2011). There are many factors that could contribute to a program's lack of effectiveness. According to Ward, Saunders, and Pate (2007) possible reasons could be that the program was implemented differently from how it was planned, the program was not implemented at all, or it did not reach an adequate number of people in the target population. According to Lee, Altschul, and Mowbray (2008), there is often no description of the task that must be completed when programs are implemented, and there is also often a lack of preparation and training to enable the implementation, which makes it difficult or impossible to implement intervention programs. When adoption of programs occurs it is essential to maintain the program's core components to ensure maintenance of the program's effectiveness (Lee et al., 2008). In order to make a program easier and flexible to adopt it is important to take into account different implementation options during the program planning, as this can improve the customization of the program in various settings while sustaining successful core elements (Bartholomew et al., 2011). To increase the likelihood of success, an implementation plan which describes core components and specifies the steps in delivering the program must have been developed by the program planners (Lee et al., 2008). Waters et al. (2011) emphasise that intervention programs should be embedded into on-going operating systems and practices in order to enhance the possibility for maintaining programs over time and to make the programs less recourse intensive.

### **2.5.2 Local connection**

Supportive environments and communities are fundamental in shaping people's choices, and may encourage healthy eating and regular physical activity habits (World Health Organization, 2014). The community affects people's health and well-being, thus making the local community an important arena for health promotion (Guttmacher, Kelly, & Ruiz-Janecko, 2010). Community-based interventions can be beneficial by its potential to make physical activity the social norm among the residents of a community (Ward et al., 2007).

When designing a community-based intervention program, one must consider several challenges and barriers, such as identifying appropriate partners, an understanding of the community, defining the purpose of collaboration and the scope of the program, creating a positive focus and forming effective working relationships (Ward et al., 2007).

### **2.5.3 Family based interventions**

It is well established that the family and household is of great importance when it comes to shaping children's physical activity and dietary behaviours (Swanson, Bardach, Studts, Schoenberg, & Bersamin, 2011). By being involved in physical activity programs, parents are provided opportunities to develop and influence their children's physical activity-related attitudes, knowledge, motor skills, behaviour and confidence (Ward et al., 2007). A review by Luttikhuis et al. (2009) reported that 6-12 months intervention programs targeting obese children and adolescents increase the probability of success if the intervention program is family-based and focuses on both physical activity and dietary components. Nowicka and Flodmark (2008) conclude in a review that it is beneficial to involve the family in childhood obesity treatment. Other studies have also confirmed that parental involvement and influence in the treatment program seems to be necessary for successful weight loss for children (Branca et al., 2007; McLean, Griffin, Toney, & Hardeman, 2003).

However, some studies have reported little or no effect of family-based lifestyle intervention on overweight and obese children's physical activity level and dietary habits (Bäcklund, Sundelin, & Larsson, 2011; Kokkvoll, Grimsgaard, Njølstad, Ødegaard, & Flægstad, 2013; Waling, Larsson, Lind, & Hernell, 2010). Bäcklund et al. (2011) conducted a one-year family-based controlled intervention study aimed at changing overweight and obese children's lifestyle habits by increasing healthy eating and physical activity habits and reducing screen time. The intervention program focused on group treatment and parental involvement. There were no significant differences between the intervention group and the control group's physical activity levels at the end of the intervention. Also, both groups decreased their energy expenditure and there were no change in screen time or number of steps taken in either of the groups (Bäcklund et al., 2011). The evaluation of dietary aspects of the intervention were reported by Waling et al. (2010). Waling et al. (2010) found only modest effects on the children's dietary habits regarding reduced energy intake and improved macronutrient intake. However, compared with the control group, the intervention group decreased their intake of

saturated fatty acid, fat and cholesterol, and maintained the recommended level of sucrose intake and prevented a decrease in the intake of dietary fibre (Waling et al., 2010).

## **2.6 Evaluation of intervention programs**

Evaluation can be taken into consideration in determining the effectiveness and effect of a program, or it can be thought of as formative pretesting or pilot testing of programs and utilities (Bartholomew et al., 2011). According to Ward et al. (2007) and Bartholomew et al. (2011) program evaluation is one of the most thorough methods to determine how well an intervention has succeeded, as well as to provide feedback for subsequent implementation. In addition to assess the effectiveness of programs, program evaluation can be used to monitor and document program activities (Ward et al., 2007). It is also important to conduct evaluation as part of the program management in order to provide feedback to enable the best possible benefit from limited program resources and to improve programs (Preskill, 1994). According to Department of Health and Human Services (2002), program evaluations can have several purposes. Program evaluation can be useful for its possibility to provide useful information about the program to stakeholders and program implementers, influence policy makers and sources of funding, build community capacity and engage communities. In addition, program evaluations can ensure sustainability and contribute for communities to share experiences with other communities about what was successful and what was not in the implementation process (Department of Health and Human Services, 2002). Program evaluation consists of process evaluation and outcome/effect evaluation.

### **2.6.1 Process evaluation**

It is vital to understand how public health intervention programs studies function in different settings, and to identify important factors that affect the implementation process (Linnan & Steckler, 2002). Process evaluation is an effective method for explaining how certain results were accomplished and to which extent the intervention components were implemented. This particularly applies to complex social and behavioural interventions (Linnan & Steckler, 2002). According to Bartholomew et al. (2011), process evaluation is equally important as outcome evaluation in order to help us understand why a program is successful or not. Also, process evaluations are essential to ensure that planned interventions are conducted equally at all areas when interventions are implemented at multiple levels in multiple locations and for multiple audiences (Linnan & Steckler, 2002). Process evaluations are often more feasible

and less expensive than long-term effect evaluations (Kumanyika et al., 2002).

### **2.6.2 Effect evaluation**

Effect evaluation is needed in order to measure whether the goals of an intervention have been achieved, and to which extent this has been done (Kumanyika et al., 2002). Effect evaluation describes how a intervention program affects outcomes on the targeted group, often compared with a control group (Bartholomew et al., 2011). This involves determining how certain factors change as a result of the intervention (Bartholomew et al., 2011).

## **2.7 The municipality and the health service responsibilities**

The Norwegian Directorate of Health (2010) has developed national guidelines for the primary health care about prevention, diagnosis and treatment of overweight and obesity. The purpose of the guidelines is to ensure professional work with overweight and obesity issues in primary care and contribute to collaboration across levels of health care. The guidelines also emphasise the necessity of cooperation across sectors (Norwegian Directorate of Health, 2010). Health nurses are instructed to weigh and measure children at five years and when they are in 3<sup>rd</sup> grade. Measurement before they start school provides an opportunity to follow the development from young age. Measurements on 3<sup>rd</sup> graders are favourable for assessment of pre-pubertal status and to break any adverse health habits (Norwegian Directorate of Health, 2011). Measurements of compulsory school age are arranged so that compilation of the results can be used to evaluate preventive measures both at primary and secondary schools (Norwegian Directorate of Health, 2011). If a child is measured to have iso-BMI > 25 with the conclusion that he or she is developing overweight, the health nurse or general practitioner is required to inform the parents and then conduct a mapping and guidance consultation with the family (Norwegian Directorate of Health, 2010).

If measuring and clinical examination confirms the existence of obesity (iso-BMI > 30), it is necessary with examination and treatment programs with the involvement of a variety of specialists. The health nurse has primary responsibility for initiating such cooperation (Norwegian Directorate of Health, 2010). If a doctor screens a child for obesity, the doctor has the responsibility to involve a health nurse (Norwegian Directorate of Health, 2010). The health nurse or general practitioner should offer monitoring and follow-up of the child with a

focus on motivation for change of lifestyle habits, if the parents want this (Norwegian Directorate of Health, 2010). According to Øen and Stormark (2012) there has been a lack of a structured and systematic plan for this monitoring and it has been unclear who has responsibility for conducting intervention programs for these children. In some municipalities in Norway, Healthy Living Centres have been conducting such intervention programs.

### **2.7.1 Healthy Living centres**

Lifestyle changes is a central theme in the broad public health work, which requires interaction and broad efforts of public, private and municipal actors within and outside the health sector to promote health and prevent diseases related to lifestyle habits (Norwegian Directorate of Health, 2013). Healthy Living Centres are a way to organize the health care service, and aims to help strengthen the bridge between the health service and the broad public health work. Healthy Living Centre is a cooperative partner in prevention and health promotion in the municipality that cooperates with relevant actors in the voluntary, private and public sector (Norwegian Directorate of Health, 2013).

Healthy Living Centres aim at promoting healthy lifestyle changes and provide structured monitoring through individual health conversations and various group offers, primarily in the areas of physical activity, diet and tobacco (Norwegian Directorate of Health, 2013). The target audience is people who need extra support to change lifestyle habits because of increased risk of, or incipient development of disease or disorder that can be related to lifestyle habits. Healthy Living Centres may be a suitable offer to people who have challenges related to overweight or obesity. Healthy Living Centres can be used as an early effort to prevent disease and can be offered to people in a treatment or rehabilitation course (Norwegian Directorate of Health, 2013). Evaluations of Healthy Living centres in five Norwegian counties showed that the centres meet participants with suitable adapted services and that the procedure for referring participants is simple to administer (Båtevik et al., 2008). Doctors who refer believe that this is a suitable method to reach those who are not physically active (Båtevik et al., 2008). The Norwegian Directorate of Health (2013) recommends to follow up participants at the centres for at least one year after commencing healthy living prescription. This can be done either through personal meetings, telephone calls or follow-up forms (Norwegian Directorate of Health, 2013).

## **3. Method**

### **3.1 Study design**

Five informants from three different municipalities in Southern and Western Norway were interviewed about their experiences working with lifestyle changes among overweight and obese children and their families. The informants had different roles in designing, performing and implementing the intervention program in the three municipalities. All of the interviews were individual and carried out by the same person during the winter of 2014/2015. Semi-structured interview guides were customized for each informant and systematic text condensation (STC) was used to analyse the data material (Malterud, 2013).

The three municipalities had varying experiences with working lifestyle changes among overweight and obese children and their families. From the autumn of 2014 the three municipalities were included in a research study conducted by the Universities of Agder and Bergen aiming to promote healthy lifestyle habits through encouraging beneficial physical activity habits, healthy dietary habits and focus on family structure. The research study was based on experiences from programs conducted at several Healthy Living Centres in Norway in addition to previous research experiences.

The focus of the present study was the planning and implementation in the three municipalities before the Universities of Agder and Bergen were connected to the intervention programs. An exception was in municipality 1, where the University of Agder contributed with expertise in the planning and implementation process.

#### **3.1.1 Municipality 1**

In municipality 1 (M1), the intervention program was carried out for two years and each intervention period lasted from September to May. The objectives of the program were to support changes in the family's diet and physical activity habits, give children positive experiences that hopefully give them the desire to be more physically active, and stabilization of the children's body mass. Health nurses were responsible for the recruitment of overweight and obese (iso-BMI > 25) children aged 6-10 years, and their families. Parents participated in a mapping conversation with health nurse before the intervention started. The aim of this conversation were to set up an individual plan (IP) with a maximum of three goals for the

year, and each of the main goals were divided into smaller, specific objectives. Each family was also offered a maximum of eight individual consultations with health nurse during the intervention period to follow-up the objectives outlined in the family's IP. The children and their families' lifestyle habits of in terms of diet and physical activity, sedentary behaviour and screen time were discussed in these conversations.

Parents participated in theoretical dietary courses, which consisted of a modified version of the "Good food for better health" course developed by the Norwegian Directorate of Health. The children were offered one mandatory and one voluntary physical activity session a week. The physical activity sessions focused on the sense of achievement and motion enjoyment, while keeping high intensity. The children's physical activity level, motor abilities and sleep habits were recorded at start-up. The families' dietary habits were reported through structured interviews with the parents at the start of the programs. All children were weighed before attending the intervention program. The program staff in M1 consisted of a health nurse, a physiotherapist, two physical activity instructors from a local sports club, the municipality chief physician, a nutritionist and representatives from the University of Agder.

### **3.1.2 Municipality 2**

In municipality 2 (M2) they had several years of experience conducting intervention programs targeting overweight and obese children in the Healthy Living Centre. The intervention lasted 8 months, from September to May, and the target group was overweight and obese children in 1<sup>st</sup> – 4<sup>th</sup> grade and their families. Voluntary physical activity sessions for the children were held twice a week, in addition to three individual guidance conversations with the parents each year for two years. Parents attended 4 theme meetings about motivation, physical activity, diet, and positive management of children. The first two years the centre also arranged a fifth theme meeting where they conducted a practical cooking session for the whole family. The children's iso-BMI and physical fitness was recorded at start and at the end of the intervention. An evaluation of the entire program was conducted after three years. This evaluation consisted of evaluation forms that were delivered to the participants after each meeting, and feedback requested from the parents. Health nurses also followed up with phone calls to parents after five years. Program staff in M2 consisted of two physiotherapists, three health nurses, a nutritionist and a family therapist.



### **3.1.3 Municipality 3**

In municipality 3 (M3) they had carried out a similar program to M1 and M2 once. The target group was children in 3<sup>rd</sup> grade who were found overweight or obese in measurements conducted by the school health nurse. The intervention lasted from September to May. The goal was to conduct physical activity sessions for the children, but there were too few participants to carry this out. Seven children and their families were referred and only 4 wanted to participate after participating in a mapping conversation. The focus of the intervention program was therefore on conducting different theme meetings for the whole families, which included two outdoor physical activity days, as well as three theoretical and practical diet courses. Mapping conversations with the parents were conducted at the start and at the end of the intervention program. There were also five group sessions only for the parents, focusing on the importance of physical activity for their children, diet, body and self-image and how to motivate the children. The children were weighed before and after attending the program, and their physical activity habits were recorded by using questionnaires, but no standardized forms or methods of measurement or evaluation were used. The program staff in M3 consisted of a psychiatric nurse, sports students from a high school to lead the activities, health nurse, physiotherapist, a child welfare pedagogue from the family centre and a psychiatric nurse with competence in body and self-image.

### **3.2 Informants**

Three informants from M1 were invited to participate in the present study. This included a health nurse, municipality chief physician and one of the physical activity instructors. From M2 and M3 one informant from each the municipalities were invited to participate. They both had an active role in the project group in their municipality and one of them was a physiotherapist and the other a psychiatric nurse who also was the manager in the Healthy Living Centre. The informants were contacted by e-mail and all of them were willing to share their information through individual semi-structured interviews. The sample was selected by purposive sampling (Malterud, 2013) and the chosen informants were considered the best to give thought into the aim of the present study.

### **3.3 Data collection**

Qualitative data was collected from the five participants through semi-structured, individual interviews with open-ended questions (Appendix 1). Following specific themes and suggested

questions, the interviews opened for changes in the guide and interview along the way. Questions that were asked were descriptive, interpretive, but also of exploratory character. The goal was that the empirical data would reflect the informants' experiences and opinions and it was important not to ask the informants leading questions (Malterud, 2013). Different interview guides were created and used in each of the interviews, but some questions were similar.

The interviews were planned in October and November 2014, and the informants were contacted at the same time. The interviews were conducted in the period November 2014 to January 2015. Three of them took place in M1, one in M2 and one in M3. The interviews lasted approximately 60 minutes and all of the interviews were recorded using a digital voice recorder. The recordings were transferred to a password-protected computer where they were stored in a separate folder. The interviews were transcribed verbatim within a week after they were conducted while the interviews still were fresh in memory.

### **3.4 Ethical considerations**

An application was submitted and approved by the Norwegian Social Science Data Services (NSD) before the data collection took place (Appendix 2). Information about the study was conveyed to participants both written and oral in advance of the interviews. All informants signed a written consent form that was sent to them in advance (Appendix 3). The informants also received information that they could withdraw at any time if they wanted to. All data material was treated anonymously and only authorized personnel had access to the data material. The informants were offered to read through the article before it was submitted.

### **3.5 Data analysis**

Analysis of qualitative data implies that there may be several valid alternative interpretations at the same time (Malterud, 2013). In the present study Systematic Text Condensation (STC), inspired by Giorgis phenomenological analysis and modified by Malterud (2013), was used to analyse the data. The analytic method consisted of four steps. The first step was to read through the transcribed interviews to get a complete overview of the transcribed data material and to assess possible themes that represented the informants' experiences with the implementation of the intervention programs. Keywords for possible themes were written down when reading through the interviews, and in accordance with the phenomenological

perspective, it was actively worked on putting the pre-understanding and theoretical framework in temporary brackets (Malterud, 2013).

The next step was to read through the text once more in order to sort out the relevant data from the irrelevant. The relevant data could conceivably address the aim of the present study. A systematic assessment of the material was conducted to identify meaning units and parts of the text that contained information on one or more themes from the first step were selected. Meaning units were marked with colours in the text at the same time as they were categorised according to the themes from step one in a separate document. Different colours were used for each of the informant's meaning units. This was to have control over from whom the different statements derived from. The meaning units were also numbered according to where in the text they were retrieved from, which made it easy to go back in the text and see where the meaning units came from, if there was a need for it. During the process it was necessary to expand the number of codes and to rename certain codes. When step two was complete there was ultimately too many codes and it became necessary to shorten the number of codes. Codes containing little text or text that referred to approximately the same theme were merged, leaving a total of six codes.

The third step consisted of a systematic abstraction of meaning units from the code groups from step two. The contents under each code were sorted into two or three subgroups. The subgroups were now the analytical units. Meaning was systematically extracted by condensing the content of the meaning units that were coded together (Malterud, 2013). Condensates, or artificial quotes, were made. The condensates are artefacts embedded in the data that will carry the specific content of the individual meaning units by converting them to a more general statement (Malterud, 2013). Furthermore, a systematic procedure was carried out to condense the contents of each of the subgroups within each code group. The informant's original terminology was attempted maintained in the condensation. This process resulted in some authentic, illustrative quotations that illustrated the text that were condensed.

In the fourth step of the analysis the pieces were put back together, or re-contextualized. The retellings that could lay a foundation for descriptions or concepts were now summarized. When making the summary it was attempted to be loyal to both the informant's voice while providing insight to the reader (Malterud, 2013). Summary of each subgroup got its own paragraph and were written in third person. At this stage in the analysis it was considered

whether the results provided valid descriptions of the contexts from which they were originally taken. This analytical text represents the results of the present study. When finalised it was considered whether the authentic, illustrative quotations from step three represented an adequate illustration. The analyses was first conducted in Norwegian and translated to English after finalising step four.

## **4. Method discussion**

Qualitative methods are best suited when describing and analysing characteristics or qualities social of phenomena. Using qualitative methods makes it possible to obtain more reflective and nuanced responses from the informants than one can get from questionnaires (Jacobsen, 2005; Kvale & Brinkmann, 2009). According to Nastasi and Schensul (2005), qualitative methods are important for documenting the adaptations needed in the implementation of interventions to real-life contexts. Qualitative methods are also crucial for identifying essential intervention components that are related to desired outcomes of interventions (Nastasi & Schensul, 2005).

### **4.1 Internal validity**

Maintaining the validity of the present study has been attempted throughout the entire process. In the present study it has been attempted to choose a fitting method and design, to ensure that the informants gave rich information, to transcribe the recordings verbatim and understandable, and to make the analysis logical. According to Kvale and Brinkmann (2009), validity should not be limited to a certain phase of the research process, but rather characterize all phases. Precautions taken to ensure the internal validity in the present study are described in the following paragraphs.

#### **4.1.1 Selection of informants**

The sample of informants in the present study was selected by purposive sampling, and includes representatives from three municipalities, which were possible for the interviewer to visit within the available time limit. Malterud (2013) emphasises that it is natural to use purposive sample in qualitative studies, as it is important to ensure a rich and varied sample that is adequate and can contribute to reach the aim of the present study. The sample in the present study was varied as the informants were from different locations, all of which had different experiences with the intervention program. The informants also had different roles in the intervention program, as well as different academic backgrounds, which could affect their perspective on factors that may have been important in the intervention program. Polit and Beck (2014) refer to the use of data collected from of different persons at different levels, and data collected on the same phenomenon across multiple sites, as person- and space

triangulation. Space triangulation tests for cross-site consistency, while person triangulation validates the data through multiple perspectives (Polit & Beck, 2014). In the present study there were three informants from M1 while there were only one from M2 and M3. Including equal number of informants from each municipality could make the cross-site consistency more valid.

To get a more accurate and complete understanding of how the program has been implemented and experienced, it could have been useful to interview other informants in addition to the present study's sample. Possible additional informants could have been representatives from the municipalities' municipal council, some of the participating parents or children, or some of the health nurses responsible for the recruitment and individual guidance conversations. In terms of time, resources and geographical residence of the informants in the present study, the choice fell on five informants who possessed considerable knowledge about the intervention, and who were willing to share their experiences. If the sample size had been too large for the study's timeframe, it could have been difficult to conduct a proper analysis (Malterud, 2013).

The municipalities have been collaborating with the Universities of Agder and Bergen, who are conducting a research study on the efficiency of the program targeting overweight and obese children and their families. Although the informants were asked about how they carried out the program before they were connected to the Universities, it must be noted that the experiences the informants conveyed could be influenced by experiences they had after the programs were connected to the Universities.

#### **4.1.2 Interviews**

Malterud (2013) points out that the context surrounding the interview affects the content of the interviews and thus is important in the development of knowledge. One can distinguish between two different types of interview locations: a situation that is natural for the informant and one that is artificial (Jacobsen, 2005). A natural situation is a place that the informants know well. Four of the interviews in the present study were conducted at the informant's workplace by the informant's own request. The fifth interview was conducted at a quiet cafe in agreement between the informant and the interviewer.

The impressions during the interviews were that the informants felt safe and comfortable in the context and with sharing their information. According to Malterud (2013), data collection has a personal nature, where contact between informant and researcher requires that the parties experiences mutual trust and respect. The conversation in the interview affects the climate that determines how close the researcher is allowed to get to the informant and what kind of knowledge can be shared in this interaction (Malterud, 2013). The interviewer and the interviews did not focus on sensitive or personal topics that could directly harm or infringe the informants, and the informants did not seem to withhold any information.

The researcher's abilities and interests put their mark on the material in form of the questions asked or not asked and responses given or not given. There is a collaborative process that forms the informant's story and the data accompanying this, which starts already in the interview setting (Kvale & Brinkmann, 2009; Malterud, 2013). The questions asked in the present study were adapted to each of the informants as they all had different roles in the intervention program and were located in different municipalities. The interview guide contained guiding questions with some follow-up questions. The experience from all of the interviews was that the interview guide was only partially followed, and that the interviews went on as natural conversations where the subjects presented themselves. The advantage of this was that the interviews had a natural flow and both informants and interviewer felt relaxed and comfortable in the setting.

#### **4.1.3 The role of the researcher**

It is important that the researcher shows reflexivity throughout the research process (Malterud, 2013). This means that the researcher had to be conscious about his or her role as a researcher and not fall for the temptation to discuss the results in light of the pre-understanding and previous experiences, but rather reflect on what the findings mean for the aim of the present study. The researcher attempted to put the pre-understanding in brackets during the research process. However, the pre-understanding is often an important part of the researcher's motivation to initiate research around a particular theme (Malterud, 2013). In the present study, the researchers background involved lot of theory on intervention work throughout public health studies. The researcher also has great interest in prevention and health promotion work and recognizes the importance of preventing and combating childhood overweight and obesity. The researcher had a pre-understanding that interventions in several

municipalities do not undergo thorough evaluations. This pre-understanding was something the researcher worked to put in brackets during the research process, as it was important not to judge the municipalities based on rumours.

The pre-understanding can both strengthen and weaken the research, depending on how we use it (Malterud, 2013). According to Malterud (2013), the pre-understanding is with the researcher throughout the whole research process and will affect the data collection and data analysis. In the present study the researcher strove to detach from the pre-understanding both in advance of the study and throughout the analysis. This has not been based on a desire to view an objective reality, but rather to meet the informants with an open mind for both the positive and the negative aspects associated with what they talked about. In this case the researcher did not have any practical knowledge about how interventions are implemented in municipalities. The researcher had, however, through several years of studying public health, gained insight into and opinions about how interventions should be developed, implemented and evaluated in theory. During the interviews the researcher had to remember to let the informants share their experiences of the situation without affecting the informants by letting her thoughts of the intervention get in the way.

#### **4.1.4 Analysis**

It would have been possible to select several different qualitative methods of analysis. The choice fell on a method where it was assured adequate methodological guidance. Material in the present study consists of transcribed text where units in the text have been identified and form the basis for the development of computer-based categories, and then organized so that the meaning becomes clearer. The analysis method offers a process of reflexivity, feasibility and inter-subjectivity for novice researchers, while preserving a responsible level of methodological rigour (Malterud, 2012). The method was therefore considered well suited to analyse the material of the present study.

The supervisor assisted throughout the analysis process, and being more than one researcher conducting the analysis is referred to as investigator triangulation, which strengthens the internal validity of the analysis and the results of the present study (Malterud, 2013; Polit & Beck, 2014). The researchers used their findings and differences in the analysis result to discuss towards a presentation they both found reasonable.



## 4.2 External validity/transferability

It is difficult to defend a generalization based on results from qualitative studies (Jacobsen, 2005; Malterud, 2013). One can argue that generalization is possible, but it is not possible to prove anything (Jacobsen, 2005). Malterud (2013) uses the term transferability instead of generalization, as it to a greater extent implies that there are limits and conditions to how the findings of a study may be applied to other contexts. Transferability depends on whether or not the findings provide meaning beyond itself. One indicator of transferability is whether the results of a study can function as a source of inspiration for other researchers and lead to a deeper understanding of a topic (Malterud, 2013). For example, the present study has little purpose to ascertain the extent or frequency of a phenomenon and results in the present study do not mean that experiences will be similar in all Healthy Life Centres. They may, however, be used as an indication of how the various individuals that work with these types of intervention programs perceive their situation. The description and results may also have a transfer value in terms of giving inspiration to others who are working with similar intervention programs.

## 4.3 Reliability

Reliability is related to whether the results can be reproduced at another time by another researcher (Kvale & Brinkmann, 2009). This concerns whether the informants would change their answers in interviews with other researchers. The informants will, according to Jacobsen (2005), be affected by the interviewer. In the present study they might have answered differently if the interviewer was someone with practical experience in the field, or someone with no knowledge about the field at all. It should be stated that during the interviews in the present study, the conversation rarely stopped and the informants did not struggle with sharing information on the subject.

The reliability in the transcriptions was addressed by transcribing as verbatim as possible. The informants' dialects were not retained in the transcriptions, but were written in Standardised Norwegian in order to make the transcriptions understandable and comparable. When words or phrases were difficult to understand, the audio recoding was repeated until the correct words were understood. The interviewer transcribed all of the recordings within a week after interviews were conducted. This made it possible to remember details from the conversations which could be useful when the recording were incomprehensible

The interviewer was also the one that translated the results from Norwegian to English. Twinn (1997) emphasizes the importance of only having one translator to translate the data in order to maximise the data's reliability. There were some corresponding words that did not exist in the target language. In these cases the researcher tried to find words that reflected the informants narrative without losing or changing the meaning of the content.

#### **4.4 Limitations of the method**

Other methods could have been used to investigate the phenomenon further and strengthening the validity of the research. By using method triangulation, which involves using multiple methods of data collection on the same phenomenon (Polit & Beck, 2014), it would have been possible to acquire extended knowledge and understanding of the implementation. Using quantitative methods in addition to qualitative interviews in a mixed methods design would make it possible to identify how interventions for overweight children in various municipalities in the country have been implemented and conducted. This could have been conducted by using cross-sectional studies to identify how different stakeholders perform the intervention and examine factors contributing to the implementation. Within the framework of the present study it was not possible to carry out such studies, but this may be accomplished by further research in the field.

## References

- Barlow, S. E. (2007). Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report. *Pediatrics*, *120*(Supplement 4), 164-192. doi: 10.1542/peds.2007-2329C
- Bartholomew, L. K., Parcel, G. S., Kok, G., Gottlieb, N. H., & Fernández, M. E. (2011). *Planning health promotion programs: an intervention mapping approach* (3rd ed.). San Francisco: Jossey-Bass.
- Berg, R., & Underland, V. (2012). *Effekten av helsefremmende og forebyggende tiltak på kosthold, fysisk aktivitet, overvekt og seksuell helse hos barn og unge* (Vol. 6). Oslo: Nasjonalt kunnskapssenter for helsetjenesten.
- Biehl, A., Hovengen, R., Groholt, E., Hjelmesaeth, J., Strand, B., & Meyer, H. (2013). Adiposity among children in Norway by urbanity and maternal education: a nationally representative study. *BMC Public Health*, *13*. doi: 10.1186/1471-2458-13-842
- Biehl, A., Hovengen, R., Groholt, E., Hjelmesaeth, J., Strand, B., & Meyer, H. (2014). Parental marital status and childhood overweight and obesity in Norway: a nationally representative cross-sectional study. *BMJ Open*, *4*(6). doi: 10.1136/bmjopen-2013-004502
- Birch, L. L., & Ventura, A. K. (2009). Preventing childhood obesity: What works. *International Journal of Obesity*, *33*, 74-81. doi: 10.1038/ijo.2009.22
- Branca, F., Nikogosian, H., & Lobstein, T. (2007). *The Challenge of obesity in the WHO European Region and the strategies for response* Retrieved from [http://www.euro.who.int/\\_data/assets/pdf\\_file/0010/74746/E90711.pdf](http://www.euro.who.int/_data/assets/pdf_file/0010/74746/E90711.pdf)
- Bäcklund, C., Sundelin, G., & Larsson, C. (2011). Effect of a 1-year lifestyle intervention on physical activity in overweight and obese children. *Advances in Physiotherapy*, *13*(3), 87-96. doi: 10.3109/14038196.2011.566353
- Båtevik, F. O., Aarflot, U., Bergem, R., Barstad, J., Tønnesen, A., Høgskulen i, V., . . . Sosial- og, h. (2008). Ein resept å gå for?: evaluering av modellar for fysisk aktivitet, røykeslutt og sunt kosthaldArbeidsrapport (Vol. 225).
- Caspersen, C. J., Powell, K. E., & Christenson, G. (1985). Physical activity, exercise and physical fitness: definitions and distinctions for health-related research. *Public Health Reports*, *100*(2), 126-131.

- Cole, T. J., Bellizzi, M. C., Flegal, K. M., & Dietz, W. H. (2000). Establishing a standard definition for child overweight and obesity worldwide international survey. *BMJ*, *320*, 1-6.
- Department of Health and Human Services. (2002). *Physical Activity Evaluation Handbook*. Atlanta: Centers for Disease Control and Prevention Retrieved from <http://www.cdc.gov/nccdphp/dnpa/physical/handbook/pdf/handbook.pdf>.
- Department of Health and Human Services. (2008). *Physical Activity Guidelines Advisory Committee Report, 2008* (Vol. 67). Washington, DC.
- Dietz, W. H., & Gortmaker, S. L. (2001). Preventing obesity in children and adolescents. *Annual review of public health*, *22*, 337.
- Ebbeling, C. B., Pawlak, D. B., & Ludwig, D. S. (2002). Childhood obesity: Public-health crisis, common sense cure. *The Lancet*, *360*, 473-482. doi: 10.1016/S0140-6736(02)09678-2
- Epstein, L. H., Paluch, R., Gordy, C., & Dorn, J. (2000). Decreasing sedentary behaviors in treating pediatric obesity. *Arch. Pediatr. Adolesc. Med.*, *154*(3), 220-226.
- Guttmacher, S., Kelly, P. J., & Ruiz-Janecko, Y. (2010). *Community-based health interventions: principles and applications* (1st ed. ed.). San Francisco: Jossey-Bass.
- Herrera, B. M., Keildson, S., & Lindgren, C. M. (2011). Genetics and epigenetics of obesity. *Maturitas*, *69*(1), 41-49. doi: 10.1016/j.maturitas.2011.02.018
- Hesketh, K., Crawford, D., Salmon, J., Jackson, M., & Campbell, K. (2007). Associations between family circumstance and weight status of Australian children. *Int. J. Pediatr. Obes.*, *2*(2), 86-96. doi: 10.1080/17477160601148554
- Hovengen, R., Biehl, A., & Glavin, K. (2014). Barns vekst i Norge 2008 - 2010 - 2012: høyde, vekt og livvidde blant 3. klassinger Rapport (Nasjonalt folkehelseinstitutt : online) (Vol. 2014:3). Oslo: Nasjonalt folkehelseinstitutt.
- Jacobsen, D. I. (2005). *Hvordan gjennomføre undersøkelser? : innføring i samfunnsvitenskapelig metode* (2. utg. ed.). Kristiansand: Høyskoleforlaget.
- James, P. T. (2004). Obesity: The worldwide epidemic. *Clinics in Dermatology*, *22*(4), 276-280. doi: 10.1016/j.clindermatol.2004.01.010
- Janssen, I., & LeBlanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *The International Journal of Behavioral Nutrition and Physical Activity*, *7*, 40.
- Jiménez-pavón, D., Kelly, J., & Reilly, J. J. (2010). Associations between objectively measured habitual physical activity and adiposity in children and adolescents:

- Systematic review. *International Journal of Pediatric Obesity*, 5(1), 3-18. doi: 10.3109/17477160903067601
- Juliusson, P. B., Eide, G. E., Roelants, M., Waaler, P. E., Hauspie, R., & Bjerknes, R. (2010). Overweight and obesity in Norwegian children: prevalence and socio-demographic risk factors. *Acta Paediatr*, 99(6), 900-905. doi: 10.1111/j.1651-2227.2010.01730.x
- Kokkvoll, A., Grimsgaard, S., Njølstad, I., Ødegaard, R., & Flægstad, T. (2013). Single versus multiple-family intervention in childhood overweight-Finnmark Activity School: A randomised trial. *Arch Dis Child*. doi: 10.1136/archdischild-2012-303571
- Koletzko, B., & Toschke, A. M. (2010). Meal patterns and frequencies: Do they affect body weight in children and adolescents? *Critical Reviews in Food Science and Nutrition*, 50(2), 100-105. doi: 10.1080/10408390903467431
- Kolle, E., Stokke, J. S., Hansen, B. H., & Anderssen, S. A. (2012). Fysisk aktivitet blant 6-, 9- og 15-åringer i Norge: Resultater fra en kartlegging i 2011 Rapport / Helsedirektoratet. Oslo: Helsedirektoratet. Retrieved from <http://helsedirektoratet.no/publikasjoner/fysisk-aktivitet-blant-6-9-og-15-aringer-i-norge/Publikasjoner/fysisk-aktivitet-blant-6-9-og-15-aringer-i-norge.pdf>.
- Krebs, N., Baker, R. D., Greer, F., Heyman, M. B., Jaksic, T., Lifshitz, F., & Jacobson, M. S. (2003). Prevention of pediatric overweight and obesity. *Pediatrics*, 112(2), 424-430.
- Kumanyika, S. K., Jeffery, R. W., Morabia, A., Ritenbaugh, C., & Antipatis, V. J. (2002). Obesity prevention: the case for action. *Int. J. Obes.*, 26(3), 425-436. doi: 10.1038/sj/oji/0801938
- Kumanyika, S. K., Obarzanek, E., Stettler, N., Bell, R., Field, A. E., Fortmann, S. P., . . . Hong, Y. (2008). Population-based prevention of obesity: The need for comprehensive promotion of healthful eating, physical activity, and energy balance: A scientific statement from American Heart Association Council on Epidemiology and Prevention, Interdisciplinary Committee for prevention (formerly the expert panel on population and prevention science). *Circulation*, 118(4), 428-464. doi: 10.1161/CIRCULATIONAHA.108.189702
- Kvale, S., & Brinkmann, S. (2009). *Det kvalitative forskningsintervju* (T. M. Anderssen & J. Rygge, Trans. 2. utg. ed.). Oslo: Gyldendal akademisk.
- Lee, S. J., Altschul, I., & Mowbray, C. T. (2008). Using planned adaptation to implement evidence-based programs with new populations. *American Journal of Community Psychology*, 41(3-4), 290-303. doi: 10.1007/s10464-008-9160-5

- Linnan, L., & Steckler, A. (2002). *Process Evaluation for Public Health Interventions and Research: An Overview*. San Francisco: John Wiley & Sons Inc.
- Lioret, S., Volatier, J., Lafay, L., Touvier, M., & Maire, B. (2009). Is food portion size a risk factor of childhood overweight? *Eur. J. Clin. Nutr.*, *63*(3), 382-391. doi: 10.1038/sj.ejcn.1602958
- Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: a crisis in public health. *Obesity reviews : an official journal of the International Association for the Study of Obesity*, *5*(1), 4-104.
- Luttikhuis, H. O., Baur, L., Jansen, H., Shrewsbury, V. A., O'Malley, C., Stolk, R., P., & Summerbell, C. D. (2009). Interventions for treating obesity in children (Review). *Cochrane Database of Systematic Reviews*(1), 1-197. doi: 10.1002/14651858.CD001872.pub2.
- Malina, R. M., & Katzmarzyk, P. T. (1999). Validity of the body mass index as an indicator of the risk and presence of overweight in adolescents. *American Journal of Clinical Nutrition*, *70*(1), 131S.
- Malterud, K. (2012). Systematic text condensation: A strategy for qualitative analysis. *Scandinavian Journal of Public Health*, *40*(8), 795-805. doi: 10.1177/1403494812465030
- Malterud, K. (2013). *Kvalitative metoder i medisinsk forskning. En innføring* (3. ed.). Oslo: Universitetsforlaget.
- McConahy, K., Smiciklas-Wright, H., Birch, L., Mitchell, D. C., & Picciano, M. (2002). Food portions are positively related to energy intake and body weight in early childhood. *J. Pediatr.*, *140*(3), 340-347. doi: 10.1067/mpd.2002.122467
- McLean, N., Griffin, S., Toney, K., & Hardeman, W. (2003). Family involvement in weight control, weight maintenance and weight-loss interventions: A systematic review of randomised trials. *International Journal of Obesity*, *27*, 987-1005. doi: 10.1038/sj.ijo.0802383
- Meld. St. nr 19. (2014-2015). *Folkehelsemeldingen, mestring og muligheter*. Oslo: Ministry of Health and Care Services Retrieved from <https://http://www.regjeringen.no/contentassets/7fe0d990020b4e0fb61f35e1e05c84fe/no/pdfs/stm201420150019000dddpdfs.pdf>.
- Mikkilä, V., Räsänen, L., Raitakari, O. T., Pietinen, P., & Viikari, J. (2004). Longitudinal changes in diet from childhood into adulthood with respect to risk of cardiovascular

- diseases: The Cardiovascular Risk in Young Finns Study. *European Journal of Clinical Nutrition*, 58(7), 1038-1045. doi: 10.1038/sj.ejcn.1601929
- Ministry of Health and Care Services. (2009). *Samhandlingsreformen: rett behandling - på rett sted - til rett tid* (Vol. 47). Oslo: Helse- og omsorgsdepartementet.
- Nastasi, B. K., & Schensul, S. L. (2005). Contributions of qualitative research to the validity of intervention research. *Journal of School Psychology*, 43(3), 177-195. doi: 10.1016/j.jsp.2005.04.003
- Ng, M., Fleming, T., Robinson, M., Thomson, B., Graetz, N., Margono, C., . . . Zhu, S. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, 384(9945), 766-781. doi: 10.1016/S0140-6736(14)60460-8
- Norwegian Directorate of Health. (2010). Forebygging, utredning, og behandling av overvekt og fedme hos barn og unge: Nasjonale faglige retningslinjer for primærhelsetjenesten. Oslo: Helsedirektoratet.
- Norwegian Directorate of Health. (2011). *Kostråd for å fremme folkehelsen og forebygge kroniske sykdommer: Metodologi og vitenskapelig kunnskapsgrunnlag*. Oslo: Helsedirektoratet.
- Norwegian Directorate of Health. (2013). Veileder for kommunale frisklivssentraler: etablering og organisering Veileder / Helsedirektoratet (rev. ed.). Oslo: Helsedirektoratet.
- Norwegian Directorate of Health. (2014). *Anbefalinger om kosthold, ernæring og fysisk aktivitet*. Oslo: Helsedirektoratet Retrieved from <http://helsedirektoratet.no/publikasjoner/anbefalinger-om-kosthold-ernering-og-fysisk-aktivitet/Publikasjoner/anbefalinger-om-kosthold-ernering-og-fysisk-aktivitet.pdf>.
- Nowicka, P., & Flodmark, C.-E. (2008). Family in pediatric obesity management: A literature review. *International Journal of Pediatric Obesity*, 3(1), 44-50. doi: 10.1080/17477160801896994
- Oellingrath, I. M., Svendsen, M. V., & Brantstaeter, A. L. (2011). Tracking of eating patterns and overweight - a follow-up study of Norwegian schoolchildren from middle childhood to early adolescence. *Nutrition Journal*, 10(106). doi: 10.1186/1475-2891-10-106

- Osei-Assibey, G., Dick, S., MacDiarmid, J., McNeill, G., Semple, S., Reilly, J. J., . . . Cowie, H. (2012). The influence of the food environment on overweight and obesity in young children: A systematic review. *BMJ Open*, *2*(6). doi: 10.1136/bmjopen-2012-001538
- Patro, B., & Szajewska, H. (2010). Meal patterns and childhood obesity. *Curr. Opin. Clin. Nutr. Metab. Care*, *13*(3), 300-304. doi: 10.1097/MCO.0b013e32833681a2
- Polit, D. F., & Beck, C. T. (2014). *Essentials of nursing research : appraising evidence for nursing practice* (8th ed.). Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.
- Preskill, H. (1994). Evaluation's role in enhancing organizational learning: A model for practice. *Evaluation and Program Planning*, *17*(3), 291-297. doi: 10.1016/0149-7189(94)90008-6
- Reilly, J. J., Methven, E., McDowell, Z. C., Hacking, B., Alexander, D., Stewart, L., & Kelnar, C. J. H. (2003). Health consequences of obesity. *Arch Dis Child*, *88*(9), 748-752. doi: 10.1136/adc.88.9.748
- Rössner, S. (2009). Overvekt og fedme. In R. Bahr (Ed.), *Aktivitetshåndboken: fysisk aktivitet i forebygging og behandling* (pp. 466-483). Oslo: Helsedirektoratet.
- Serdula, M. K., Ivery, D., Coates, R. J., Freedman, D. S., Williamson, D. F., & Byers, T. (1993). Do obese children become obese adults? *Prev Med*, *22*(2), 167-177. doi: 10.1006/pmed.1993.1014
- Shrewsbury, V., & Wardle, J. (2008). Socioeconomic status and adiposity in childhood: A systematic review of cross-sectional studies 1990-2005. *Obesity*, *16*(2), 275-284. doi: 10.1038/oby.2007.35
- Shuldiner, A. (2008). Obesity Genes and Gene-Environment-Behavior Interactions: Recommendations for a Way Forward. *Obesity*, *16*, S79-S81. doi: 10.1038/oby.2008.523
- Silventoinen, K., Rokholm, B., Kaprio, J., & Sørensen, T. I. (2010). The genetic and environmental influences on childhood obesity: a systematic review of twin and adoption studies. *International Journal of Obesity*, *34*(1), 29-40. doi: 10.1038/ijo.2009.177
- Singh, A. S., Mulder, C., Twisk, J. W. R., Van Mechelen, W., & Chinapaw, M. J. M. (2008). Tracking of childhood overweight into adulthood: A systematic review of the literature. *Obesity Reviews*, *9*(5), 474-488. doi: 10.1111/j.1467-789X.2008.00475.x
- Strauss, R. S., & Knight, J. (1999). Influence of the home environment on the development of obesity in children. *Pediatrics*, *103*(6), e85.



- Strong, W., Malina, R. M., Blimkie, C. J. R., Daniels, Sr., Dishman, R., Gutin, B., . . . Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of Pediatrics*, *146*(6), 732-737. doi: 10.1016/j.jpeds.2005.01.055
- Swanson, M., Bardach, S. H., Studts, C. R., Schoenberg, N. E., & Bersamin, A. (2011). Intergenerational energy balance interventions: A systematic literature review. *Health Education and Behavior*, *38*(2), 171-197. doi: 10.1177/1090198110378973
- Twinn, S. (1997). An exploratory study examining the influence of translation on the validity and reliability of qualitative data in nursing research. *J Adv Nurs*, *26*(2), 418-423.
- Waling, M., Larsson, C., Lind, T., & Hernell, O. (2010). A one-year intervention has modest effects on energy and macronutrient intakes of overweight and obese Swedish children. *Journal of Nutrition*, *140*(10), 1793-1798. doi: 10.3945/jn.110.125435
- Warburton, D., & Bredin, S. (2006). Health benefits of physical activity: the evidence. *Canadian Medical Association. Journal*, *174*(6), 801-809.
- Ward, D. S., Saunders, R. P., & Pate, R. R. (2007). *Physical activity interventions in children and adolescents*. Champaign, Ill: Human Kinetics.
- Waters, E., de Silva-Sanigorski, A., Hall, B. J., Brown, T., Campbell, K. J., Gao, Y., . . . Summerbell, C. D. (2011). Interventions for preventing obesity in children. *The Cochrane database of systematic reviews*(12), 1-223. doi: 10.1002/14651858.CD001871.pub3
- World Health Organization. (2014). Obesity and overweight. Retrieved 03.08.2014, from <http://www.who.int/mediacentre/factsheets/fs311/en/>
- Young, L., & Nestle, M. (2002). The contribution of expanding portion sizes to the US obesity epidemic. *Am. J. Public Health*, *92*(2), 246-249.
- Øen, G., & Stormark, K. M. (2012). Treatment of childhood obesity in Norway – A multi-case study. *Nordisk sygeplejeforskning*, *2*(04), 263-282.
- Øen, G., & Stormark, K. M. (2013). Participatory action research in the implementing process of evidence-based intervention to prevent childhood obesity: Project design of the "healthy Future" study. *Journal of Obesity*, *2013*. doi: 10.1155/2013/437206



# **Part II**

# **ARTICLE**

**Ida Sætre Helgeland**

University of Agder

2015



# **Examining the experiences of implementing a lifestyle intervention for overweight and obese children**

Ida Sætre Helgeland

*Department of Public Health, Sport and Nutrition,  
Faculty of Health and Sport Sciences, University of Agder, Kristiansand, Norway*

Present address for corresponding author and reprint request:

Ida Sætre Helgeland,

Postal address: T.H. Skoglandsgate 31, 5532 Haugesund, Norway

Tel: +47 48 13 94 32

E-mail: [ida\\_helgealand@hotmail.com](mailto:ida_helgealand@hotmail.com)

\*Co-author's when submitting article: Tonje Holte Stea, Sveinung Berntsen and Eirik Abildsnes

Word counts: Manuscript (not including abstract, references, tables and acknowledgements):

6704

Number of references: 43

**Link to “BMC Public Health”**

<http://www.biomedcentral.com/bmcpublichealth/>

**There is no competing or conflicts of interests.**

## **Abstract**

*Background:* Childhood obesity is one of the 21st century's most serious public health challenges. In Norway, health nurses are obligated to record children's body mass and children who are classified as overweight or obese should be offered a follow up through lifestyle programs. There has been a lack of such lifestyle programs, however, some municipalities have implemented intervention programs to support overweight and obese children and their families' lifestyle changes.

*Aim:* To examine how a lifestyle intervention focusing on promoting healthy lifestyle habits in overweight and obese children and their families in three different Norwegian municipalities was implemented and conducted. The intervention focused on physical activity, diet and individual guidance. Important enhancers and barriers related to the implementation process were identified.

*Methods:* In depth interviews were conducted with representatives (n=5) involved in the implementation process in three different municipalities. All interviews were recorded digitally, transcribed verbatim and analysed using systematic text condensation.

*Results:* An initiator to establish agreements in the municipality council was identified as an important enhancer in the implementation. Barriers in the implementation were related to the cooperation between the program facilitators, municipal council and the health nurses. Resistance from the participating children's parents and a lack of program founding were also identified as barriers. There was a lack of structured evaluations of the intervention programs. The intervention programs components were identified as important focus areas, including connection to local community, physical activity sessions, diet courses, individual counselling and involvement of the entire family.

*Conclusion:* Involvement of a determined individual with strong sense of commitment seems essential for implementing such intervention programs. For future work, better strategies to involve health nurses and how they should approach the families are needed. Thorough program evaluation should be conducted to examine the intervention program's effect, why they were successful or not, and to ensure future funding.

*Keywords:* Child health, Healthy Living Centres, lifestyle changes, obesity, overweight, qualitative methods

## Background

Between 1980 and 2013 the worldwide prevalence of overweight and obesity among children has increased with 47.1% [1]. Despite of a slight levelling off in recent years, the prevalence remains high. In Norway it is estimated that 16% of all third graders are overweight or obese [2]. Childhood obesity is of great concern as it may lead to future health risks, including increased risk for respiratory distress, type 2 diabetes, hypertension, bone fractures, insulin resistance and cardiovascular disease [3-5]. Obese children are also more likely to experience psychiatric or psychological problems such as social exclusion, depression, low self-esteem and behaviour problems than their leaner peers [5, 6]. Obesity is a complex condition influenced by both environmental factors, lifestyle factors and genes [7, 8]. Individual behavioural factors such as dietary and physical activity behaviours are, however, the main contributors to a positive energy balance, which is related to weight gain and development of overweight and obesity [9]. These behavioural factors are also modifiable factors that can be changed [10].

Early prevention is important, as childhood overweight and obesity may persist into adulthood, and the consequences of the condition are both severe and costly [5, 11, 12]. In Norway it is recommended to conduct routine measurements of children's height and body mass at five years of age, in 3rd grade and in 8th grade for identifying children at risk for overweight and obesity. Children who are classified as overweight or obese should be referred to programs that aim to modify the children's and their families' lifestyles [13]. Health nurses or general practitioner should offer to follow up and monitor the child with a focus on motivation for changing lifestyle habits [13]. However, according to Øen and Stormark [14], there has been a lack of structured and systematic plans for this monitoring, and allocation of the responsibility for this care has been unclear. Healthy Living Centres are a part of the municipal health care service, which offers guidance and support to people who need to change their lifestyle [15]. In some municipalities in Norway, Healthy Living Centres have conducted such intervention programs focusing on overweight and obese children and their families' lifestyle changes.

Previous studies on family-based lifestyle interventions targeting overweight and obese children have shown various results. A review researching 64 randomized controlled trials (RCT) studies by Luttikhuis et al., [16] reported that 6-12 months intervention programs targeting obese children and adolescents increase the probability of success if the intervention

was family-based and focused on both physical activity and dietary components. In another review Ho et al., [17] reported that lifestyle interventions targeting children and adolescents may lead to improvements in body mass and cardio-metabolic outcomes, and almost all effective interventions targeting children aged <12 years involved family components. Waters et al., [18] researched 55 studies and reported that intervention programs targeting overweight and obese children seem to be effective on children's BMI, particularly for children between 6 and 12 years of age. Even though broad ranges of components were researched, the specific components necessary to achieve beneficial impact on obesity in children were not distinguished. However, programs with benefit on children's BMI included components such as physical activity, diet, in addition to supportive environment and supportive home settings [18]. Other family-based lifestyle interventions have shown little or no effect on overweight and obese children's physical activity level and dietary habits [19-21]. According to Rogers [22], many intervention studies encounter implementation problems that diminish a program's impact. A review by Durlak and DuPre [23] reported that the level of implementation strongly affects the results achieved in health promotion and prevention programs. In the process of developing an intervention program it is important to plan for suitable adoption, implementation and maintenance. Failure to do so may cause the health promotion intervention to not be adopted, or adopted but not implemented [24].

In Norway, the access to evidence-based intervention programs aimed at overweight and obese children in Norway is limited and there is a need for research on the implementation of treatment programs aimed at overweight and obese children in primary care [25]. Examination of implementations is important to identify problems in intervention programs that can be corrected to ensure better results [23].

The aim of the present study was to examine the implementation process of a family-based intervention program that focused on promoting healthy lifestyle habits for overweight and obese children and their families in three different Norwegian municipalities. Important enhancers and barriers associated with the implementation process were identified.



## **Method**

### *The intervention programs*

The three municipalities have conducted three separate intervention programs targeting overweight and obese children and their families. The framework and intervention components were similar, but the use of these components varied. In municipality 1 (M1), the intervention program was carried out for two years and each intervention period lasted from September to May. The target group was overweight and obese children between six and ten years of age and their families. The intervention was community-based and collaborated with local sports clubs. Parents participated in mapping conversations with a health nurse at the start of the intervention program. This served to identify the children's lifestyle habits. In collaboration with health nurse the parents created an individual plan (IP) with a maximum of three main goals for the intervention year, followed by several more specific sub goals. In order to support the families in reaching these self-identified goals, each family was offered a minimum of three and a maximum of eight consultations with health nurses during the intervention period. All children participated in physical activity groups two days a week, one mandatory and one voluntary and parents participated in theoretical dietary courses. Children's physical activity level, motor abilities and sleep habits were recorded at baseline. The families' dietary habits were reported through structured interviews with the parents at the start of the program. All children were weighed and their iso- BMI was registered before attending the intervention program.

In municipality 2 (M2), the local intervention program, staff had several years of experience conducting intervention programs targeting overweight children in 1<sup>st</sup> to 4<sup>th</sup> grade and their families. The intervention program lasted 8 months from September to May, and parents were offered follow-up conversations in year two and three following the intervention. In addition, health nurses made follow-up phone calls to the families five years after attending the intervention. Physical activity sessions for the children were arranged twice a week. Both sessions were voluntary. Parents attended four theme meetings on motivation, physical activity, diet, and positive management of children. During the first two years the centre also conducted a fifth theme meeting with practical cooking session for the whole family. The parents were offered three individual guidance conversations each year for two years. The children's physical fitness and iso-BMI were recorded at the start and the end of the intervention program. Evaluation forms and feedback registers were given to the parents after each meeting. Health nurses also followed up with phone calls to the parents after five years.

Municipality 3 (M3) conducted a similar program in 2013; however, there were not enough participants to conduct physical activity sessions. The target group was overweight and obese children in 3<sup>rd</sup> grade. A mapping conversation to identify the children's lifestyle habits was conducted with the parents at the start and at the end of the intervention program. Children and parents participated in five family sessions. Two of the sessions focused on outdoor activities and the other three were both practical and theoretical diet courses. In addition parents attended five theme meetings, emphasising the importance of physical activity for children, diet, body and self-image, and how to motivate the children. Questionnaires to examine the children's physical activity level were used at baseline as well as registration of the children's' iso-BMI.

Due to a higher number of participants in 2014, M3 was able to include physical activity sessions in the intervention program. At this time, all three municipalities had been linked to a research study conducted by the Universities of Agder and Bergen. The research study focused on lifestyle components such as physical activity, dietary modifications and individual guidance. It was based on the experiences from intervention programs conducted in several Healthy Living Centres and previous research experiences. Each municipality chose how they wanted to carry out the intervention, partly in agreement with the research group in order to ensure that the municipalities were comparable.

The focus of the present study has been on the planning and implementation of the intervention program before the Universities of Agder and Bergen were connected to municipalities' intervention programs. The exception is M1, where the University of Agder contributed with expertise in the implementation process from the start. Some of the issues the informants discuss could be influenced by experiences they had with implementation after the program were connected with the collaborating Universities.

### *Informants*

Five informants representing three different municipalities in Southern and Western Norway were invited to participate in semi-structured interviews. The informants had different roles in designing, performing and implementing the intervention program in their municipalities. Informants representing M1 were a health nurse, a municipality chief physician and one of the physical activity instructors. A physiotherapist represented M2 and a psychiatric nurse who functioned as the manager of the Healthy Living Centres represented M3. The informants were contacted by e-mail and all of them were willing to participate. All informants signed a written

consent form that was sent to them in advance. The Norwegian Social Science Data Services approved the study before data collection took place.

### *Interviews*

Interviews were conducted between November 2014 and January 2015. The main topics of the interviews included the informant's experiences with implementing and conducting the program in their municipality. The interviews lasted approximately 60 minutes each. All of the interviews were recorded using a digital voice recorder. The interviews were transcribed verbatim within a week after they were conducted.

### *Data analysis*

Systematic Text Condensation (STC) inspired by Giorgis phenomenological analysis and modified by Malterud [26] was used to analyse the data material. The analytic method consisted of four steps. The first step involved reading through the transcripts and listen to the soundtracks to get an overall impression of the data and identifying the relevant main themes. The second step was to identify and code meaning-units in the text that represented the informant's experiences with implementing the intervention. In the third step the codes were used to clarify and summarize the material by sorting the content under each group into two or three sub groups, and then the meaning from each subgroup were systematically condensed. Finally, the fourth step was to re-contextualization of the condensates and summarizing the concepts of the subgroups and then into main themes.

## **Results**

Six different categories emerged when analysing the data. The main categories with subcategories are presented below.

### 1. Start-up

#### *Establishing an initiative*

According to one of the informants, the inspiration to initiate the intervention program in one of the municipalities came from a health nurse who became aware that overweight and obesity were major health problems. She also observed a lack of research and initiatives targeting overweight and obese children in the community. According to the informant, the municipal chief physician was an important gateway in the municipality, as he was the only representative in the municipality that seemed to show interest in the planned intervention. Together they wanted to establish an intervention program in accordance with the new national guidelines for prevention, assessment, and treatment of overweight and obesity in children. The municipality then decided to establish initiatives as collaboration with the Healthy Living Centre.

*“Then these new guidelines came. A guideline that said that every child should be weighed and measured at health centres. The guidelines stated that we should do something about childhood overweight and obesity, and then things started to happen here in the municipality”* (Interview 1)

Some informants reported that the inspiration to implement the intervention program came from other municipalities that had tried out similar programs.

### 2. Target group

#### *Recruitment and characteristics*

According to the informants, recruitment of participants was mainly done by health nurses at health centres. Participants could also sign up through their general practitioner or find information on the websites of the municipalities. Since health nurses record children’s body mass before they start school and in third grade, the informants believed that it would be a great opportunity for health nurses to assist in the recruitment of families with children in the target group. The informants emphasized the importance of including the entire family in the

intervention program, as the children cannot change their lifestyle on their own. Informants from some of the municipalities reported that the children were allowed to bring siblings to the physical activity sessions.

*“ The whole intervention should be directed towards the family. Parents should be change pilots and the children should not carry the responsibility for their own change process or overweight. ”* (Interview 1)

One informant reported that, initially, only children that were classified as overweight were invited to participate. However, as only a few participants were recruited, the inclusion criteria were expanded to include obese children. The difficulties associated with the recruitment of overweight children were partly explained by the fact that some parents did not see their child as overweight or simply did not acknowledge it as a problem. Some of the informants reported large differences in iso-BMI among the children, and that the parental motivation to make lifestyle changes increased with the BMI of the child. One of the informants explained that of those who were invited to participate, roughly 80% declined.

*“One of the families was so motivated that they started to make changes as soon as they were invited to participate in the group. ”* (Interview 5)

#### *The target group's experiences*

An informant from M1 reported that the families were pleased with the individual follow-ups, and that they were happy they did not have to share experiences with strangers in group sessions. Informants from M3 mentioned that parents found the group sessions very useful. Some informants referred to parents that, in order to protect their children from poor self-esteem and stigma, chose not to tell their children that they participated in an intervention for overweight and obese children. The informants highlighted that it was important for parents that the personnel responsible for implementing the program had the required expertise, which gave them confidence that their children would be taken care of in a satisfactory manner. The informants experienced that most of the parents had good insight into their own problems, and that physical activity recording of the children confirmed that the parents' assessment of their children's physical activity level was accurate.

*“You connect with some families better than others and I could almost say in advance who would not be able to make a change.” (Interview 1)*

Several of the informants mentioned that the children were pleased with the physical activity sessions and that they showed great motion enjoyment. Informants also reported that the children had great pleasure attending the practical cooking course.

*“I believe that most kids have had an absolutely great time.” (Interview 2)*

### 3. Resistance and challenges

#### *The municipality*

Several informants explained that it was difficult to get the municipality to initiate projects that required resources. During an early phase of the program one of the initiators in one of the municipalities experienced great resistance from the municipality council. This was because childhood overweight was seen as a complex problem that required relatively large amount of resources to address. The informants believed that the project needed to have the desired positive effect in order to convince the municipality to implement and sustain the intervention program.

*“It is challenging to establish new initiatives within an organization who do not care much about change and development.” (Interview 3)*

#### *Health professionals*

The informants claimed that some of the health care professionals and some of the parents have opposed measuring overweight or obese children's body mass if there was no program to offer them. Informants reported that health nurses in the various municipalities offered a lot of resistance and that it was difficult to include them in the program. It appeared as if the health nurses had difficulties conveying to the parents that their child was overweight, and many of them thought it was hasty to react even though the child could be classified as overweight. Some informants believed health nurses had refrained from contacting parents if they did not experience the child as overweight, even though it had an iso-BMI >25. According to some of the informants, several of the healthcare professionals found it too challenging to work with issues related to overweight and obesity as it is difficult to reverse childhood obesity.

*“Overweight and obesity are, which I did not understand then, but I realize now, the diagnoses that nobody wants.” (Interview 1)*

*“We should not really be surprised that there are many forms of resistance, both from parents and from health nurses.” (Interview 3)*

### *The parents*

Several of the informants mentioned that parents felt that health nurses exaggerated their children’s condition. Even though the children had been measured and weighed, many parents still denied that their child was overweight. One of the informants thought some parents resisted participation in the program because they were afraid they had to change their own lifestyle. The informants perceived this as a sensitive issue for parents, and that many parents could get upset.

*“Some of the parents said: Look at my child, you have to see that he/she looks totally normal weight. There is nothing wrong with my child.” (Interview 1)*

Other parents did not see the importance or seriousness of the issue. Some parents were reluctant to discuss the issue and said that they did not have time to get involved in the program. One of the informants did not consider the program as very time consuming, but understood that participants could experience it that way from the information available. According to several of the informants, parents were often unwilling to participate in activities that happened during weekends or required some extra effort, but the most committed parents were actively involved in all parts of the program.

*“It is an extra burden for the families, so they have to be willing to make an effort” (interview 5)*

### *Mandatory attendance*

According to some of the informants, parents expressed concern about some of the physical activity sessions being mandatory as some children already participated in other physical activity groups, and the parents did not want the children to quit their leisure activities. Some children were excluded from the program because they were not able to attend the physical activity sessions. Some of the informants also told of children that had to quit their leisure

activities in order to be involved with the program. In M2 the physical activity sessions had been made voluntary. The informants reflected that by having voluntary physical activity sessions they could reach out to more families. However, the informants also saw benefits of involving the children in all parts of the program.

#### 4. Adjustments, testing and results

##### *Adjustments*

Several informants believed that families' experiences were important to how the program was implemented. In some municipalities there had been a focus on group-work, which they changed in order to work with each family more individually. M2 started with practical diet courses, but decided to limit this offer to theoretical courses. At start up, the program facilitators performed mapping conversations and counselling sessions with the parents. Later the health nurses became fully responsible for this in order to make the program more feasible in some municipalities. The informants told of how they tried to arrange family activities such as swimming, hikes, treasure hunts and sleigh days, but due to low attendance, these organized family activities were discontinued. One of the informants said that the physical activity instructors had become more conscious of keeping a vigorous pace in the physical activities sessions.

*“There has been a development in all the components based on our past experiences. We've now got better tools, including when we have the conversations with the parents.”* (Interview 1)

##### *Testing and evaluation*

Most of the informants emphasised the importance of evaluation in order to get municipality council approval to continue the program, as well as measurement of the program's effect. However, the informants reported limited measurement, testing and evaluation in the different municipalities. In M1, the planned measurements of the children's physical activity level and motor abilities were only conducted at start of the program for the first two years and one of the informants reported that they failed to conduct post-tests. Regarding mapping of dietary habits and sleep registration, all foundations of the intervention, one of the informants from M1 explained that neither was recorded at the end of the program. According to one of the informants in M1, the parents were sceptical to the monitoring of the children's lifestyle and body mass. The informant also reported that a weakness in the original program was that they had planned testing, but did not have a plan B when they failed to get the participants to partake



in the post-tests. Some of the informants also reported that no local resources were earmarked for conducting evaluations, which made the process difficult.

The informant from M2 reported that an overall evaluation was done prior to continuance of the program in the municipality. The informant from M3 mentioned how they did not have a plan for evaluation other than record of body mass. One informant mentioned the importance of evaluating the program due to ethical reasons, as well as economical. Because of the amount of resources used and the sensitivity of the issue it is important to know if the program actually works.

*“When we choose to poke into relatively sensitive parts of human life, such as a child’s overweight, we must know that the help we offer actually works. There is an ethical obligation, I think, to know that a program is actually doing something beneficial and does not harm the children.”* (Interview 3)

#### *The programs results*

According to one informant, the youngest children had the most significant weight loss. The informants assumed that this might be because it is harder to reverse the process when the children are older. Several of the informants reported that some of the children reduced their body mass, while others continued to gain body mass. One informant referred to a family where both children and parents decreased their body mass with at least one weight curve. This might indicate a significant positive lifestyle change for the entire family.

*“Some have achieved amazing changes. One of the goals was to stabilize the children’s weights, which we experienced happened.”* (Interview 1)

Some informants believed that the children showed great progress throughout the physical activity sessions. They believed, these sessions improved their motor skills, and led to several of the children joining different local sport groups after attending the program. The informant from M2 reported that they have followed up the children with measurements after the intervention period. Measurements conducted in year two and three following the intervention showed that many children failed to stabilize their weight or to maintain their weight loss.

*“Even though the children had reduced or stabilized their body mass in the intervention year, they continued to put on weight the following years, when there no longer were a big focus on the families lifestyle changes.” (Interview 4)*

## 5. Competence and resources

### *Competence*

Several of the informants believed that it would be preferable to have physical education teachers as leader for the physical activity sessions. The downside of this suggestion is the high costs compared to using the competence available through local sports teams. Furthermore, some informants believed a good activity bank with activities that ensure sufficient movement, the development of motor skills and motion enjoyment could compensate for lack of personnel competence. A physiotherapist was in charge of the activity groups in one of the municipalities, and high school students were used as physical activity instructors in another. Some informants believed that different health professionals with good communication skills could perform the dietary teaching and that it did not necessarily have to be a nutritionist. Other informants expressed that nutrition expertise was of great importance. The informants believed that the most important skills required, was to have the necessary ability to conduct the individual guidance counselling with the parents. They elaborated that health nurses with training in motivational interviewing might be best suited for that job. The informants emphasized the importance of using the expertise that was available and the help that can be found in interdisciplinary cooperation and academic breadth. The informants also believed that it was essential that people who work with this program are genuinely interested in and dedicated to the program. The informants from M2 and M3 explained that they had success hiring external experts to teach the theme meetings.

*“A part of the concept is to use what we call “shelf components”, in other words that we use the competences and expertise that are available.” (Interview 3)*

### *Resources*

The informants said that the resources have been limited. One of the informants from M1 mentioned that recruiting participants, organizing and holding conversations with all parents, designing and following-up the different parts of the program were all responsibilities included in his/her 20% job position. This included. In M1 they were given a grant from the Norwegian Directorate of Health to operate the program in the start-up phase. M2 and M3 were granted

project funding from the county governor for the start-up phase, while the municipality were responsible for staff salaries. The informants reported that start-up funds are intended to stimulate the municipality to finance the program itself. The informants reported that it was hard to change the way the municipality use its funds, as municipalities are often cautious and prefer not to implement and grant resources to programs they do not know the effect of. The informant from M3 considered it a challenge that they did not get operating funds from the municipality council, while in M1 and M2 the program had been fully operational and economically supported by the municipal council. One of the informants estimated the cost of the program to around 40-50 000 NOK a year for ten families, excluding salary expenses, and requiring at least a 40% job position. Some informants said that a portion of the initial funds was used to heighten the competence by sending some program workers to get additional education.

*“National professional guidelines are not automatically followed by economical resources. You can say that the map does not always match the terrain” (Interview 3)*

## 6. The future of the program

### *Further efforts*

Informants from all municipalities reported that the components of the intervention program have changed a lot since start-up, and that it is important that it keeps changing as new research and experiences are acquired. Some of the informants were working on getting health nurses connected to the program in order to use the school health services to recruit and follow up the program participants. Some of the informants believed that health nurses need to be more confident when talking about this subject with the parents. They must also be clear, respectful, and prepared for the resistance that parents may present when confronted.

*“It should live, it should grow, and it should develop. We have started something, but we do not have a definitive answer as to how it should be done.” (Interview 1)*

### *Factors in a successful intervention program*

The informants emphasised that physical activity, diet and individual counselling sessions should continue to be a part of the program. Some of the informants also believed that it is important to remember the emotional components, as parents often feel they have failed in their role as parents. The informants also mentioned the importance of involving the entire family,

including siblings and parents, and that the family gets a sense of ownership to the process. Several informants emphasized that lifestyle changes concern more than just energy accounting with food intake and energy expenditure, it involves the regulation of sleep, feelings, hunger and the role food plays in a family's life. Furthermore, some informants believed that parents should work on setting boundaries for their children, as this is essential to make changes at home.

*“It is very important that we do not only consider physical activity and food. We must also think of the children's development in the grand scope of things.”* (Interview 2)

According to the informants, successful implementation of such an intervention program needs key personnel responsible for establishing agreements with the municipality and convincing the municipality administration at different levels. The informants agreed that an initiator with a great sense of commitment and personal drive is an important factor for success of the intervention program. One of the informants explained that having contacts in the local sports club and at the health centre made easier to initiate the program in the municipality. The informants believed that being connected to the local community and using a local sports club were important factors when establishing the intervention programs in the municipalities. In addition, cooperation with local sports clubs seem to make it easier for children to continue participation in organized physical activity after the end of the intervention program.

*“Adequate project funding, an enthusiastic project manager, and some benevolence in municipal administration and management is often what it takes to get a program started”*  
(interview 3)

## **Discussion**

The data illustrates the importance of an eager and determined initiator to establish agreements in the municipality in order to implement the intervention program. The informants had similar experiences with the health nurses that recruited participants, where the health nurses often felt uncomfortable conveying to the parents that their child was overweight or obese. Some parents did not believe that their child was overweight or obese and did not want to get involved with the program. There has been a lack of program evaluations in some of the municipalities, despite the informants' acknowledgement of the importance of evaluations. In some municipalities the program did not receive the financial resources necessary to initiate the intervention program from the municipal council. Being connected to the local community, conducting physical activity sessions, diet courses, individual counselling sessions and the importance of involving the entire family seem to be important components in the intervention program.

Results from the present study reflect an unwillingness to implement the intervention program from one of the municipality councils and the program might not have been established if it had not been for one of the health nurses' determination to establish an initiative for families with overweight children. Such committed and determined people are often referred to as program champions. Program champions are people who are respected and trusted by administrators and staff, are able to gather and maintain support for interventions, and are able to negotiate solutions to problems [23]. The presence of one or more program champions is a valuable resource to encourage innovations, which have also been reported in previous studies [23, 27]. Health nurse who was identified as a program champion in the present study, made it possible to initiate the intervention by acquiring assistance from the municipal chief physician and having contacts in a local sports club and among the municipalities health nurses. This illustrates the influence and importance a program champion can have in a lifestyle intervention program.

In some of the municipalities there was some difficulties getting the health nurses to recruit participants. Even though a child was classified as overweight, some health nurses refrained from telling child's parents if the child did not look overweight. In comparison, other research has reported that health professionals were less likely to refer overweight or obese children for treatment than children who were slightly underweight [28]. Gerards, Dagnelie, Jansen,

DeVries and Kremers [29] reported that insufficient communication skills, low self-efficacy, parents' denial and resistance toward discussing weight issues made it difficult for health professionals to raise the issue of children's overweight. The informants believed that the health nurses need to have more practise and be more prepared for the parents' reactions when telling them that their child is overweight. Toftemo, Glavin and Lagerløv [30] emphasise the importance for clinicians to be respectful and sensitive to both children and parents when addressing childhood overweight and obesity. A strategy to assist health care professionals overcome the obstacles that prevent them from addressing these issues to parents could be to develop guidelines for appropriate methods and strategies to address these issues. This could result in recruitment of more participants who could benefit from participating in intervention programs.

Some of the parents denied that their child was overweight or obese and felt that the health nurses were exaggerating. Júlíusson, Markestad, Bjerknes and Roelants [31] have reported similar findings, where 70% of parents of children aged 2–19 years wrongly classified their overweight children as normal weight. This is consistent with reports from a review, where over 70% of the parents of overweight children underestimated their child's weight status in 6 of 13 studies [32]. This unawareness among parents highlights how important it is that health nurses identify childhood overweight and obesity and refer to suited intervention programs. One informant believed that some parents were resistant to participate in the program because they were afraid that they had to change their own lifestyle, which might also be the reason why they denied that their child was overweight or obese. Previous research has reported that parents of overweight children are especially reluctant to discuss their child's overweight if the parents are overweight themselves [33, 34]. There is no information about whether the parent's weight was the reason for their unwillingness to change lifestyle in the present study. However, this could be taken into consideration for health nurses when recruiting participants to intervention programs.

The informants talked about evaluation in terms of measuring the outcome of the program and the impact on the children's lifestyles and body mass, which represents an effect evaluation. When asked about evaluation, there was no specific mention of process evaluation as a measurement of the program's success. Process evaluation is important to understand which components of public health interventions contribute to success or failure, as well as how and why interventions are successful or not [35]. In spite of the informant's interest in learning if

the program had the desired effect, only one of the municipalities claimed to have conducted effect evaluations. This municipality was also the only one with several years of experience with the program. Informants from all of the municipalities emphasised the importance of effect evaluation in order to get municipality council approval to continue of the program. Still, most of them had not made a plan as for conducting evaluations. One of the municipalities conducted pre-tests, but failed to conduct post-tests, which makes it difficult to evaluate the program's effectiveness. Parental reluctance to participate in post-tests, lack of funding and lack of concrete evaluation planning could be attributed to the lack of post-test measurements. An evaluation plan should, from the start, include details about how the evaluation should be carried out, which recourses will be needed, what data will be collected and by who, and how the data will be analysed and reported [24, 36]. The lack of a comprehensive plan for program evaluation can indicate weakness of the program. According to Klesges, Williams, Buscemi, Kitmann and KS Davis [37], evaluation of childhood obesity intervention programs should be given higher priority in order to provide explanations for variable program outcome and provide insight to successful adaptations of interventions to local conditions [37]. This is the a focus of the new "Norwegian Public Health Report", which emphasises the need for systematic evaluations of local interventions in order to transfer interventions to other municipalities, and for the municipalities to be able to learn from each others' experiences [38].

Some municipal council were resistant to contribute with financial recourses to the implementation process. According to The Department of Health and Human Services [39] and Glanz, Rimer and Viswanath [40], thorough evaluation could serve to influence policy makers and sway political will to provide financial support for intervention programs. In the present study, some of the informants claimed they did not have enough resources to conduct thorough evaluations of the intervention program. Some of the informants also claimed that municipality councils prefer to grant resources to programs they already know have a positive effect. This is a paradox that might have been avoided if the program facilitators placed greater emphasises on evaluation from the start.

The informants believed that connecting the intervention program to the local community and including a local sports club was important for both establishment and feasibility. In addition, several of the participating children joined local sports clubs after attending the intervention program, which could demonstrates the impact and beneficial effects of connecting the program to the local community and local sports clubs. According to Luttikhuis et al., [16],

community interventions might allow greater access to target groups, because the intervention is more easily accessible. The present study reports that physical activity sessions, diet courses, individual counselling sessions and the importance of involving the entire family were the most important focus areas in the intervention programs. The informants thought these should all continue to be a part of the program in the future in order to conduct successful programs. Reviews have reported that the mentioned components seem to be of importance in lifestyle interventions targeting overweight and obese children [16, 41]. However, it is somewhat unclear which components are the most effective, or which treatment programs should be favoured [16, 18]. The informants were aware that it might be necessary to make changes to the program as new research and experience emerge. Changes should be based on experiences of implementation and thorough evaluations of the specific program.

### *Strengths and limitations*

Qualitative methods are best suited when describing and analysing characteristics or qualities of phenomena and a quantitative approach would not have been sufficient to answer the aim of the present study [42]. However, it is difficult to generalize based on results made of qualitative studies [26, 43]. Experiences presented in the present study cannot be used as a standard template for experiences in other municipalities when implementing similar programs. It should be viewed as a source of inspiration and account of the personal experiences of five individuals.

Contextual factors play a major role in qualitative research [26]. It must be acknowledged that the content of the present study and the results presented are based on the researcher's interpretation of what the informants shared during the interviews at that particular time. The sample size in the present study was small, but varied with informants that performed different roles in the intervention programs, with different academic backgrounds. For more comprehensive overview of how the implementations were implemented in the municipalities, additional informants could have been included in the study.

The researcher had no personal or professional involvement with the intervention program in any of the municipalities. This could help ensure a more unbiased view of the programs' implementation, strengths and weaknesses. As far as the researcher knows, no other studies have investigated how interventions targeting overweight and obese children and their families have been implemented in Norwegian municipalities.



## **Conclusions**

Determined and committed individuals, also called program champions were important to both initiate the intervention program and to establish agreements with the municipality council. Barriers in the implementation process were in related to the cooperation with health nurses, parents and the municipality council. Better strategies are needed for involving health nurses, as well as guidelines of how they should approach the issue of childhood overweight and obesity toward the parents. Thorough program evaluation should be conducted in order to examine the program's effect, whether it was successful or not, to improve both current and new programs, and to ensure financial support from the municipal councils. The municipalities were relatively new to this approach conducting interventions, and further research could contribute to a more detailed understanding of important enhancers, barriers and strategies in the implementation process to ensure effective and beneficial intervention programs.

## **List of abbreviations**

BMI	Body Mass Index
IP	Individual Plan
M1	Municipality 1
M2	Municipality 2
M3	Municipality 3
NOK	Norwegian Krone
RCT	Randomized controlled trial
STC	Systematic Text Condensation

## **Competing interests**

The author declare that there are no competing interests

## **Authors' contributions**

ISH planned and conducted the acquisition and interpretation of data of the paper

## **Acknowledgements**

Supervisors, THS and SB, form The University of Agder contributed by contacting informants and revising the manuscript. EA contributed to the analysis and interpretation of data

## References

1. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, Mullany EC, Biryukov S, Achoki T, Alfonso R et al: Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet* 2014, 384(9945):766-781.
2. Hovengen R, Biehl A, Glavin K: Barns vekst i Norge 2008 - 2010 - 2012: høyde, vekt og livvidde blant 3. klassinger. In., vol. 2014:3. Oslo: Nasjonalt folkehelseinstitutt; 2014.
3. Obesity and overweight [<http://www.who.int/mediacentre/factsheets/fs311/en/>]
4. Ebbeling CB, Pawlak DB, Ludwig DS: Childhood obesity: Public-health crisis, common sense cure. *The Lancet* 2002, 360:473-482.
5. Reilly JJ, Methven E, McDowell ZC, Hacking B, Alexander D, Stewart L, Kelnar CJH: Health consequences of obesity. *Archives of disease in childhood* 2003, 88(9):748-752.
6. Lobstein T, Baur L, Uauy R: Obesity in children and young people: a crisis in public health. *Obesity reviews : an official journal of the International Association for the Study of Obesity* 2004, 5(1):4-104.
7. Shuldiner A: Obesity Genes and Gene-Environment-Behavior Interactions: Recommendations for a Way Forward. *Obesity* 2008, 16:S79-S81.
8. Silventoinen K, Rokholm B, Kaprio J, Sørensen TI: The genetic and environmental influences on childhood obesity: a systematic review of twin and adoption studies. *International Journal of Obesity* 2010, 34(1):29-40.
9. Kumanyika SK, Obarzanek E, Stettler N, Bell R, Field AE, Fortmann SP, Franklin BA, Gillman MW, Lewis CE, Poston WC et al: Population-based prevention of obesity: The need for comprehensive promotion of healthful eating, physical activity, and energy balance: A scientific statement from American Heart Association Council on

Epidemiology and Prevention, Interdisciplinary Committee for prevention (formerly the expert panel on population and prevention science). *Circulation* 2008, 118(4):428-464.

10. Branca F, Nikogosian H, Lobstein T: The Challenge of obesity in the WHO European Region and the strategies for response. In. Copenhagen: World Health Organization, Europe; 2007.
11. Singh AS, Mulder C, Twisk JWR, Van Mechelen W, Chinapaw MJM: Tracking of childhood overweight into adulthood: A systematic review of the literature. *Obesity Reviews* 2008, 9(5):474-488.
12. Doak CM, Visscher TLS, Seidell CM, Renders JC: The prevention of overweight and obesity in children and adolescents: A review of interventions and programmes. *Obesity Reviews* 2006, 7(1):111-136.
13. Norwegian Directorate of Health: Forebygging, utredning, og behandling av overvekt og fedme hos barn og unge: Nasjonale faglige retningslinjer for primærhelsetjenesten. In. Oslo: Helsedirektoratet; 2010.
14. Øen G, Stormark KM: Treatment of childhood obesity in Norway – A multi-case study. *Nordisk sygeplejeforskning* 2012, 2(04):263-282.
15. Norwegian Directorate of Health: Veileder for kommunale frisklivssentraler: etablering og organisering. In., rev. edn. Oslo: Helsedirektoratet; 2013.
16. Luttikhuis HO, Baur L, Jansen H, Shrewsbury VA, O'Malley C, Stolk RP, Summerbell CD: Interventions for treating obesity in children. *Cochrane Database of Systematic Reviews* 2009(1).
17. Ho M, Garnett S, Baur L, Burrow T, Stewart L, Neve M, Collins C: Effectiveness of lifestyle interventions in child obesity: A systematic review with meta-analysis. *Pediatrics* 2012, 6:54-55.

18. Waters E, de Silva-Sanigorski A, Hall BJ, Brown T, Campbell KJ, Gao Y, Armstrong R, Prosser L, Summerbell CD: Interventions for preventing obesity in children. *The Cochrane database of systematic reviews* 2011(12):1-223.
19. Bäcklund C, Sundelin G, Larsson C: Effect of a 1-year lifestyle intervention on physical activity in overweight and obese children. *Advances in Physiotherapy* 2011, 13(3):87-96.
20. Kokkvoll A, Grimsgaard S, Njølstad I, Ødegaard R, Flægstad T: Single versus multiple-family intervention in childhood overweight-Finnmark Activity School: A randomised trial. *Archives of disease in childhood* 2013.
21. Waling M, Larsson C, Lind T, Hernell O: A one-year intervention has modest effects on energy and macronutrient intakes of overweight and obese Swedish children. *Journal of Nutrition* 2010, 140(10):1793-1798.
22. Rogers EM: *Diffusion of innovations*, 5th edn. New York: Free Press; 2003.
23. Durlak J, DuPre E: Implementation Matters: A Review of Research on the Influence of Implementation on Program Outcomes and the Factors Affecting Implementation. *American Journal of Community Psychology* 2008, 41(3):327-350.
24. Bartholomew LK, Parcel GS, Kok G, Gottlieb NH, Fernández ME: *Planning health promotion programs: an intervention mapping approach*, 3rd edn. San Francisco: Jossey-Bass; 2011.
25. Øen G, Stormark KM: Participatory action research in the implementing process of evidence-based intervention to prevent childhood obesity: Project design of the "healthy Future" study. *Journal of Obesity* 2013, 2013.
26. Malterud K: *Kvalitative metoder i medisinsk forskning. En innføring*, 3. edn. Oslo: Universitetsforlaget; 2013.

27. Stith S, Pruitt I, Dees J, Fronce M, Green N, Som A, Linkh D: Implementing community-based prevention programming: A review of the literature. *Journal of Primary Prevention* 2006, 27(6):599-617.
28. Miller LA, Grunwald GK, Johnson SL, Krebs NF: Disease severity at time of referral for pediatric failure to thrive and obesity: Time for a paradigm shift? *Journal of Pediatrics* 2002, 141(1):121-124.
29. Gerards S, Dagnelie PC, Jansen M, De Vries N, Kremers S: Barriers to successful recruitment of parents of overweight children for an obesity prevention intervention: a qualitative study among youth health care professionals. *BMC Fam Pract* 2012, 13(37).
30. Toftemo I, Glavin K, Lagerløv P: Parents' views and experiences when their preschool child is identified as overweight: a qualitative study in primary care. *Family Practice* 2013, 30(6):719-723.
31. Júlíusson PB, Markestad T, Bjerknes R, Roelants M: Parental perception of overweight and underweight in children and adolescents. *Acta Paediatrica, International Journal of Paediatrics* 2011, 100(2):260-265.
32. Tompkins C, Seablom M, Brock D: Parental Perception of Child's Body Weight: A Systematic Review. *J Child Fam Stud* 2015, 24(5):1384-1391.
33. Edvardsson K, Edvardsson D, Hörnsten Å: Raising issues about children's overweight - Maternal and child health nurses' experiences. *Journal of advanced nursing* 2009, 65(12):2542-2551.
34. Doolen J, Alpert PT, Miller SK: Parental disconnect between perceived and actual weight status of children: A metasynthesis of the current research. *Journal of the American Academy of Nurse Practitioners* 2009, 21(3):160-166.
35. Linnan L, Steckler A: *Process Evaluation for Public Health Interventions and Research: An Overview*. San Francisco: John Wiley & Sons Inc; 2002.

36. Lee SJ, Altschul I, Mowbray CT: Using planned adaptation to implement evidence-based programs with new populations. *American Journal of Community Psychology* 2008, 41(3-4):290-303.
37. Klesges LM, Williams NA, Buscemi J, Kitzmann KM, Davis KS: External validity reporting in behavioral treatment of childhood obesity: A systematic review. *American Journal of Preventive Medicine* 2012, 42(2):185-192.
38. Meld. St. nr 19: Folkehelsemeldingen, mestring og muligheter. In. Oslo: Ministry of Health and Care Services; 2014-2015.
39. Department of Health and Human Services: Physical Activity Evaluation Handbook. In. Edited by Services UDoHaH, vol. 2014. Atlanta: Centers for Disease Control and Prevention; 2002.
40. Glanz K, Rimer BK, Viswanath K: Health behavior and health education: theory, research, and practice, 4th ed. edn. San Francisco, CA: Jossey-Bass; 2008.
41. McLean N, Griffin S, Toney K, Hardeman W: Family involvement in weight control, weight maintenance and weight-loss interventions: A systematic review of randomised trials. *International Journal of Obesity* 2003, 27:987-1005.
42. Kvale S, Brinkmann S: Det kvalitative forskningsintervju, 2. utg. edn. Oslo: Gyldendal akademisk; 2009.
43. Jacobsen DI: Hvordan gjennomføre undersøkelser? : innføring i samfunnsvitenskapelig metode, 2. utg. edn. Kristiansand: Høyskoleforlaget; 2005.

# **Part III**

## **APPENDIX**

**Ida Sætre Helgeland**

University of Agder

2015

# APPENDIX

## **Contents:**

Appendix 1: Interview guides

Appendix 2: Approval from the Norwegian Social Science Data Services

Appendix 3: Information paper and written consent form



## Appendix 1: Interview guides

### Interview guide – informant 1

Forskningsspørsmål	Intervju spørsmål
Hva er bakgrunnen for intervensjonen?	Kan du begynne med å si litt om hvorfor du har valgt å engasjere deg i akkurat dette prosjektet? <ul style="list-style-type: none"><li>- Hvordan ble Friskus til?</li><li>- bakgrunn, tidligere erfaringer i feltet?</li></ul>
Hvordan har intervensjonen blitt planlagt og gjennomført?	Kan du si litt om hvordan dere arbeidet med å planlegge Friskus? <ul style="list-style-type: none"><li>- hvilke parter var med på dette?</li><li>- når?</li><li>- Hvordan?</li><li>- hvor lenge?</li></ul>
Hvem ble rekruttert og hvordan?	<ul style="list-style-type: none"><li>- Hvordan foregikk rekrutteringen?</li><li>- Hvor mange ble med hvor mange ville ikke?</li><li>- Fikk alle overvektige tilbudet?</li></ul>
Deltagelse	<ul style="list-style-type: none"><li>- Hvilke ord vil du bruke for å beskrive barna og familiene som deltar i Friskus?</li><li>- Har det vært mye frafall underveis?</li><li>- Inntrykk av familienes/barnas opplevelse?</li></ul>
Hvordan og hvor har de blitt testet og hva ble målt?	<ul style="list-style-type: none"><li>- Hva har blitt registrert?</li><li>- Hvilke tester har blitt utført?</li><li>- Hvor og hvordan skjedde testene/målingene</li></ul>
Hva er viktig ved implementering av intervensjonen?	Hvordan ble det når dere skulle sette planene ut i live? <ul style="list-style-type: none"><li>- utfordringer?</li><li>- Imøtekommelse fra andre parter/kommunen?</li><li>- Finansiering?</li><li>- Viktige støttespillere/bidragstivere?</li></ul>
Hvordan har intervensjonen fungert?	Hvilke erfaringer har dere fra å gjennomføre Friskus-modellen?
Hva bør en tenke på ved videreføring av intervensjonen?	Hvordan vil dere bruke erfaringene fra Friskus i videre arbeid?
Evaluerings	Hvordan har dere evaluert prosjektet? <ul style="list-style-type: none"><li>- Underveis?</li><li>- I etterkant?</li></ul>
	Annet?

## Interview guide – informant 2

Bakgrunn	<ul style="list-style-type: none"> <li>• Kan du fortelle litt om hvorfor har du valgt å engasjere deg i dette prosjektet?</li> </ul>
Aktivitetene	<ul style="list-style-type: none"> <li>• Hvordan har det vært å holde aktivitetene for barna?</li> <li>• Hvor ofte holdes det aktiviteter?</li> <li>• Kan du fortelle litt om de ulike typene aktiviteter barna har deltatt på?</li> </ul>
Organisering	<ul style="list-style-type: none"> <li>• Hvordan har aktivitetene blitt planlagt og organisert og hvem står for dette?</li> <li>• Tidsbruk på planlegging og gjennomføring?</li> <li>• Kostnader? Ressurser?</li> <li>• Hva har vært viktige faktorer med tanke på å planlegge aktiviteter?</li> </ul>
Grappa	<ul style="list-style-type: none"> <li>• Hva karakteriserer deltagerne som gruppe?</li> <li>• Hva er ditt inntrykk av barnas opplevde mestring under aktivitetene?</li> <li>• Har dere loggført oppmøte treningene?</li> </ul>
Tilbakemelding	<ul style="list-style-type: none"> <li>• Har du noe inntrykk av hva foreldrene mener om aktivitetsgruppa barna deltar på?</li> <li>• Hva mener barna selv?</li> </ul>
Evaluering	<ul style="list-style-type: none"> <li>• Hva har fungert bra med aktivitetene?</li> <li>• Hva burde blitt gjort annerledes?</li> <li>• Har det blitt gjort noen endringer underveis?</li> </ul>
	Annet?

## Interview guide – informant 3

<b>Forskningsspørsmål</b>	<b>Intervjuspørsmål</b>
Hvorfor har du valgt å engasjere deg i intervensjonen?	Kan du begynne med å si litt om hvorfor du har valgt å engasjere deg i akkurat dette prosjektet?
Hvordan har intervensjonen blitt planlagt?	Kan du si litt om hvordan dere arbeidet med å planlegge Friskus?
Hvor viktig er støtte fra kommunen ved implementering av en slik intervensjon?	Hva har vært kommunens rolle i dette? Hvem er viktige støttespillere? <ul style="list-style-type: none"> <li>- Kompetanse</li> <li>- ansvarsfordeling</li> <li>- økonomi/midler</li> </ul>
Hvordan har intervensjonen fungert?	Hvilke erfaringer har dere fra å gjennomføre Friskus-modellen? <ul style="list-style-type: none"> <li>- Hvilke elementer bør en ha med for å få en vellykket intervensjon?</li> <li>- Kommunikasjon mellom parter?</li> <li>- Motstand på veien?</li> </ul>
Hva bør en tenke på ved videreføring og implementering av intervensjonen?	Hvordan kan en bruke erfaringer fra Friskus videre?
Evaluering	Hvorfor er det viktig å evaluere slike intervensjoner?
	Annet?

## Interview guide – informant 4 and 5

<b>Forskningsspørsmål</b>	<b>Intervjuspørsmål</b>
Hvem har vært engasjert i prosjektet og hva er deres bakgrunn?	Kan du begynne med å si litt om hvorfor du har valgt å engasjere deg i akkurat dette prosjektet?
Hvordan har prosessen med utviklingen av tilbudet vært?	Kan du si litt om hvordan dere arbeidet med å planlegge og utvikle tilbudet?
Hvordan har samarbeidet mellom helsesøstertjenesten og frisklivssentralen blitt etablert?	Hvordan det var å etablere tiltak «på tvers» av organisasjon (kommunen)?
Hvordan driftes tilbudet i dag?	Hvem dekker utgiftene og hvilken kompetanse kreves?
Hvordan har intervensjonen fungert så langt?	Hvilke erfaringer har dere fra å gjennomføre denne modellen?
Har frisklivssentralen utført lignende prosjekter tidligere?	Hvilke erfaringer fra tidligere prosjekter kan dere eventuelt benytte her?
Hva har blitt gjort av evaluering?	Har dere en plan for evaluering av prosjektet?
	Annet?

## Appendix 2: Approval from the Norwegian Social Science Data Services

### Norsk samfunnsvitenskapelig datatjeneste AS

NORWEGIAN SOCIAL SCIENCE DATA SERVICES



Harald Hårfagres gate 29  
N-5007 Bergen  
Norway  
Tel: +47-55 58 21 17  
Fax: +47-55 58 96 50  
nsd@nsd.uib.no  
www.nsd.uib.no  
Org.nr. 985 321 884

Sveinung Berntsen  
Institutt for folkehelse, idrett og ernæring Universitetet i Agder  
Serviceboks 422  
4604 KRISTIANSAND S

Vår dato: 07.10.2014

Vår ref: 40009 / 3 / LT

Deres dato:

Deres ref:

#### TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 25.09.2014. Meldingen gjelder prosjektet:

40009	<i>Friskus - Beskrivelse og evaluering av en livsstilsintervensjon rettet mot overvektige barn og deres familier</i>
<i>Behandlingsansvarlig</i>	<i>Universitetet i Agder, ved institusjonens øverste leder</i>
<i>Daglig ansvarlig</i>	<i>Sveinung Berntsen</i>
<i>Student</i>	<i>Ida Merethe Sætre Helgeland</i>

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://pvo.nsd.no/prosjekt>.

Personvernombudet vil ved prosjektets avslutning, 01.01.2017, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Katrine Utaaker Segadal

Lis Tenold

Kontaktperson: Lis Tenold tlf: 55 58 33 77

Vedlegg: Prosjektvurdering

*Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.*

*Avdelingskontorer / District Offices:*

OSLO: NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no  
TRONDHEIM: NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. kyrre.svarva@svt.ntnu.no  
TROMSØ: NSD, SVF, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 36. nsdmaa@svt.uib.no

## **Appendix 3: Information paper and written consent form**

### **Forespørsel om deltakelse i undersøkelse**

#### **Tittel på studiet:**

Beskrivelse og evaluering av implementering av en livsstilintervensjon rettet mot overvektige barn og deres familier.

#### **Bakgrunn og hensikt:**

Mange kommuner iverksetter tiltak og implementerer intervensjoner uten å gjennomføre grundige evalueringer av hvilken virkninger disse kan ha. Hensikten med dette studiet er å beskrive og evaluere implementeringen av pilotprosjektene Friskus 1 og Friskus 2, samt hovedstudien. Jeg ønsker med dette å finne ut hvordan vi i fremtiden bedre kan håndtere, planlegge og implementere intervensjoner rettet mot barn og unge med overvekt.

#### **Hva innebærer studien:**

Du er invitert til å delta i en samtale om utvikling, planlegging og implementering av en livsstilsintervensjon rettet mot overvektige barn og deres familier. Målet for studien vil være å beskrive erfaringer fra implementering av intervensjonen. Jeg ønsker å finne ut av hva som har fungert bra i implementeringen av intervensjonen og om det er noe som eventuelt burde blitt gjort annerledes. For å komme fram til denne informasjonen ønsker jeg å intervju deg, som har sterk tilknytning til prosjektet og som er. Du kommer ikke til å bli spurt om noen om forhold ved egen helse.

#### **Mulige fordeler og ulemper:**

Ved å delta i denne studien kan du være med på å forbedre framtidige intervensjoner som rettes mot forebygging av overvektige barn og deres familier. Intervjuet åpner opp for refleksjon rundt prosjektet du har vært en del av. Det er et mål at resultatene som kommer fram i utviklingen og gjennomføringen av selve forskningsprosjektet vil publiseres anerkjente tidsskrifter. Det utbetales ingen honorar for å være med i undersøkelsen.

#### **Hva skjer med informasjonen om deg (informanten):**

Informasjonen som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Samtalene som blir tatt opp på bånd, vil bli skrevet ut som en tekst. I den forbindelse

samt i notater vil alle navn bli byttet ut. Det vil ikke være mulig å gjenkjenne navn eller stemme uten å direkte høre på båndopptaket. Det er kun autorisert personell knyttet til prosjektet som har adgang til navnelisten og som kan finne tilbake til deg.

#### **Utlevering av materiale og opplysninger til andre:**

Anonymitet tilstrebes, men det kan ikke utelukkes at du kan gjenkjennes på bakgrunn av utsagn og data på grunn av din nære tilknytning til studien.

#### **Oppbevaring og dato for sletting av data:**

Opptak og andre opplysninger som kan knyttes til deg vil slettes senest 01.01.2017.

#### **Rett til innsyn og sletting av opplysninger om deg:**

Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

#### **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, uten at det vil ha noen konsekvenser. Dersom du ønsker å delta, undertegner du samtykkeerklæringen på siste side. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du kontakte prosjektleder/kontaktperson (se under).

#### **Særskilte hensyn**

Det presiseres at du under intervjuet ikke kan uttale deg om enkelte av barna/deltagerne i gruppene, men kun om gruppa som helhet.

#### **Informasjon om utfallet av studien**

Som deltaker har du rett til å få informasjon om utfallet/resultatet av studien.

**Kontaktpersoner/veiledere for undersøkelsen som kan gi opplysninger:**

- Masterstudent: Ida M. S. Helgeland – [ida\\_helgeland@hotmail.com](mailto:ida_helgeland@hotmail.com) tlf: 481 39 432
- Veileder: Sveinung Berntsen Stølevik – [sveinung.berntsen@uia.no](mailto:sveinung.berntsen@uia.no)
- Veileder: Tonje Holve Stea – [tonje.h.stea@uia.no](mailto:tonje.h.stea@uia.no)
- Veilder: Eirik Abildsnes - [eirik.abildsnes@kristiansand.kommune.no](mailto:eirik.abildsnes@kristiansand.kommune.no)

## Samtykke til deltakelse i undersøkelsen:

- Jeg har lest informasjonsskrivet om forespørsel om å delta i forskningsprosjektet, og gir min tilslutning til å delta i undersøkelsen.
- Jeg er kjent med at jeg når som helst kan trekke meg fra prosjektet uten å måtte oppgi grunn for det.
- Jeg er klar over at de innsamlede data utelukkende brukes til forskning.

Jeg er villig til å delta i studien

-----  
(Signert av prosjektdeltaker, dato)

Jeg bekrefter å ha gitt informasjon om studien

-----  
(Signert, rolle i studien, dato)